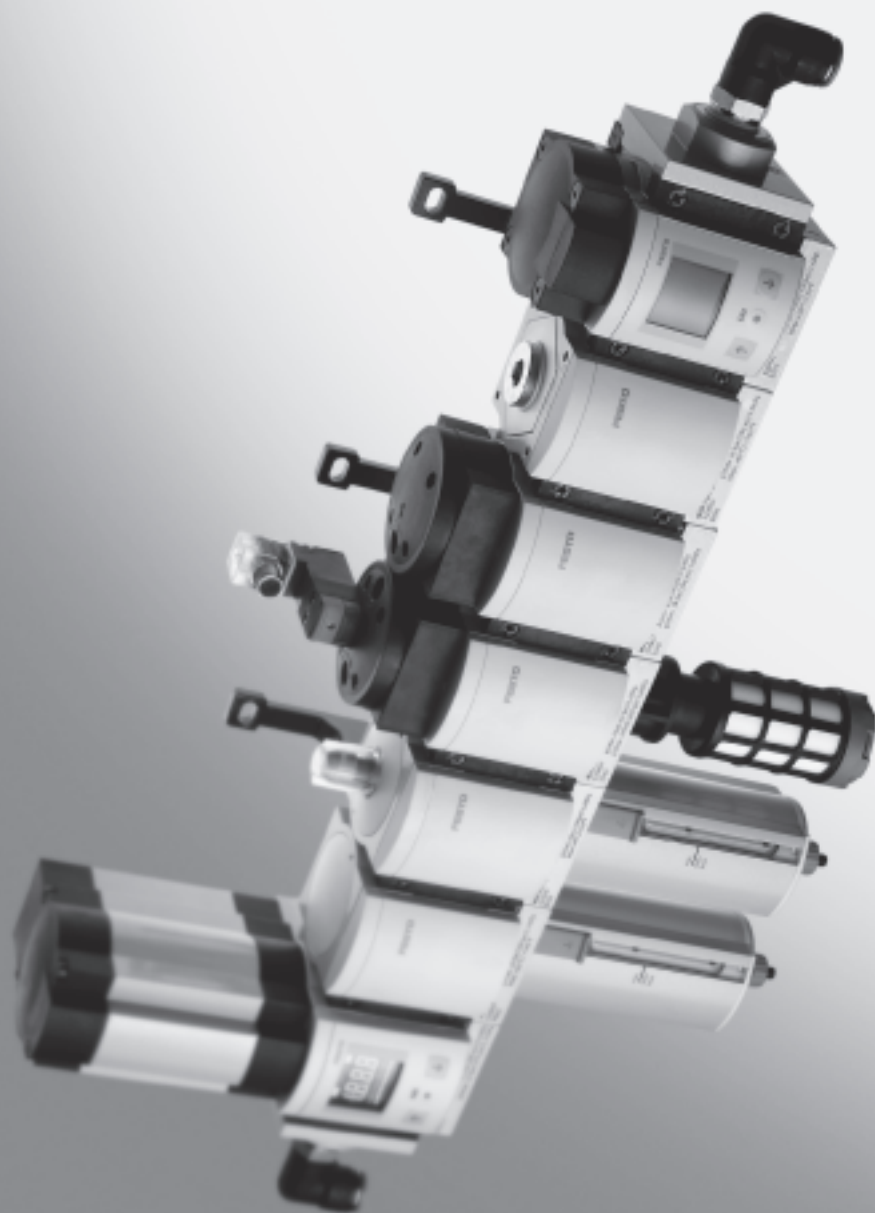


Wide range of configuration options

→ 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

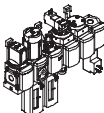
Specified types in accordance with
ATEX directive for potentially
explosive atmospheres

→ www.festo.com/en/ex

MS series service units

Product range overview

FESTO

Type	Size				Pressure regulation range						Grade of filtration			
					[bar]						[µm]			
			Pneumatic connection in housing	Connecting plate	0.05 ... 0.7	0.05 ... 2.5	0.1 ... 4	0.3 ... 7	0.1 ... 12	0.5 ... 16				
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

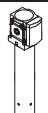
FESTO

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 G1/8	Adapter for EN pressure gauge G1/4	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	–	■	■	–	■	■	■	■	–	■	–	■	■	–	■	3-18
Filters MS-LF	4	■	■	■	■	■	–	–	–	–	–	–	–	–	–	■	4-2, 4-4
	6	■	■	■	■	■	■	–	–	–	–	–	–	–	–	■	
	12	–	■	■	–	■	■	–	–	–	–	–	–	–	–	■	4-26, 4-28
Fine and micro filters MS-LFM	4	■	■	■	■	■	–	–	–	–	–	–	–	–	–	■	4-2, 4-12
	6	■	■	■	■	■	■	–	–	–	–	–	–	–	–	■	
	12	–	■	■	–	■	■	–	–	–	–	–	–	–	–	■	4-26, 4-33
Activated carbon filters MS-LFX	4	■	■	■	–	–	–	–	–	–	–	–	–	–	–	■	4-2, 4-20
	6	■	■	■	–	–	–	–	–	–	–	–	–	–	–	■	
	12	–	■	–	–	–	–	–	–	–	–	–	–	–	–	■	4-26, 4-40
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

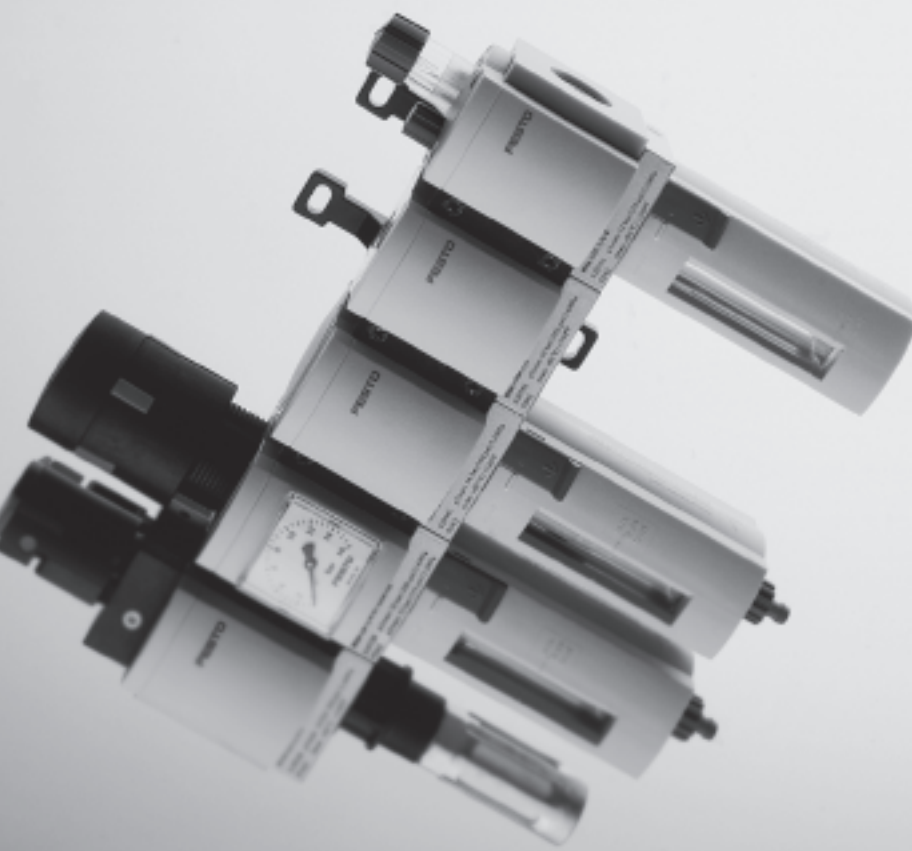
Product range overview

FESTO

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
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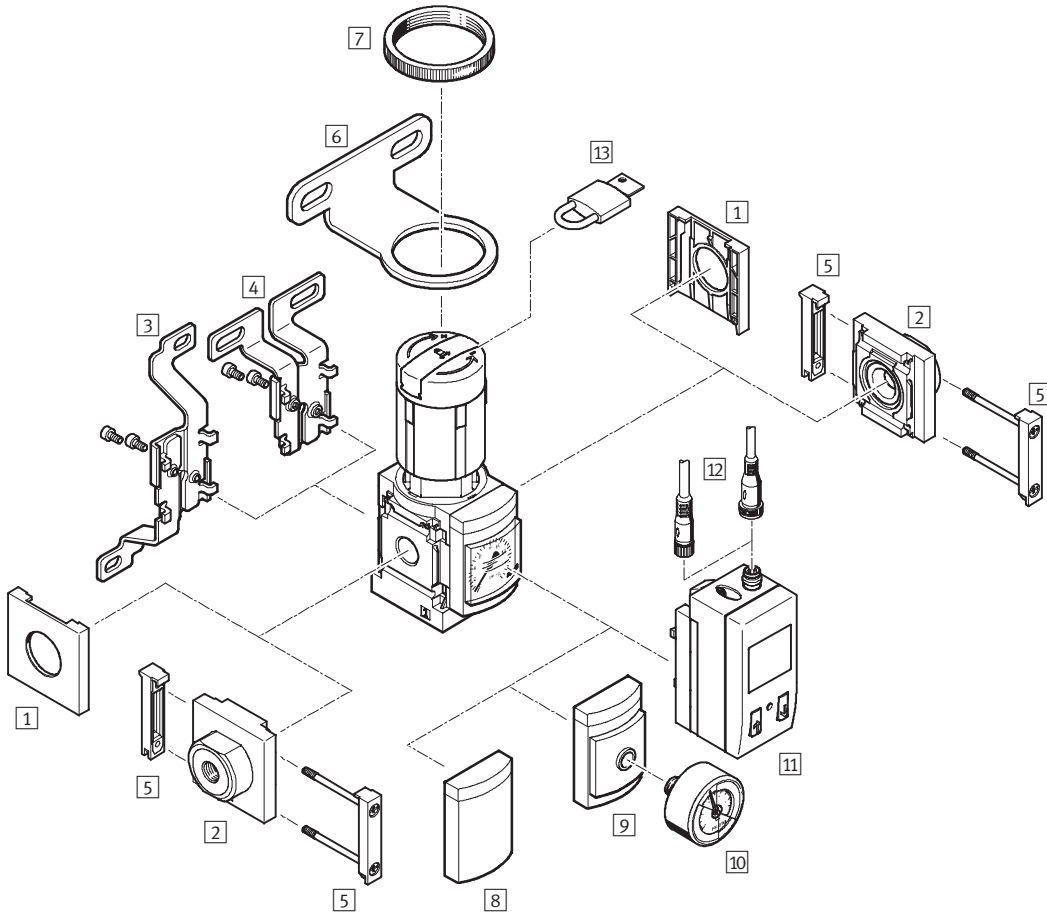


Pressure regulators MS4/MS6-LR/LRB, MS series

Peripherals overview

FESTO

Pressure regulator LR



Pressure regulators MS4/MS6-LR/LRB, MS series

Peripherals overview

FESTO

Mounting attachments and accessories – LR						
		Individual unit		Combination → 3/2.11-0		→ Page
		without connect- ing plate	with connecting plate	without connect- ing plate	with connecting plate	
1	Cover cap MS4/6-END	■	–	■	–	11-3
2	Connecting plate MS4/6-AG...	–	■	–	■	11-2
3	Mounting bracket MS4/6-WB	■	■	–	–	11-4
4	Mounting bracket MS4-WBM	■	■	–	–	11-4
5	Module connector MS4/6-MV	–	■	■	■	11-9
6	Regulator wall bracket MS4/6-WR	■	■	–	–	11-5
7	Knurled nut (included in scope of delivery) MS-LR	■	■	–	–	–
8	Cover plate VS	■	■	■	■	5-14
9	Adapter for EN pressure gauge 1/8/1/4 A8/A4	■	■	■	■	5-14
10	Pressure gauge MA	■	■	■	■	11-10
11	Pressure sensor SDE1-...-MS AD1 ... AD4	■	■	■	■	5-14
12	Plug socket with cable SIM-M8-3.../SIM-M12-4...	■	■	■	■	11-10
13	Padlock LRVS-D	■	■	■	■	11-11
–	Mounting bracket MS4/6-WP/WPB/WPM	–	■	■	■	11-7, 11-8

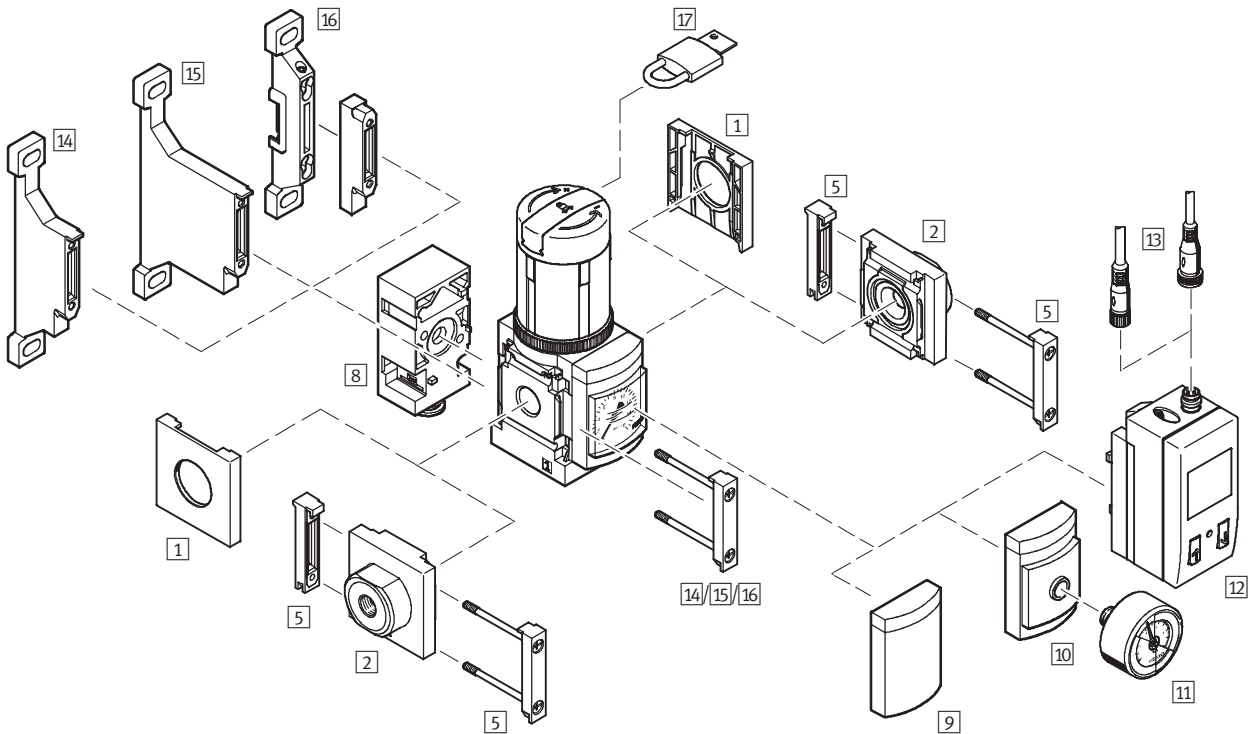
Pressure regulators MS4/MS6-LR/LRB, MS series

Peripherals overview

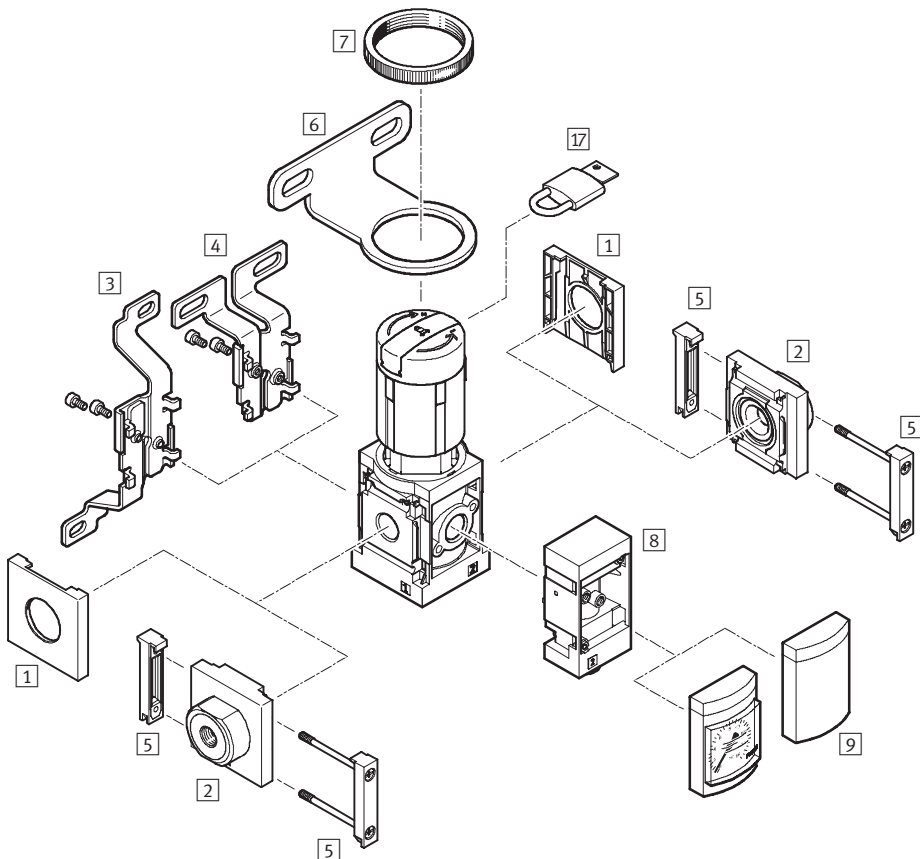
FESTO

Pressure regulator LRB

Pressure output at rear



Pressure output to front Z



Pressure regulators MS4/MS6-LR/LRB, MS series

Peripherals overview

FESTO

Mounting attachments and accessories – LRB						
		Individual unit		Combination ➔ 3/2.11-0		➔ Page
		without connect- ing plate	with connecting plate	without connect- ing plate	with connecting plate	
1	Cover cap MS4/6-END	■	–	■	–	11-3
2	Connecting plate MS4/6-AG...	–	■	–	■	11-2
3	Mounting bracket MS4/6-WB	■	■	–	–	11-4
4	Mounting bracket MS4-WBM	■	■	–	–	11-4
5	Module connector MS4/6-MV	–	■	■	■	11-9
6	Regulator wall bracket MS4/6-WR	■	■	–	–	11-5
7	Knurled nut (included in scope of delivery) MS-LR	■	■	–	–	–
8	Angled outlet block B...	■	■	■	■	5-22
9	Cover plate VS	■	■	■	■	5-22
10	Adapter for EN pressure gauge 1/8/1/4 A8/A4	■	■	■	■	5-22
11	Pressure gauge MA	■	■	■	■	11-10
12	Pressure sensor SDE1-...-MS AD1 ... AD4	■	■	■	■	5-22
13	Plug socket with cable SIM-M8-3.../SIM-M12-4...	■	■	■	■	11-10
14	Mounting bracket MS4/6-WP	–	■	■	■	11-7
15	Mounting bracket MS4/6-WPB	–	■	■	■	11-7
16	Mounting bracket MS4/6-WPM	–	■	■	■	11-8
17	Padlock LRVS-D	■	■	■	■	11-11

Pressure regulators MS4/MS6-LR/LRB, MS series

Type codes

FESTO

		MS	6	-	LRB	-	1/2	-	D7	-		-	AS	-	BD
Series															
MS	Standard service unit														
Size															
4	Grid dimension 40 mm														
6	Grid dimension 62 mm														
Service function															
LR	Pressure regulator														
LRB	Pressure regulator for manifold assembly														
Connection size															
1/8	Thread G1/8														
1/4	Thread G1/4														
3/8	Thread G3/8														
1/2	Thread G1/2														
Pressure regulation range															
D5	0.3 ... 4 bar														
D6	0.3 ... 7 bar														
D7	0.5 ... 12 bar														
Pressure gauge alternatives															
	Integrated pressure gauge														
A8	Adapter plate for EN pressure gauge 1/8, without pressure gauge														
A4	Adapter plate for EN pressure gauge 1/4, without pressure gauge														
Security															
AS	Lockable rotary knob as standard														
Pressure output (LRB only)															
	Without angled outlet block														
BD	Angled outlet block QS-8														

Further variants can be ordered using the modular system

Pressure regulators LR	→ 5-14
Pressure regulators LRB	→ 5-22

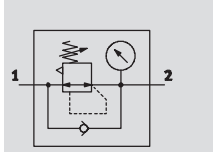
- Connecting plates
- Pressure regulation range
- Pressure gauge alternatives
- Alternative pressure gauge scale
- Secondary venting
- Rotary knob alternative
- Alternative mounting position
- Pressure output (LRB only)
- Type of mounting
- Alternative flow direction

Pressure regulators MS4/MS6-LR, MS series

Technical data

FESTO

Function
with pressure gauge



-  - Flow rate
1,000 ... 7,500 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
→ 5-13

The pressure regulator maintains a constant working pressure (secondary side), regardless of the pressure variations in the system (primary side) and the air consumption.



- Good control characteristics with low hysteresis and primary pressure compensation
- High flow rate with minimal pressure drop
- Available with or without secondary venting
- Setting values are secured by locking the rotary knob
- Lockable rotary knob
- Four pressure regulation ranges: 0.3 ... 4 bar, 0.3 ... 7 bar, 0.5 ... 12 bar and 0.5 ... 16 bar
- Two pressure gauge connections for different fitting options
- Return flow option for exhausting from output 2 to output 1
- Optional pressure sensor with display
- Optional rotary knob pressure gauge for size MS4

General technical data					
Size		MS4		MS6	
Pneumatic connection 1, 2		G1/8	G1/4	G1/4	G3/8
Design		Directly actuated diaphragm regulator			
Regulating function		With primary pressure compensation			
		With/without secondary venting			
		Output pressure constant			
Type of mounting		Via accessories			
		In-line installation			
		Front panel mounting			
Assembly position		Any			
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			

New
Variants AD..., KD, DM...

Pressure regulators MS4/MS6-LR, MS series

Technical data

FESTO

Standard nominal flow rate $q_{nN}^{1)}$ [l/min]					
Size		MS4		MS6	
Pneumatic connection		G $\frac{1}{8}$	G $\frac{1}{4}$	G $\frac{1}{4}$	G $\frac{3}{8}$
Pressure regulation range	D5	1,200 ²⁾	2,100 ²⁾	2,400 ²⁾	5,500 ²⁾
	D6	1,150	1,800	3,000	5,800
	D7	1,000	1,700	2,700	4,500
	D8	–	–	2,200	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				
Variant		Standard		Pressure sensor with display AD...
Size		MS4	MS6	MS4
Input pressure [bar]		0.8 ... 14	0.8 ... 20	0.8 ... 14
Operating medium		Compressed air		Filtered compressed air, lubricated or unlubricated, grade of filtration 40 μ m
Ambient temperature [°C]		–10 ... +60	–10 ... +60	0 ... +50
Temperature of medium [°C]		–10 ... +60	–10 ... +60	0 ... +50
Storage temperature [°C]		–10 ... +60	–10 ... +60	–10 ... +60
Corrosion resistance CRC ¹⁾		2		

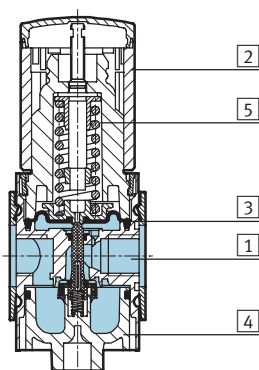
1) Corrosion resistance class 2 according to Festo standard 940 070

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		MS6
Pressure regulator		730

Materials

Sectional view



Pressure regulator	
1	Body
2	Regulating knob
3	Diaphragm
4	Bottom cap
5	Springs
–	Seals
Note on materials	

Die-cast aluminium

Polyamide/polyacetate

Nitrile rubber

Polyester, fibreglass reinforced

Steel

Nitrile rubber

Free of copper and PTFE only with cover plate VS

Pressure regulators MS4/MS6-LR, MS series

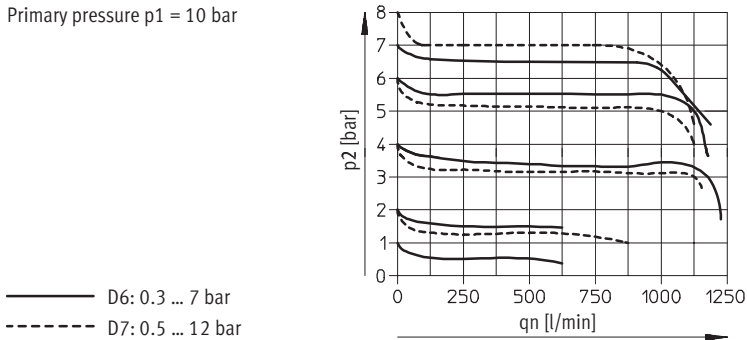
Technical data

FESTO

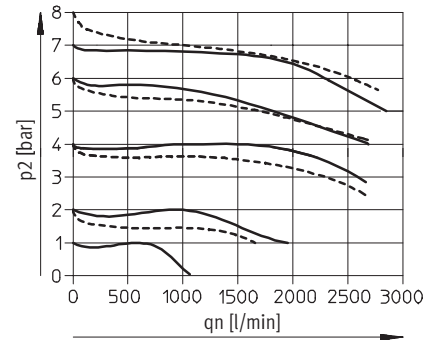
Standard flow rate q_n as a function of output pressure p_2

MS4-LR-1/8

Primary pressure $p_1 = 10$ bar

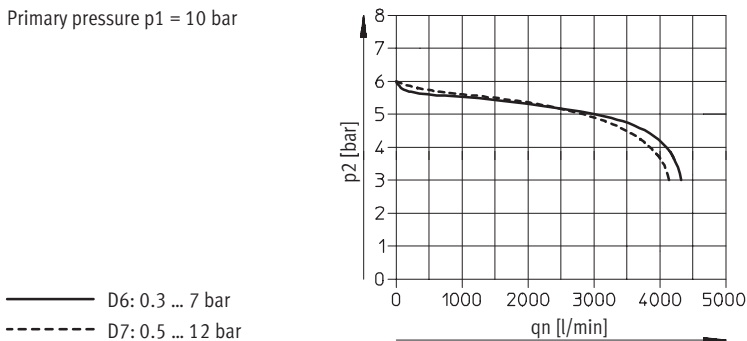


MS4-LR-1/4

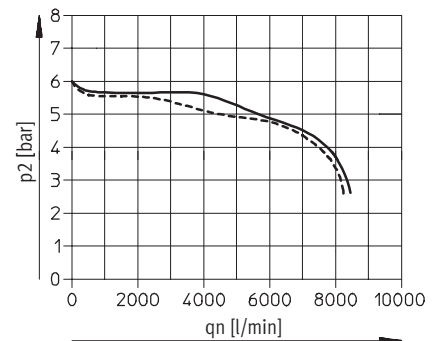


MS6-LR-1/4

Primary pressure $p_1 = 10$ bar

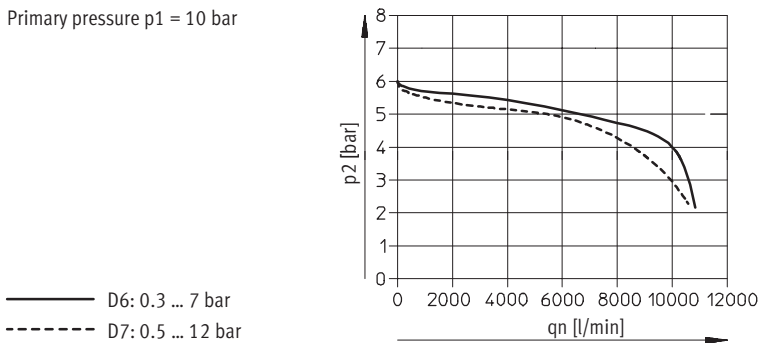


MS6-LR-3/8



MS6-LR-1/2

Primary pressure $p_1 = 10$ bar



Pressure regulators MS4/MS6-LR, MS series

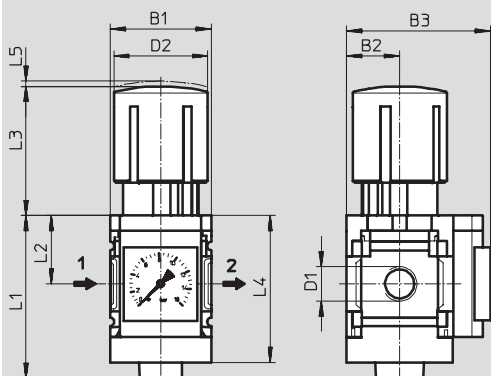
Technical data

FESTO

Dimensions – Standard

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

With pressure gauge, display unit [bar]



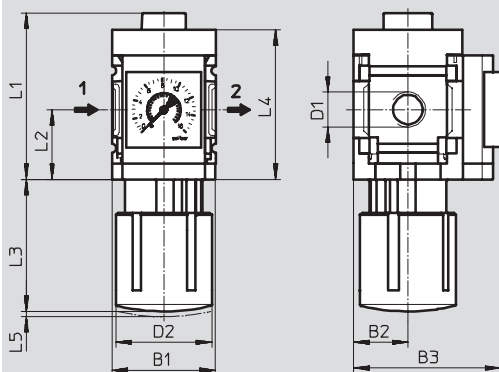
→ Flow direction

Type	B1	B2	B3	D1	D2	L1	L2	L3	L4	L5
MS4-LR-1/8	40	21	57	G1/8	37.2	64.4	27	51.1	58	2
MS4-LR-1/4				G1/4						
MS6-LR-1/4	62	31	77	G1/4	51	93	39	86	84	5
MS6-LR-3/8				G3/8						
MS6-LR-1/2				G1/2						

Dimensions – Alternative mounting position

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

Rotary knob underneath KD, standard rotary knob, with pressure gauge



→ Flow direction

Type	B1	B2	B3	D1	D2	L1	L2	L3	L4	L5
MS4-LR-1/8-...-KD	40	21	57	G1/8	37.2	64.4	27	51.1	58	2
MS4-LR-1/4-...-KD				G1/4						
MS4-LR-1/4-...-KD	62	31	77	G1/4	51	93	39	86	84	5
MS6-LR-3/8-...-KD				G3/8						
MS4-LR-1/4-...-KD				G1/2						

Pressure regulators MS4/MS6-LR, MS series

Technical data

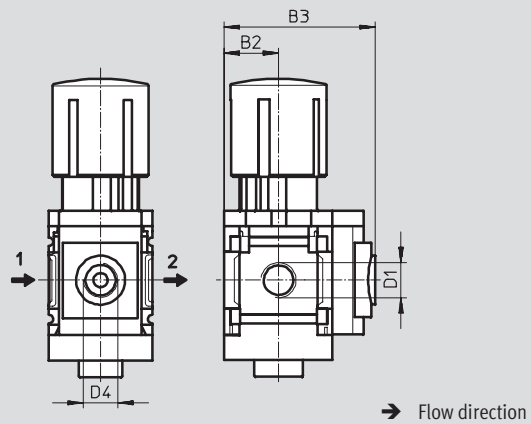
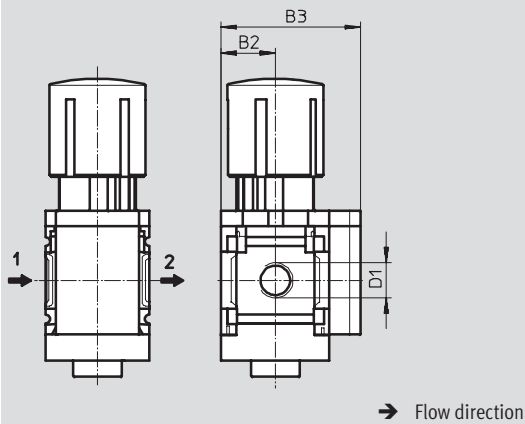
FESTO

Dimensions – Pressure gauge alternatives

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

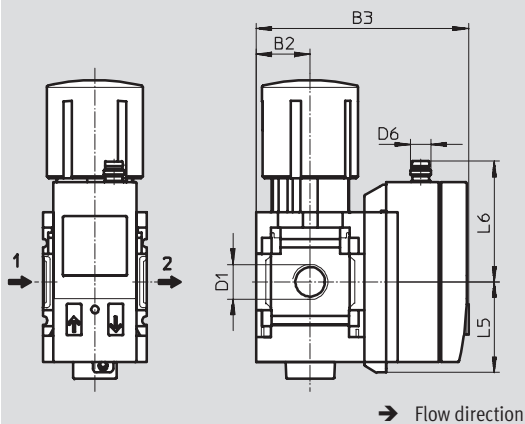
Cover plate VS

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-LR-1/8-...-VS	21	54	G1/8	-	-	-	-
MS4-LR-1/4-...-VS			G1/4				
MS4-LR-1/8-...-A8	21	58.5	G1/8	G1/8	-	-	-
MS4-LR-1/4-...-A8			G1/4				
MS4-LR-1/8-...-A4	21	58.5	G1/8	G1/4	-	-	-
MS4-LR-1/4-...-A4			G1/4				
MS4-LR-1/8-...-AD1/AD2	21	82.6	G1/8	-	M8x1	35.1	46.7
MS4-LR-1/4-...-AD1/AD2			G1/4				
MS4-LR-1/8-...-AD3/AD4	21	82.6	G1/8	-	M12x1	35.1	55.8
MS4-LR-1/4-...-AD3/AD4			G1/4				
MS6-LR-1/4-...-VS	31	76	G1/4	-	-	-	-
MS6-LR-3/8-...-VS			G3/8				
MS6-LR-1/2-...-VS			G1/2				
MS6-LR-1/4-...-A4	31	78.5	G1/4	G1/4	-	-	-
MS6-LR-3/8-...-A4			G3/8				
MS6-LR-1/2-...-A4			G1/2				
MS6-LR-1/4-...-AD1/AD2	31	103	G1/4	-	M8x1	35.1	46.7
MS6-LR-3/8-...-AD1/AD2			G3/8				
MS6-LR-1/2-...-AD1/AD2			G1/2				
MS6-LR-1/4-...-AD3/AD4	31	103	G1/4	-	M12x1	35.1	55.8
MS6-LR-3/8-...-AD3/AD4			G3/8				
MS6-LR-1/2-...-AD3/AD4			G1/2				

New
Variants AD..., KD, DM...

Pressure regulators MS4/MS6-LR, MS series

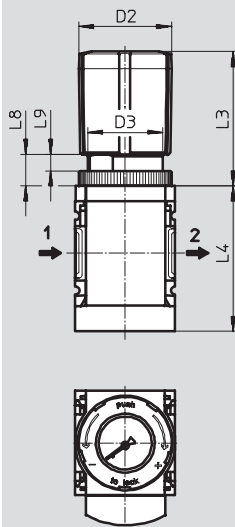
Technical data

FESTO

Dimensions – Rotary knob pressure gauge

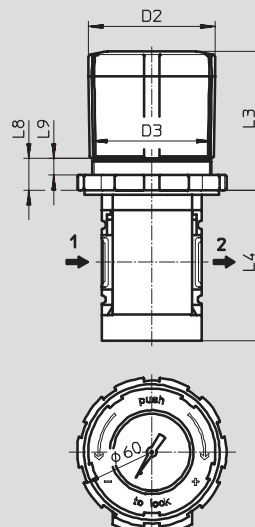
Download CAD-Daten → www.festo.com/de/engineering

Small DM1



→ Flow direction

Large DM2



Note

Due to the protruding rotary knob, only a MS4-FRM branching module can be connected as a directly adjacent service unit.

→ Flow direction

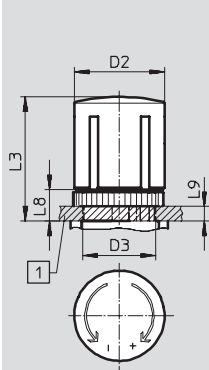
Type	D2	D3	L3	L4	L8	L9
MS4-LR-...-DM1	37.2	M30x1.5	54	58.5	13	6.7
MS4-LR-...-DM2	51.1	M48x1.5	55.7	60.5	13	6.6

Dimensions – Rotary knob

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

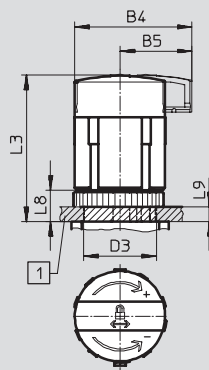
For installation into control panel

Standard

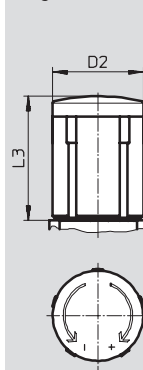


1 Max. control panel thickness

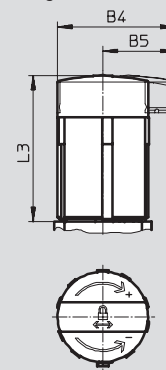
Standard, lockable AS



Long LD



Long, lockable LD-AS



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

Pressure regulators MS4/MS6-LR, MS series

Technical data

FESTO

Ordering data			
Pressure gauge, lockable standard type rotary knob			
Size	Connection	Part No.	Type
Pressure regulation range 0.3 ... 4 bar			
MS4	G1/8	529 421	MS4-LR-1/8-D5-AS
	G1/4	529 415	MS4-LR-1/4-D5-AS
MS6	G1/4	529 995	MS6-LR-1/4-D5-AS
	G3/8	530 001	MS6-LR-3/8-D5-AS
	G1/2	529 989	MS6-LR-1/2-D5-AS
Pressure regulation range 0.3 ... 7 bar			
MS4	G1/8	529 423	MS4-LR-1/8-D6-AS
	G1/4	529 417	MS4-LR-1/4-D6-AS
MS6	G1/4	529 997	MS6-LR-1/4-D6-AS
	G3/8	530 003	MS6-LR-3/8-D6-AS
	G1/2	529 991	MS6-LR-1/2-D6-AS
Pressure regulation range 0.5 ... 12 bar			
MS4	G1/8	529 425	MS4-LR-1/8-D7-AS
	G1/4	529 419	MS4-LR-1/4-D7-AS
MS6	G1/4	529 999	MS6-LR-1/4-D7-AS
	G3/8	530 005	MS6-LR-3/8-D7-AS
	G1/2	529 993	MS6-LR-1/2-D7-AS

Ordering data – Wearing parts kits			
Size	Part No.	Type	
MS4	673 649	MS4-LR/LRB	
MS6	673 650	MS6-LR/LRB	

 New
Variants AD..., KD, DM...

Pressure regulators MS4/MS6-LR, MS series

Ordering data – Modular products

FESTO

[M] Mandatory data →

Module No.	Series	Size	Function	Connection size	Pressure regulation range
527 690 527 663	MS	4 6	LR	1/8, 1/4, 3/8, 1/2, AGA, AGB, AGC, AGD, AGE	D5 D6 D7 D8
Ordering example					
527 690	MS	4	- LR	- AGB	- D6

Ordering table

Grid dimension	[mm]	40	62	Condi- tions	Code	Enter code
[M] Module No.		527 690	527 663			
Series		Standard			MS	MS
Size		4	6		...	
Function		Pressure regulator			-LR	-LR
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		[1]	-D8	

[1] D8 Not with rotary knob alternative DM2.

Transfer order code

	MS		- LR			
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Pressure regulators MS4/MS6-LR, MS series

Ordering data – Modular products

FESTO

→ 0 Options

Pressure gauge alternatives	Alternative pressure gauge scale	Secondary venting	Rotary knob alternative	Alternative assembly position	Security	Type of mounting	Alternative flow direction
VS A8 A4 AD1 AD2 AD3 AD4	PSI MPA	OS	LD DM1 DM2	KD	AS	WR WP WPM WB WBM	Z
- AD3	-	- OS	- LD	-	- AS	- WB	- Z

Ordering table							
Grid dimension	[mm]	40	62	Condi- tions	Code	Enter code	
0 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, plug M8, 1 switch output PNP, 3-pin			2	-AD1		
	Pressure sensor with display, plug M8, 1 switch output NPN, 3-pin			2	-AD2		
	Pressure sensor with display, plug M12, 1 switch output PNP, 4-pin, analogue output 4 ... 20 mA			2	-AD3		
	Pressure sensor with display, plug M12, 1 switch output NPN, 4-pin, analogue output 4 ... 20 mA			2	-AD4		
Alternative pressure gauge scale	psi			3	-PSI		
	MPa			3	-MPA		
Secondary venting	Without secondary venting			4	-OS		
Rotary knob alternative	Long rotary knob				-LD		
	Rotary knob pressure gauge, small	-		5	-DM1		
	Rotary knob pressure gauge, large	-		6	-DM2		
Alternative assembly position	Rotary knob at bottom			7	-KD		
Security	Lockable rotary knob			8	-AS		
Type of mounting	Wall mounting bracket with knurled nut for regulator head			9	-WR		
	Wall mounting plate			10	-WP		
	Wall mounting plate			10	-WPM		
	Wall mounting bracket			11	-WB		
	Wall mounting bracket	-			-WBM		
Alternative flow direction	Flow direction from right to left				-Z		

- 2 **AD1 ... AD4** Measuring range max. 10 bar
Not with pressure regulation range D8
Not with rotary knob alternative DM2
- 3 **PSI, MPA** Not with pressure gauge alternatives VS, A8, A4, AD1, AD2, AD3, AD4
Not with rotary knob alternatives DM1, DM2
- 4 **OS** Not with rotary knob alternatives DM1, DM2
- 5 **DM1** Only with one pressure gauge alternative VS, A8, A4, AD1, AD2, AD3 or AD4
- 6 **DM2** Only with one pressure gauge alternative VS, A8, A4

- 7 **KD** Not with alternative pressure gauge scale PSI, MPA
Not with mounting type WP
Not with rotary knob alternatives DM1, DM2
- 8 **AS** Not with rotary knob alternatives DM1, DM2
- 9 **WR** Not with long rotary knob LD
Not with rotary knob alternative DM2.
- 10 **WP, WPM** Only with connecting plate AGA, AGB, AGC, AGD or AGE
- 11 **WB** Not with rotary knob alternative DM2

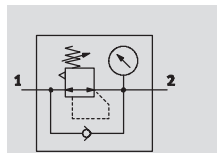
Transfer order code

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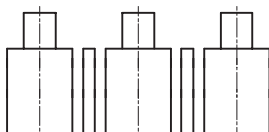
Pressure regulators MS4/MS6-LRB, MS series

Technical data

Function
with pressure gauge



LRB-manifold
with through pressure supply for
manifold assembly



-  - Flow rate
300 ... 7,300 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
➔ 5-21

The pressure regulator is suitable for manifold assemblies with through air supply on both sides, for configuring a regulator manifold with separate, independent pressure regulation ranges. Pressure output is at the front or rear.



- Good control characteristics with low hysteresis and primary pressure compensation
- Manifold assembly with through air supply
- For configuring a regulator manifold with independent pressure regulation ranges
- Available with or without secondary venting
- Setting values are secured by locking the rotary knob
- Lockable rotary knob
- Four pressure regulation ranges: 0.3 ... 4 bar, 0.3 ... 7 bar, 0.5 ... 12 bar and 0.5 ... 16 bar
- Return flow option for exhausting from output 2 to output 1
- Optional pressure sensor with display

General technical data			
Size		MS4	MS6
Pneumatic connection 1		G1/4	G1/2
Pneumatic connection 2		G1/4	G1/2
		QS-6	QS-8
		QS-8	QS-10
Design		Directly actuated diaphragm regulator with through pressure supply	
Regulating function		With primary pressure compensation	
		With/without secondary venting	
		Output pressure constant	
Type of mounting		Via accessories	
		In-line installation	
		Front panel mounting	
Assembly position		Any	
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	

Pressure regulators MS4/MS6-LRB, MS series

Technical data

FESTO

Standard nominal flow rate $q_{nN}^{1)}$ [l/min]							
Size		MS4			MS6		
		Standard	Angled outlet block		Standard	Angled outlet block	
			QS-6	QS-8		QS-8	QS-10
Pressure regulation range	D5	1,900 ²⁾	300 ²⁾	650 ²⁾	7,300 ²⁾	600 ²⁾	750 ²⁾
	D6	1,700	350	840	6,300	880	1,000
	D7	1,500	350	640	5,500	800	950
	D8	–	–	–	4,500	750	850

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					
Variant		Standard		Pressure sensor with display AD...	
Size		MS4	MS6	MS4	MS6
Input pressure [bar]		0.8 ... 14	0.8 ... 20	0.8 ... 14	0.8 ... 20
Operating medium		Compressed air		Filtered compressed air, lubricated or unlubricated, grade of filtration 40 μ m	
Ambient temperature [°C]		–10 ... +60	–10 ... +60	0 ... +50	0 ... +50
Temperature of medium [°C]		–10 ... +60	–10 ... +60	0 ... +50	0 ... +50
Storage temperature [°C]		–10 ... +60	–10 ... +60	–10 ... +60	–10 ... +60
Corrosion resistance CRC ¹⁾		2			

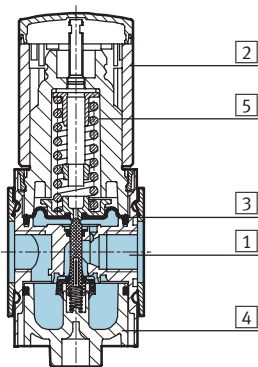
1) Corrosion resistance class 2 according to Festo standard 940 070

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		MS6
Pressure regulator		747

Materials

Sectional view



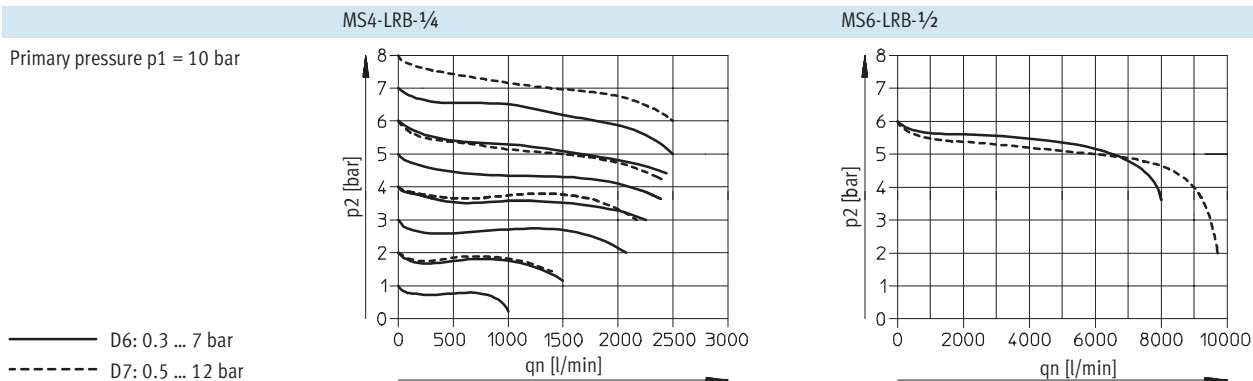
Pressure regulator (manifold assembly)		
1	Body	Die-cast aluminium
2	Regulating knob	Polyamide/polyacetate
3	Diaphragm	Nitrile rubber
4	Bottom cap	Polyester, fibreglass reinforced
5	Springs	Steel
–	Seals	Nitrile rubber
Note on materials		Free of copper and PTFE only with cover plate VS

Pressure regulators MS4/MS6-LRB, MS series

Technical data

FESTO

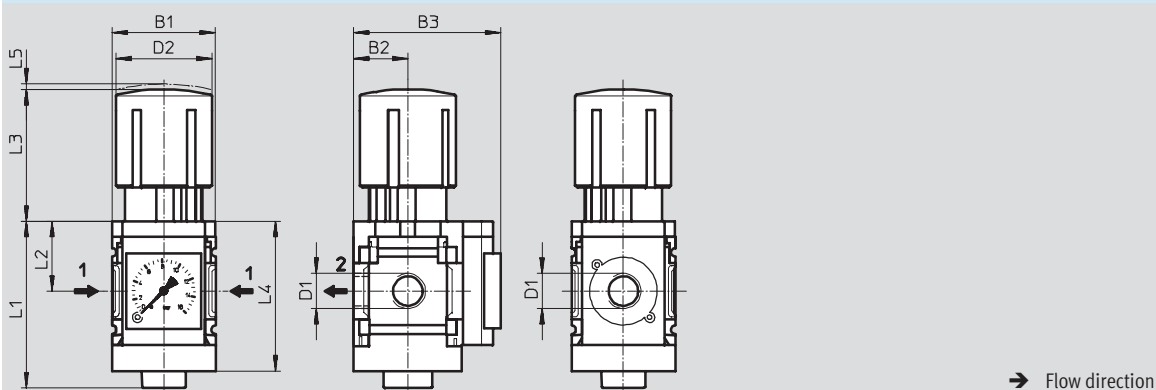
Standard flow rate q_n as a function of output pressure p_2



Dimensions – Standard

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

With pressure gauge, display unit [bar]

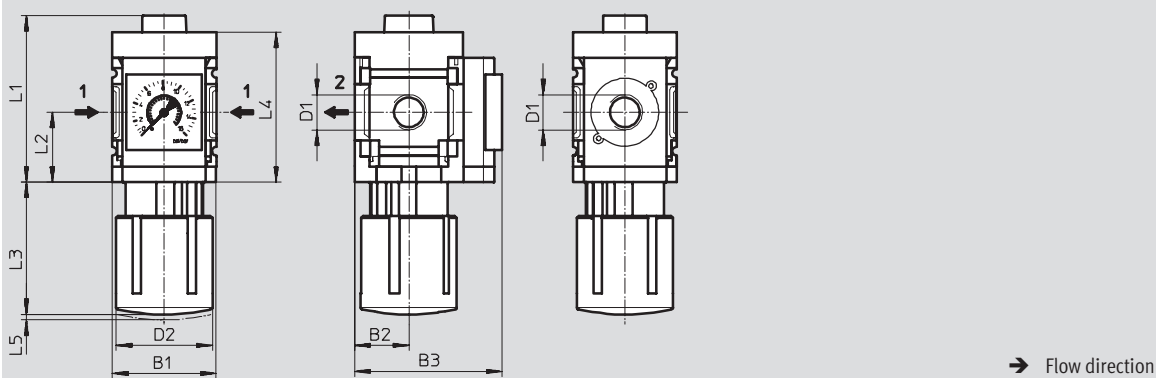


Type	B1	B2	B3	D1	D2	L1	L2	L3	L4	L5
MS4-LRB-1/4	40	21	57	G1/4	37.2	64.4	27	51.1	58	2
MS6-LRB-1/2	62	31	77	G1/2	51	93	39	86	84	5

Dimensions – Alternative mounting position

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

Rotary knob underneath KD, standard rotary knob, with pressure gauge



Type	B1	B2	B3	D1	D2	L1	L2	L3	L4	L5
MS4-LRB-1/4-...-KD	40	21	57	G1/4	37.2	64.4	27	51.1	58	2
MS6-LRB-1/2-...-KD	62	31	77	G1/2	51	93	39	86	84	5

Pressure regulators MS4/MS6-LRB, MS series

Technical data

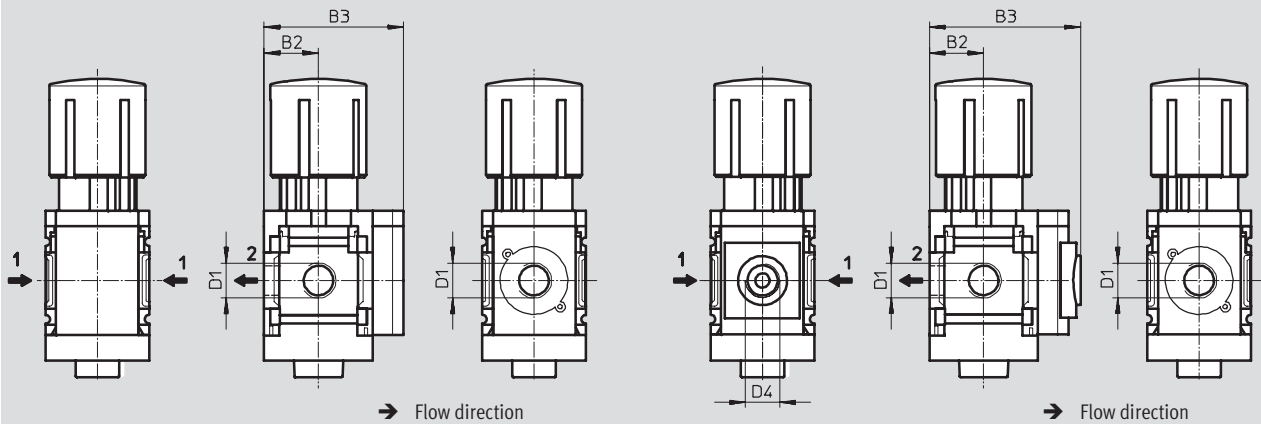
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Dimensions – Pressure gauge alternatives

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

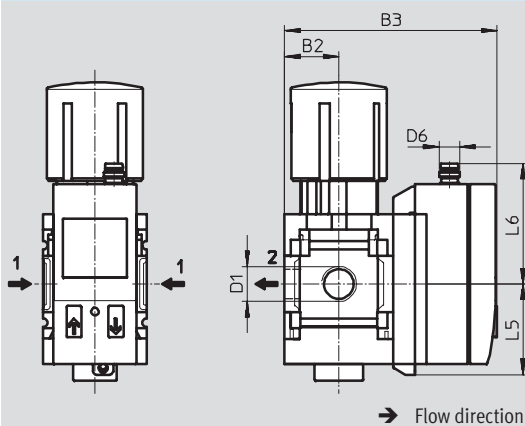
Cover plate VS

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-LRB-1/4-...-VS	21	54	G1/4	–	–	–	–
MS4-LRB-1/4-...-A8	21	58.5	G1/4	G1/8	–	–	–
MS4-LRB-1/4-...-A4	21	58.5	G1/4	G1/4	–	–	–
MS4-LRB-1/4-...-AD1/AD2	21	82.6	G1/4	–	M8x1	35.1	46.7
MS4-LRB-1/4-...-AD3/AD4	21	82.6	G1/4	–	M12x1	35.1	55.8
MS6-LRB-1/2-...-VS	31	76	G1/2	–	–	–	–
MS6-LRB-1/2-...-A4	31	78.5	G1/2	G1/4	–	–	–
MS6-LRB-1/2-...-AD1/AD2	31	103	G1/2	–	M8x1	35.1	46.7
MS6-LRB-1/2-...-AD3/AD4	31	103	G1/2	–	M12x1	35.1	55.8

Pressure regulators MS4/MS6-LRB, MS series

Technical data

FESTO

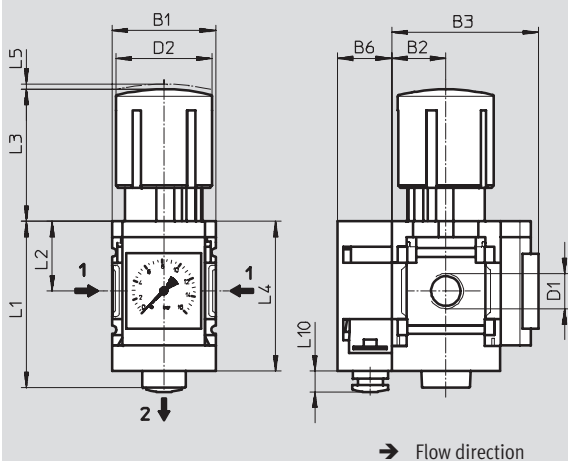
Dimensions – Angled outlet block BC/BD/BE

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

Pressure output at rear

MS4

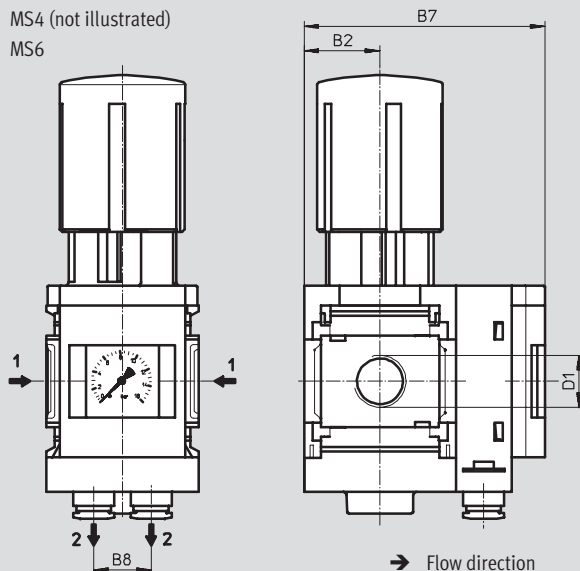
MS6 (not illustrated)



Pressure output to front Z

MS4 (not illustrated)

MS6



Type	B1	B2	B3	B6	B7	B8	D1	D2	L1	L2	L3	L4	L5	L10
MS4-LRB-1/4-...-B...	40	21	57	21	78	–	G1/4	37.2	64.4	27	51.1	58	2	8
MS6-LRB-1/2-...-B...	62	31	77	22.6	99.6	23.4	G1/2	51	93	39	86	84	5	11

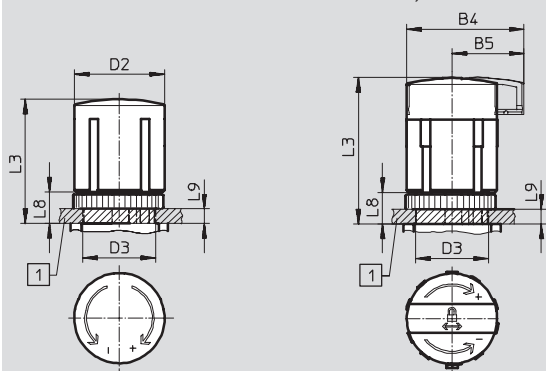
Dimensions – Rotary knob

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

For installation into control panel

Standard

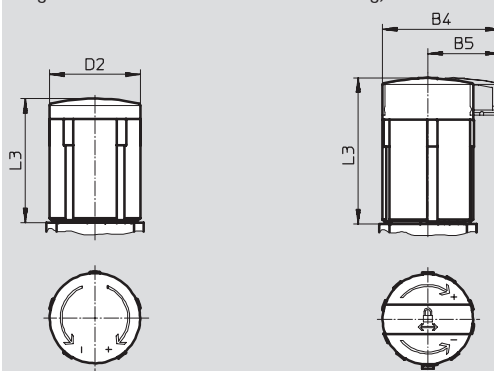
Standard, lockable AS



1 Max. control panel thickness

Long LD

Long, lockable LD-AS



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

Pressure regulators MS4/MS6-LRB, MS series

Technical data

Ordering data					
Pressure gauge, lockable standard type rotary knob					
Size	Connection	Pressure output to rear without angled outlet block		Pressure output to rear with angled outlet block QS-8	
		Part No.	Type	Part No.	Type
Pressure regulation range 0.3 ... 4 bar					
MS4	G1¼	529 473	MS4-LRB-¼-D5-AS	529 474	MS4-LRB-¼-D5-AS-BD
MS6	G1½	530 322	MS6-LRB-½-D5-AS	530 323	MS6-LRB-½-D5-AS-BD
Pressure regulation range 0.3 ... 7 bar					
MS4	G1¼	529 479	MS4-LRB-¼-D6-AS	529 480	MS4-LRB-¼-D6-AS-BD
MS6	G1½	530 328	MS6-LRB-½-D6-AS	530 329	MS6-LRB-½-D6-AS-BD
Pressure regulation range 0.5 ... 12 bar					
MS4	G1¼	529 485	MS4-LRB-¼-D7-AS	529 486	MS4-LRB-¼-D7-AS-BD
MS6	G1½	530 334	MS6-LRB-½-D7-AS	530 335	MS6-LRB-½-D7-AS-BD

Ordering data				
Adapter plate A8 for EN pressure gauge 1/8, lockable standard-type rotary knob				
Size	Connection	Pressure output to rear without angled outlet block		
		Part No.	Type	
Pressure regulation range 0.3 ... 4 bar				
MS4	G1/4	529 471	MS4-LRB-1/4-D5-A8-AS	
Pressure regulation range 0.3 ... 7 bar				
MS4	G1/4	529 477	MS4-LRB-1/4-D6-A8-AS	
Pressure regulation range 0.5 ... 12 bar				
MS4	G1/4	529 483	MS4-LRB-1/4-D7-A8-AS	

Ordering data				
Adapter plate A4 for EN pressure gauge 1/4, lockable standard-type rotary knob				
Size	Connection	Pressure output to rear without angled outlet block		
		Part No.	Type	
Pressure regulation range 0.3 ... 4 bar				
MS6	G1/2	530 320	MS6-LRB-1/2-D5-A4-AS	
Pressure regulation range 0.3 ... 7 bar				
MS6	G1/2	530 326	MS6-LRB-1/2-D6-A4-AS	
Pressure regulation range 0.5 ... 12 bar				
MS6	G1/2	530 332	MS6-LRB-1/2-D7-A4-AS	

Ordering data – Wearing parts kits			
Size	Part No.	Type	
MS4	673 649	MS4-LR/LRB	
MS6	673 650	MS6-LR/LRB	

Pressure regulators MS4/MS6-LRB, MS series

Ordering data – Modular products

FESTO

M Mandatory data						Options →
Module No.	Series	Size	Function	Connection size	Pressure regulation range	Pressure gauge alternatives
527 692 527 665	MS	4 6	LRB	1/4 1/2 AGA AGB AGC AGD AGE	D5 D6 D7 D8	VS A8 A4 AD1 AD2 AD3 AD4
Ordering example						
527 692	MS	4	- LRB	- AGC	- D5	- A4

Ordering table						
Grid dimension	[mm]	40	62	Condi- tions	Code	Enter code
M Module No.		527 692	527 665			
Series		Standard			MS	MS
Size		4	6		...	
Function		Pressure regulator for manifold assembly			-LRB	-LRB
Connection size	Thread G1/4	-			-1/4	
	-	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	
O Pressure gauge alternatives	Cover plate			1	-VS	
	Adapter plate for EN pressure gauge 1/8, without pressure gauge	-		2	-A8	
	Adapter plate for EN pressure gauge 1/4, without pressure gauge			2	-A4	
	Pressure sensor with display, plug M8, 1 switching output PNP, 3-pin			2 3	-AD1	
	Pressure sensor with display, plug M8, 1 switching output NPN, 3-pin			2 3	-AD2	
	Pressure sensor with display, plug M12, 1 switching output PNP, 4-pin, analogue output 4 ... 20 mA			2 3	-AD3	
	Pressure sensor with display, plug M12, 1 switching output NPN, 4-pin, analogue output 4 ... 20 mA			2 3	-AD4	

1 VS

Must be selected if alternative flow direction Z is selected without alternative assembly position KD and without pressure output BC, BD, BE.
Must be selected if alternative assembly position KD is selected without alternative flow direction Z and without pressure output BC, BD, BE

2 A8, A4, AD1 ... AD4

In combination with alternative flow direction Z only with alternative assembly position KD

3 AD1 ... AD4

Measuring range max. 10 bar.
Not with pressure regulation range D8

Transfer order code

	MS		- LRB		-		-	
--	----	--	-------	--	---	--	---	--

Pressure regulators MS4/MS6-LRB, MS series

Ordering data – Modular products

FESTO

→ 0 Options							
Alternative pressure gauge scale	Secondary venting	Rotary knob alternative	Alternative assembly position	Security	Pressure output	Type of mounting	Alternative flow direction
PSI MPA	OS	LD	KD	AS	BC BD BE	WR WP WPM WPB WB WBM	Z
-	- OS	- LD	-	- AS	- BC	- WP	-

Ordering table							
Grid dimension [mm]		40	62	Condi- tions	Code	Enter code	
↓ 0	Alternative pressure gauge scale	psi		4	-PSI		
		MPa		4	-MPA		
	Secondary venting	Without secondary venting			-OS		
	Rotary knob alternative	Long rotary knob			-LD		
	Alternative assembly position	Rotary knob, underneath		5	-KD		
	Security	Lockable rotary knob			-AS		
	Pressure output (p _{max} = 10 bar)	Angled outlet block QS-6	-		-BC		
		Angled outlet block QS-8	Angled outlet block QS-8		-BD		
		-	Angled outlet block QS-10		-BE		
	Type of mounting	Mounting bracket with knurled nut for regulator head		6 7	-WR		
		Mounting bracket		8 9	-WP		
		Mounting bracket		6 8	-WPM		
		Mounting bracket for large wall gap		8 10	-WPB		
		Mounting bracket		6	-WB		
		Mounting bracket	-	6	-WBM		
	Alternative flow direction	Pressure output at front (for manometer connection an angled outlet block is required)			-Z		

- 4 **PSI, MPA** Not with pressure gauge alternatives VS, A8, A4, AD1, AD2, AD3, AD4.
Not with alternative assembly position KD.
In combination with alternative flow direction Z only with pressure output BC, BD, BE
- 5 **KD** Not with alternative pressure gauge scale PSI, MPA.
Not with mounting type WP, WPB.
In combination with mounting type WR, WPM, WB, WBM not with alternative flow direction Z.
In combination with pressure gauge alternatives A8, A4, AD1, AD2, AD3, AD4 only with alternative flow direction Z

- 6 **WR, WPM, WB, WBM** In combination with alternative flow direction Z not with alternative assembly position KD
- 7 **WP** Only with alternative flow direction Z.
Not with rotary knob alternative LD
- 8 **WP, WPM, WPB** Only with connecting plate AGA, AGB, AGC, AGD, AGE
- 9 **WP** Only with alternative flow direction Z and/or only with pressure output BC, BD, BE
- 10 **WPB** Not with alternative flow direction Z.
Not with pressure output BC, BD, BE

Transfer order code

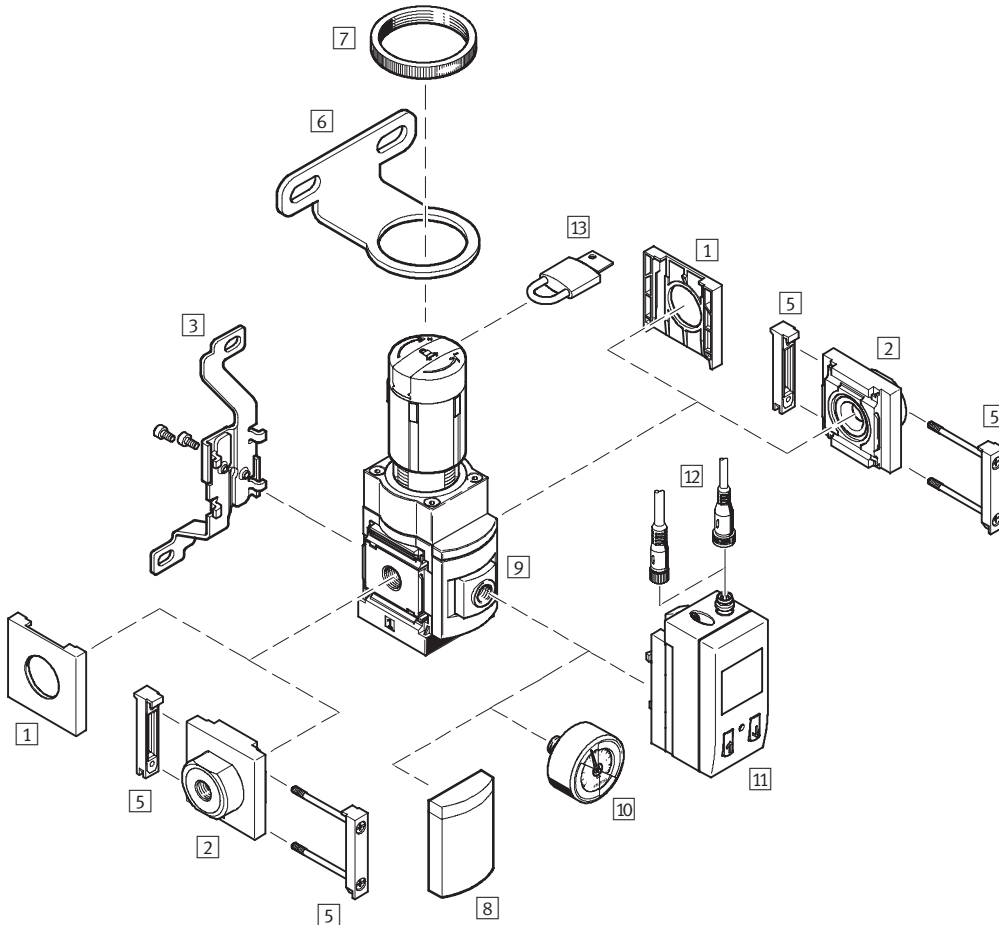
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Precision pressure regulators MS6-LRP/LRPB, MS series

Peripherals overview

FESTO

Precision pressure regulator LRP



Precision pressure regulators MS6-LRP/LRPB, MS series

Peripherals overview

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Mounting attachments and accessories – LRP						
		Individual unit		Combination → 3/2.11-0		→ Page
		without connect- ing plate	with connecting plate	without connect- ing plate	with connecting plate	
1	Cover cap MS6-END	■	–	■	–	11-3
2	Connecting plate MS6-AG...	–	■	–	■	11-2
3	Mounting bracket MS6-WB	■	■	–	–	11-4
5	Module connector MS6-MV	–	■	■	■	11-9
6	Regulator wall bracket MS6-WR	■	■	–	–	11-5
7	Knurled nut (included in scope of delivery) MS-LR	■	■	–	–	–
8	Cover plate VS	■	■	■	■	5-36
9	Adapter for EN pressure gauge 1/8/1/4 A8/A4	■	■	■	■	5-36
10	Precision pressure gauge A8M/MAP	■	■	■	■	5-36 11-10
11	Pressure sensor SDE1-...-MS AD1 ... AD4	■	■	■	■	5-36
12	Plug socket with cable SIM-M8-3.../SIM-M12-4...	■	■	■	■	11-10
13	Padlock LRVS-D	■	■	■	■	11-11
–	Mounting bracket MS6-WP/WPB/WPM	–	■	■	■	11-7, 11-8

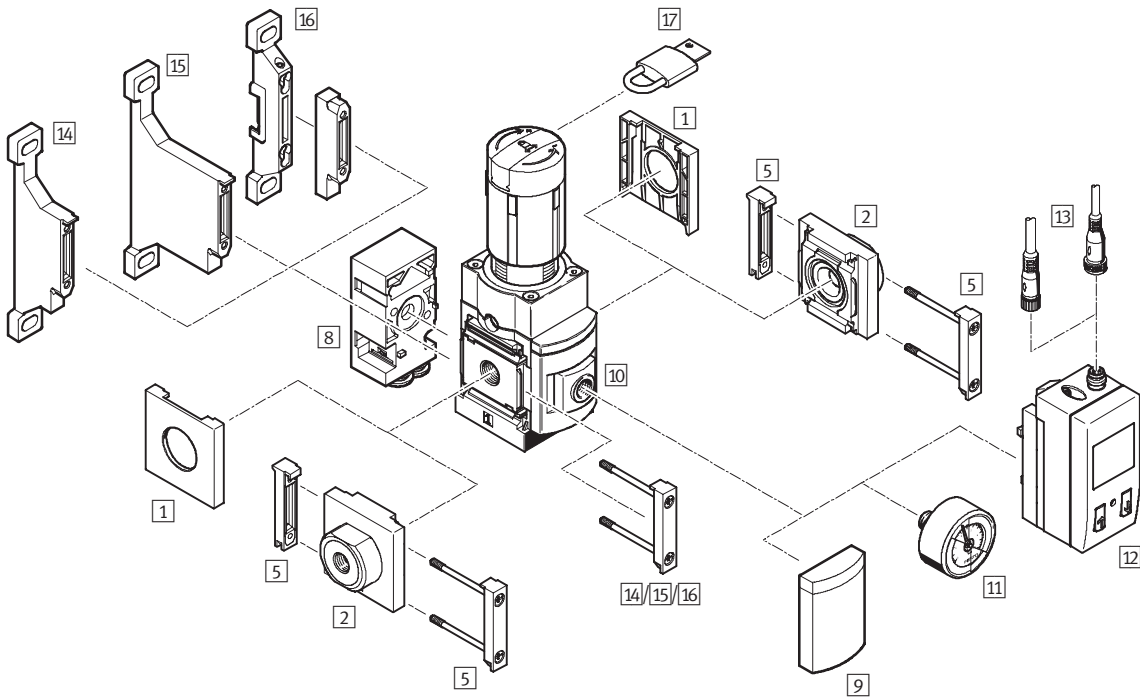
Precision pressure regulators MS6-LRP/LRPB, MS series

Peripherals overview

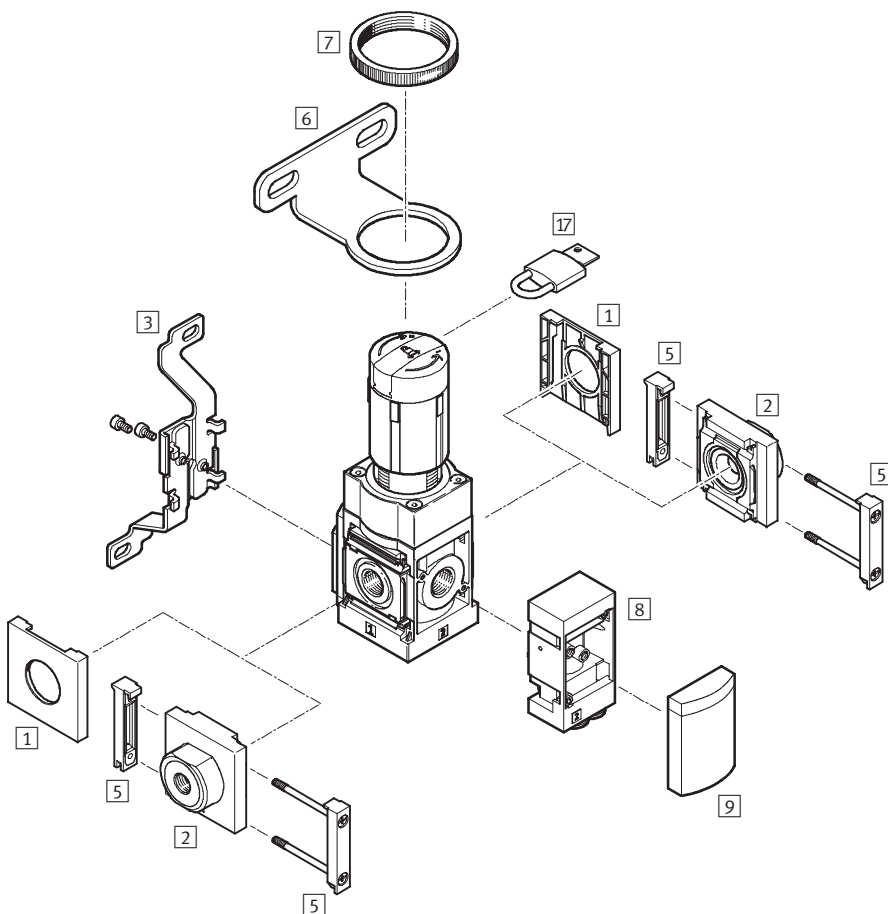
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Precision pressure regulator LRPB

Pressure output at rear



Pressure output to front Z



Precision pressure regulators MS6-LRP/LRPB, MS series

Peripherals overview

FESTO

Mounting attachments and accessories – LRPB						
		Individual unit		Combination → 3/2.11-0		→ Page
		without connect- ing plate	with connecting plate	without connect- ing plate	with connecting plate	
1	Cover cap MS6-END	■	–	■	–	11-3
2	Connecting plate MS6-AG...	–	■	–	■	11-2
3	Mounting bracket MS6-WB	■	■	–	–	11-4
5	Module connector MS6-MV	–	■	■	■	11-9
6	Regulator wall bracket MS6-WR	■	■	–	–	11-5
7	Knurled nut (included in scope of delivery) MS-LR	■	■	–	–	–
8	Angled outlet block B...	■	■	■	■	5-44
9	Cover plate VS	■	■	■	■	5-44
10	Adapter for EN pressure gauge 1/8/1/4 A8/A4	■	■	■	■	5-44
11	Precision pressure gauge A8M/MAP	■	■	■	■	5-44 11-10
12	Pressure sensor SDE1-...-MS AD1 ... AD4	■	■	■	■	5-44
13	Plug socket with cable SIM-M8-3.../SIM-M12-4...	■	■	■	■	11-10
14	Mounting bracket MS6-WP	–	■	■	■	11-7
15	Mounting bracket MS6-WPB	–	■	■	■	11-7
16	Mounting bracket MS6-WPM	–	■	■	■	11-8
17	Padlock LRVS-D	■	■	■	■	11-11

Precision pressure regulators MS6-LRP/LRPB, MS series

Type codes

FESTO

		MS	6	-	LRPB	-	1/2	-	D7	-	A8	-	BD
Series													
MS	Standard service unit												
Size													
6	Grid dimension 62 mm												
Service function													
LRP	Precision pressure regulator												
LRPB	Precision pressure regulator for manifold assembly												
Connection size													
1/4	Thread G1/4												
3/8	Thread G3/8												
1/2	Thread G1/2												
Pressure regulation range													
D2	0.05 ... 0.7 bar												
D4	0.05 ... 2.5 bar												
D5	0.1 ... 4 bar												
D7	0.1 ... 12 bar												
Pressure gauge alternatives													
A8	Adapter plate for EN pressure gauge 1/8, without pressure gauge												
Pressure output (LRPB only)													
	Without angled outlet block												
BD	Angled outlet block QS-8												
BE	Angled outlet block QS-10												

Further variants can be ordered using the modular system

Precision pressure regulators LRP	→ 5-36
Precision pressure regulators LRPB	→ 5-44

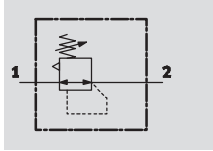
- Connecting plates
- Pressure gauge alternatives
- Rotary knob alternative
- Alternative assembly position
- Security
- Type of mounting
- Alternative flow direction

Precision pressure regulators MS6-LRP, MS series

Technical data

FESTO

Function



-  - Flow rate
800 ... 5,000 l/min
-  - Temperature range
-10 ... +60 °C
-  - Input pressure
1 ... 14 bar
-  - [www.festo.com/en/
Spare_parts_service](http://www.festo.com/en/Spare_parts_service)



The precision pressure regulator is suitable for sensitive applications with a required pressure hysteresis of 0.02 bar.

- Good control characteristics with low hysteresis and primary pressure compensation
- High flow rate with minimal pressure drop
- Setting values are secured by locking the rotary knob
- Lockable rotary knob (optional)
- Four pressure regulation ranges: 0.05 ... 0.7 bar, 0.05 ... 2.5 bar, 0.1 ... 4 bar and 0.1 ... 12 bar
- Optional pressure sensor with display

General technical data				
Size		MS6		
Pneumatic connection 1, 2		G $\frac{1}{4}$	G $\frac{3}{8}$	G $\frac{1}{2}$
Pneumatic connection 3		G $\frac{1}{4}$		
Constructional design		Pilot actuated precision diaphragm regulator		
Regulating function		Via secondary venting		
		Output pressure constant		
Type of mounting		Via accessories		
		In-line installation		
		Front panel mounting		
Installation position		Any		
Actuator lock		Rotary knob with detent		
		Lockable with accessories		
Pressure regulation range	D2 [bar]	0.05 ... 0.7		
	D4 [bar]	0.05 ... 2.5		
	D5 [bar]	0.1 ... 4		
	D7 [bar]	0.1 ... 12 (0.1 ... 10 with pressure sensor variant AD...)		
Max. hysteresis [bar]		0.02		
Pressure display		Via pressure sensor for displaying output pressure and electrical output		
		Via precision pressure gauge for displaying output pressure		
		G $\frac{1}{8}$ prepared		
		G $\frac{1}{4}$ prepared		
Flow rate of secondary venting [l/min]		≥ 220 with pressure regulation range D2		
		≥ 450 with pressure regulation range D4		
		≥ 650 with pressure regulation range D5		
		≥ 900 with pressure regulation range D7		

Precision pressure regulators MS6-LRP, MS series

Technical data

FESTO

Standard nominal flow rate qnN [l/min]				
Pneumatic connection		G1/4	G3/8	G1/2
Pressure regulation range	D2	800 ¹⁾	1,100 ¹⁾	1,600 ¹⁾
	D4	1,100 ²⁾	1,400 ²⁾	2,300 ²⁾
	D5	1,400 ³⁾	1,700 ³⁾	3,000 ³⁾
	D7	3,000 ⁴⁾	3,300 ⁴⁾	5,000 ⁴⁾

- 1) Measured at p1 = 10 bar and p2 = 0.5 bar, Δp = 0.1 bar
 2) Measured at p1 = 10 bar and p2 = 1.5 bar, Δp = 0.1 bar
 3) Measured at p1 = 10 bar and p2 = 2.5 bar, Δp = 0.1 bar
 4) Measured at p1 = 10 bar and p2 = 6.0 bar, Δp = 0.1 bar

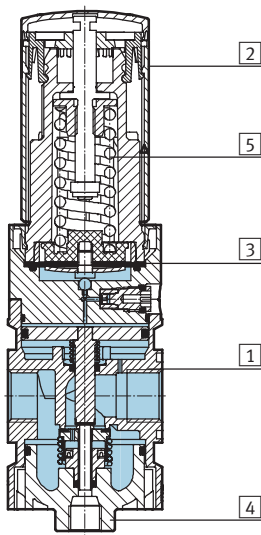
Operating and environmental conditions		
Variant		Pressure sensor with display AD...
Input pressure	[bar]	1 ... 14
Operating medium	Compressed air, filtered, unlubricated, grade of filtration 40 μm	
Ambient temperature	[°C]	–10 ... +60
Temperature of medium	[°C]	0 ... +50
Storage temperature	[°C]	–10 ... +60
Corrosion resistance class	CRC ¹⁾	2

- 1) Corrosion resistance class 2 to Festo standard 940 070
 Components subject to moderate corrosion stress. 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.

Weight [g]	
Precision pressure regulator	1,000

Materials

Sectional view



Precision pressure regulator		
1	Housing	Die-cast aluminium
2	Regulating knob	Polyamide/polyacetate
3	Diaphragm	Nitrile rubber
4	Cap, bottom	Polyester, fibreglass reinforced
5	Springs	Steel
–	Seals	Nitrile rubber
Note on materials		Free of copper and PTFE (not with variants A8M or AD...)

Precision pressure regulators MS6-LRP, MS series

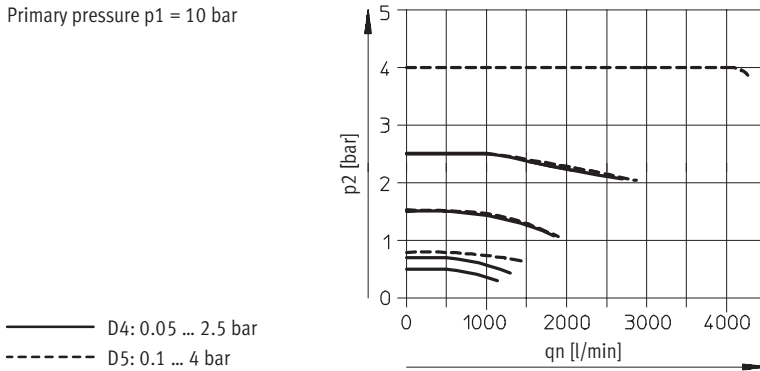
Technical data

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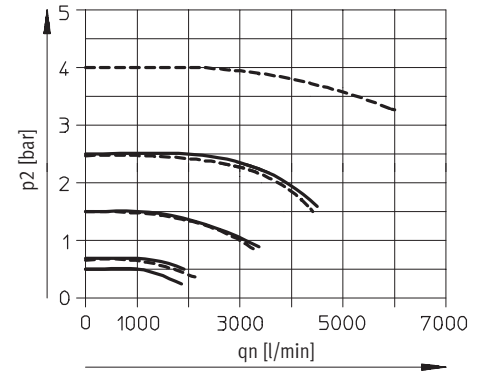
Standard flow rate q_n as a function of output pressure p_2

MS6-LRP-1/4

Primary pressure $p_1 = 10$ bar

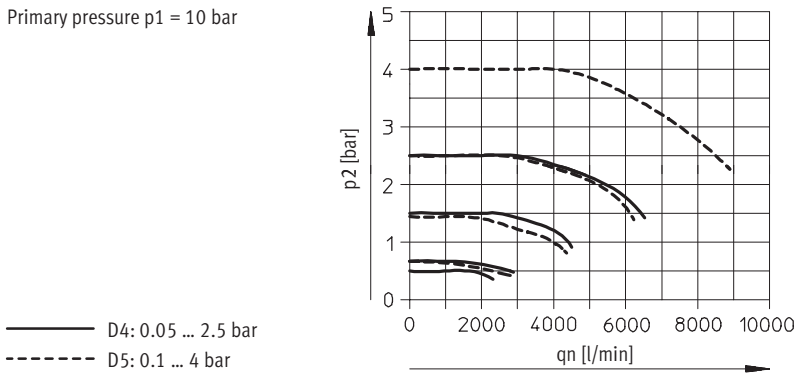


MS6-LRP-3/8



MS6-LRP-1/2

Primary pressure $p_1 = 10$ bar



Precision pressure regulators MS6-LRP, MS series

Technical data

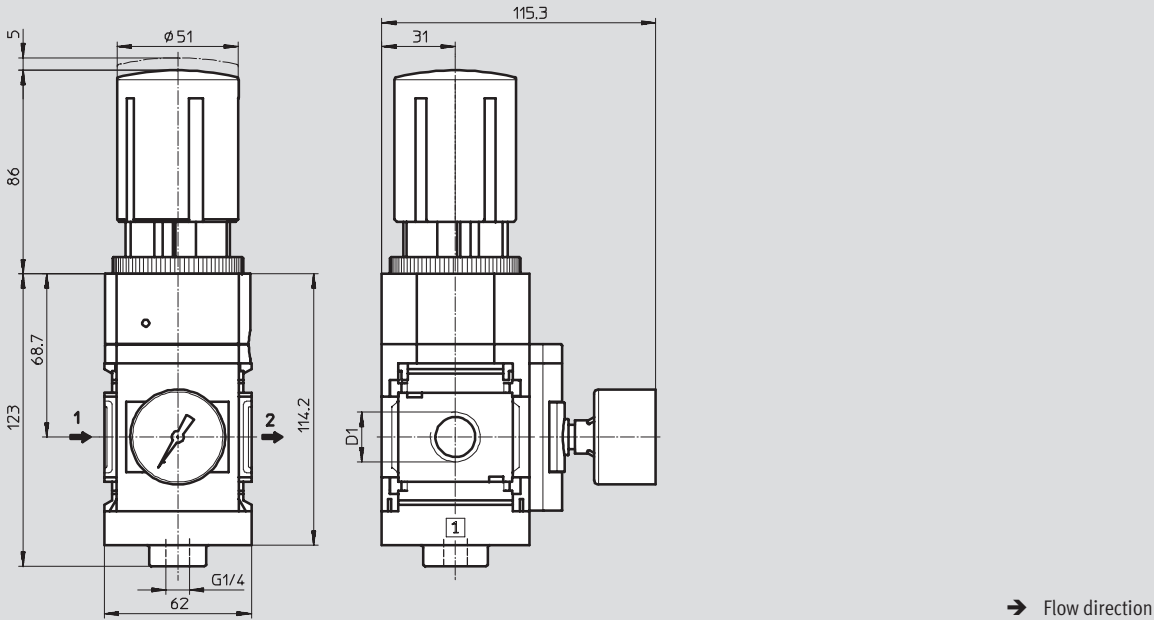
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Dimensions

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

Adapter plate A8M for EN pressure gauge 1/8, with precision pressure gauge

Technical data MAP → www.festo.com

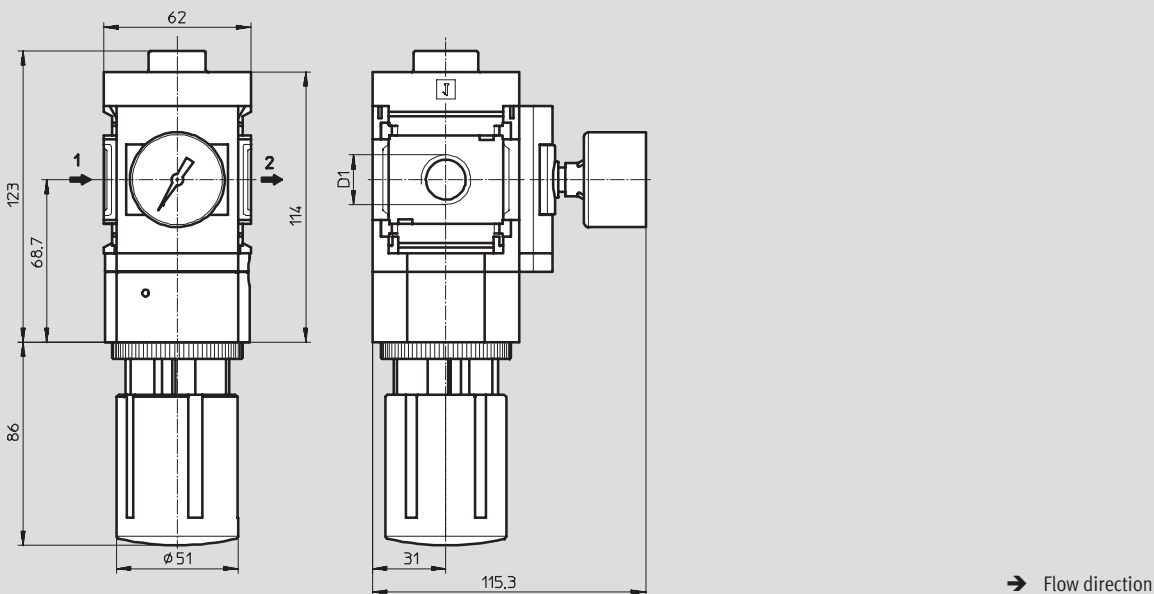


Type	D1
MS6-LRP-1/4-...-A8M	G1/4
MS6-LRP-3/8-...-A8M	G3/8
MS6-LRP-1/2-...-A8M	G1/2

Dimensions – Alternative assembly position

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

Rotary knob at bottom KD



Type	D1
MS6-LRP-1/4-...-KD	G1/4
MS6-LRP-3/8-...-KD	G3/8
MS6-LRP-1/2-...-KD	G1/2

Precision pressure regulators MS6-LRP, MS series

Technical data

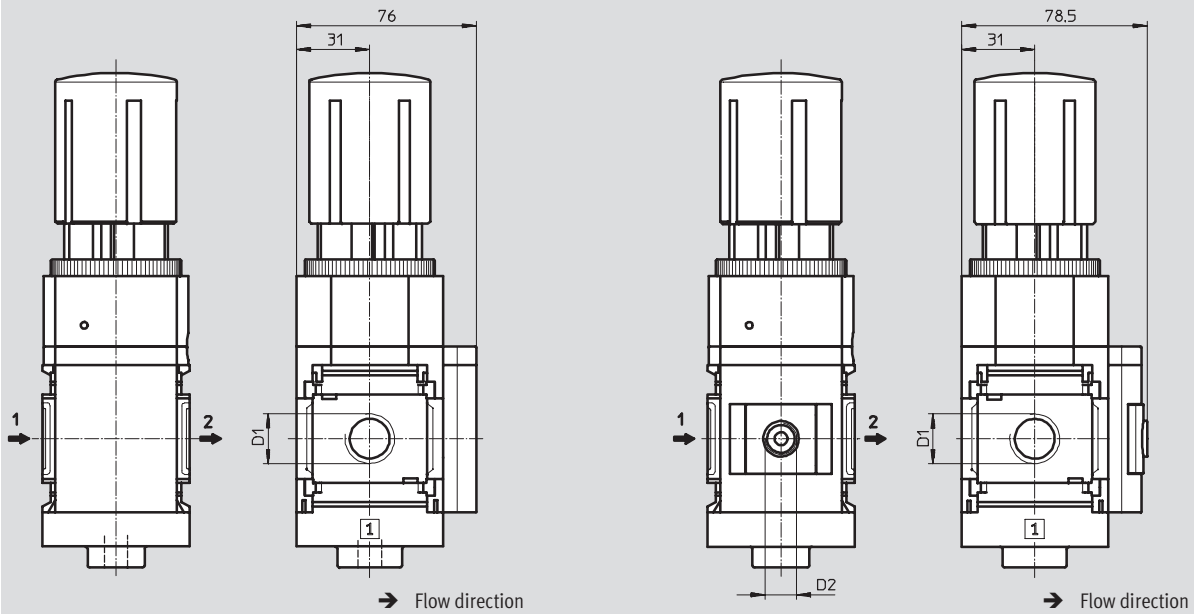
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Dimensions – Pressure gauge alternatives

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

Cover plate VS

Adapter plate A8/A4 for EN pressure gauge $\frac{1}{8}/\frac{1}{4}$, without pressure gauge



Type	D1	D2
MS6-LRP- $\frac{1}{4}$ -...-VS	G $\frac{1}{4}$	-
MS6-LRP- $\frac{3}{8}$ -...-VS	G $\frac{3}{8}$	
MS6-LRP- $\frac{1}{2}$ -...-VS	G $\frac{1}{2}$	
MS6-LRP- $\frac{1}{4}$ -...-A8	G $\frac{1}{4}$	G $\frac{1}{8}$
MS6-LRP- $\frac{3}{8}$ -...-A8	G $\frac{3}{8}$	
MS6-LRP- $\frac{1}{2}$ -...-A8	G $\frac{1}{2}$	
MS6-LRP- $\frac{1}{4}$ -...-A4	G $\frac{1}{4}$	G $\frac{1}{4}$
MS6-LRP- $\frac{3}{8}$ -...-A4	G $\frac{3}{8}$	
MS6-LRP- $\frac{1}{2}$ -...-A4	G $\frac{1}{2}$	

Precision pressure regulators MS6-LRP, MS series

Technical data

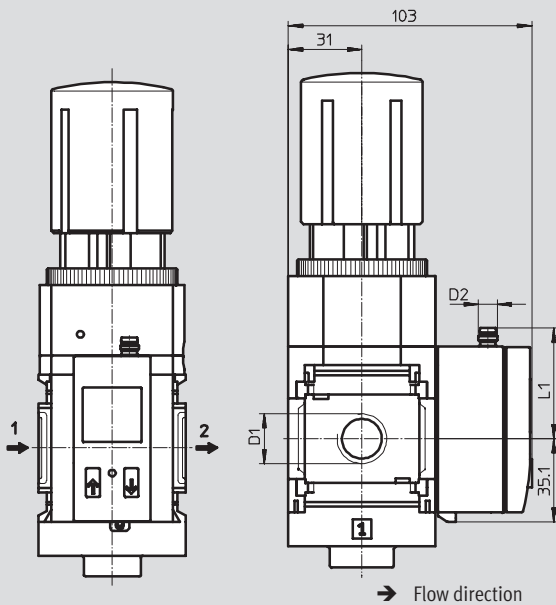
FESTO

Dimensions – Pressure gauge alternatives

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

Pressure sensor with display AD1 ... AD4

Technical data SDE1 → www.festo.com



Variant AD1:
SDE1-D10-G2-MS-L-P1-M8 with
3-pin plug M8x1, 1 switch output
PNP.

Variant AD2:
SDE1-D10-G2-MS-L-N1-M8 with
3-pin plug M8x1, 1 switch output
NPN.

Variant AD3:
SDE1-D10-G2-MS-L-PI-M12 with
4-pin plug M12x1, 1 switch output
PNP and 4 ... 20 mA analogue.

Variant AD4:
SDE1-D10-G2-MS-L-NI-M12 with
4-pin plug M12x1, 1 switch output
NPN and 4 ... 20 mA analogue.

Type	D1	D2	L1
MS6-LRP-1/4-...-AD1/AD2	G1/4	M8x1	46.7
MS6-LRP-3/8-...-AD1/AD2	G3/8		
MS6-LRP-1/2-...-AD1/AD2	G1/2		
MS6-LRP-1/4-...-AD3/AD4	G1/4	M12x1	55.8
MS6-LRP-3/8-...-AD3/AD4	G3/8		
MS6-LRP-1/2-...-AD3/AD4	G1/2		

Dimensions – Rotary knob

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

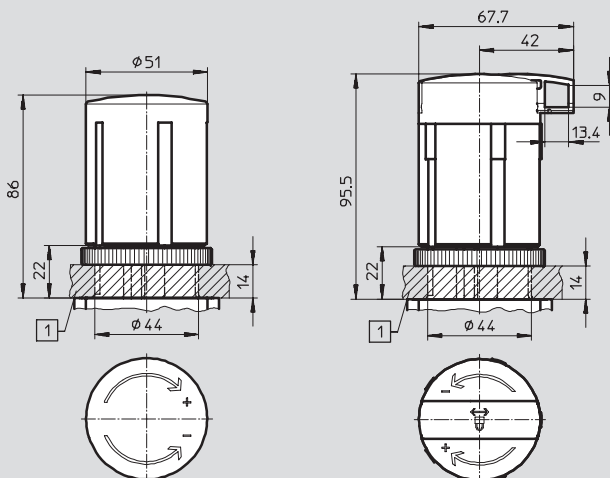
For installation into control panel

Standard

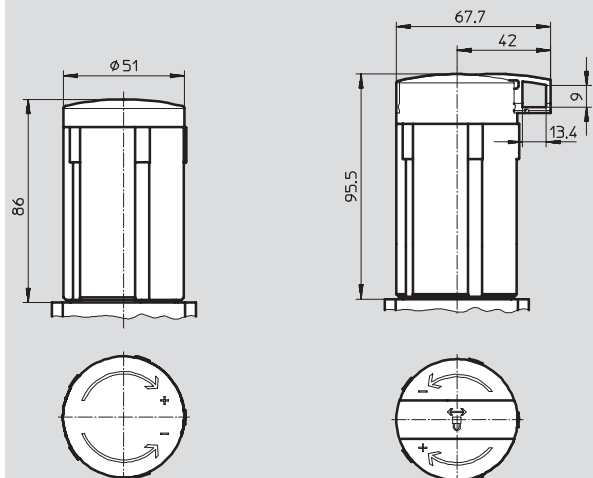
Standard, lockable AS

Long LD

Long, lockable LD-AS



1 Max. control panel thickness



Precision pressure regulators MS6-LRP, MS series

Technical data

Ordering data			
Adapter plate for EN pressure gauge 1/8, standard rotary knob			
Size	Connection	Part No.	Type
Pressure regulation range 0.05 ... 0.7 bar			
MS6	G1/4	538 004	MS6-LRP-1/4-D2-A8 ¹⁾
	G3/8	538 012	MS6-LRP-3/8-D2-A8 ¹⁾
	G1/2	538 020	MS6-LRP-1/2-D2-A8 ¹⁾
Pressure regulation range 0.05 ... 2.5 bar			
MS6	G1/4	538 006	MS6-LRP-1/4-D4-A8 ¹⁾
	G3/8	538 014	MS6-LRP-3/8-D4-A8 ¹⁾
	G1/2	538 022	MS6-LRP-1/2-D4-A8 ¹⁾
Pressure regulation range 0.1 ... 4 bar			
MS6	G1/4	538 008	MS6-LRP-1/4-D5-A8 ¹⁾
	G3/8	538 016	MS6-LRP-3/8-D5-A8 ¹⁾
	G1/2	538 024	MS6-LRP-1/2-D5-A8 ¹⁾
Pressure regulation range 0.1 ... 12 bar			
MS6	G1/4	538 010	MS6-LRP-1/4-D7-A8 ¹⁾
	G3/8	538 018	MS6-LRP-3/8-D7-A8 ¹⁾
	G1/2	538 026	MS6-LRP-1/2-D7-A8 ¹⁾

1) Free of copper and PTFE

Precision pressure regulators MS6-LRP, MS series

Ordering data – Modular products

FESTO

[M] Mandatory data							→
Module No.	Series	Size	Function	Connection size	Pressure regulation range	Pressure gauge alternatives	
538 028	MS	6	LRP	1/4, 3/8, 1/2, AGB, AGC, AGD, AGE	D2 D4 D5 D7	VS A8 A8M A4 AD1 AD2 AD3 AD4	
Ordering example							
538 028	MS	6	- LRP	- 1/2	- D4	- A4	

Ordering table						
Grid dimension	[mm]	62		Condi- tions	Code	Enter code
[M] Module No.	538 028					
Series	Standard				MS	MS
Size	6				6	6
Function	Precision pressure regulator				-LRP	-LRP
Connection size	Thread G1/4				-1/4	
	Thread G3/8				-3/8	
	Thread G1/2				-1/2	
	Connecting plate G1/4				-AGB	
	Connecting plate G3/8				-AGC	
	Connecting plate G1/2				-AGD	
	Connecting plate G3/4				-AGE	
Pressure regulation range	0.05 ... 0.7 bar				-D2	
	0.05 ... 2.5 bar				-D4	
	0.1 ... 4 bar				-D5	
	0.1 ... 12 bar				-D7	
Pressure gauge alternatives	Cover plate				-VS	
	Adapter plate for EN pressure gauge 1/8, without pressure gauge				-A8	
	Adapter plate for EN pressure gauge 1/8, with precision pressure gauge				-A8M	
	Adapter plate for EN pressure gauge 1/4, without pressure gauge				-A4	
	Pressure sensor with display, plug M8, 1 switch output PNP, 3-pin			1	-AD1	
	Pressure sensor with display, plug M8, 1 switch output NPN, 3-pin			1	-AD2	
	Pressure sensor with display, plug M12, 1 switch output PNP, 4-pin, analogue output 4 ... 20 mA			1	-AD3	
	Pressure sensor with display, plug M12, 1 switch output NPN, 4-pin, analogue output 4 ... 20 mA			1	-AD4	

1 AD1 ... AD4 Measuring range max. 10 bar

Transfer order code

538 028	MS	6	- LRP				
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Precision pressure regulators MS6-LRP, MS series

Ordering data – Modular products

FESTO

→ 0 Options

Rotary knob alternative	Alternative assembly position	Security	Type of mounting	Alternative flow direction
LD	KD	AS	WR WP WPM WB	Z
- LD	-	- AS	- WB	- Z

Ordering table					
Grid dimension	[mm]	62	Condi- tions	Code	Enter code
0 Rotary knob alternative	Long rotary knob			-LD	
Alternative assembly position	Rotary knob at bottom		2	-KD	
Security	Lockable rotary knob			-AS	
Type of mounting	Wall mounting bracket with knurled nut for regulator head		3	-WR	
	Wall mounting plate		4	-WP	
	Wall mounting plate		4	-WPM	
	Wall mounting bracket			-WB	
Alternative flow direction	Flow direction from right to left (without pressure output, no pressure gauge)			-Z	

2 **KD** Not with mounting type WP

3 **WR** Not with long rotary knob LD

4 **WP, WPM** Only with connecting plate AGB, AGC, AGD or AGE

Transfer order code

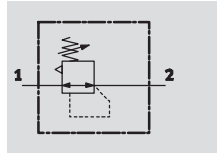
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Precision pressure regulators MS6-LRPB, MS series

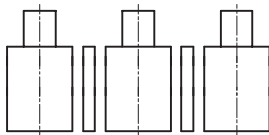
Technical data

FESTO

Function



LRPB combination
with through pressure supply for
manifold assembly



-  - Flow rate
1,600 ... 5,000 l/min
-  - Temperature range
-10 ... +60 °C
-  - Input pressure
1 ... 14 bar
-  - [www.festo.com/en/
Spare_parts_service](http://www.festo.com/en/Spare_parts_service)

The precision pressure regulator is suitable for sensitive applications with a required pressure hysteresis of 0.02 bar.

The pressure regulator is suitable for manifold assemblies with through air supply on both sides, for configuring a regulator manifold with separate, independent pressure regulation ranges. Pressure output is at the front or rear.



- Good control characteristics with low hysteresis and primary pressure compensation
- Manifold assembly with through air supply
- For configuring a regulator manifold with separate, independent pressure regulation ranges
- Setting values are secured by locking the rotary knob
- Lockable rotary knob (optional)
- Four pressure regulation ranges: 0.05 ... 0.7 bar, 0.05 ... 2.5 bar, 0.1 ... 4 bar and 0.1 ... 12 bar
- Optional pressure sensor with display

General technical data			MS6
Size			MS6
Pneumatic connection 1, 2			G½
Pneumatic connection 3			G¼
			QS-8
			QS-10
Constructional design			Pilot actuated precision diaphragm regulator with through pressure supply
Regulating function			Via secondary venting
			Output pressure constant
Type of mounting			Via accessories
			In-line installation
			Front panel mounting
Installation position			Any
Actuator lock			Rotary knob with detent
			Lockable with accessories
Pressure regulation range	D2 [bar]		0.05 ... 0.7
	D4 [bar]		0.05 ... 2.5
	D5 [bar]		0.1 ... 4
	D7 [bar]		0.1 ... 12 (0.1 ... 10 with pressure sensor variant AD...)
Max. hysteresis [bar]			0.02
Pressure display			Via pressure sensor for displaying output pressure and electrical output
			Via pressure gauge for displaying output pressure
			G⅜ prepared
			G¾ prepared
Flow rate of secondary venting [l/min]			≥ 220 with pressure regulation range D2
			≥ 450 with pressure regulation range D4
			≥ 650 with pressure regulation range D5
			≥ 900 with pressure regulation range D7

Precision pressure regulators MS6-LRPB, MS series

Technical data

FESTO

Standard nominal flow rate q _N [l/min]		
Pressure regulation range	D2	1,600 ¹⁾
	D4	2,300 ²⁾
	D5	3,000 ³⁾
	D7	5,000 ⁴⁾

1) Measured at p₁ = 10 bar and p₂ = 0.5 bar, Δp = 0.1 bar

2) Measured at p₁ = 10 bar and p₂ = 1.5 bar, Δp = 0.1 bar

3) Measured at p₁ = 10 bar and p₂ = 2.5 bar, Δp = 0.1 bar

4) Measured at p₁ = 10 bar and p₂ = 6.0 bar, Δp = 0.1 bar

Operating and environmental conditions		
Variant	Standard	Pressure sensor with display AD...
Input pressure [bar]	1 ... 14	1 ... 14
Operating medium	Compressed air, filtered, unlubricated, grade of filtration 40 μm	
Ambient temperature [°C]	-10 ... +60	0 ... +50
Temperature of medium [°C]	-10 ... +60	0 ... +50
Storage temperature [°C]	-10 ... +60	-10 ... +60
Corrosion resistance class CRC ¹⁾	2	

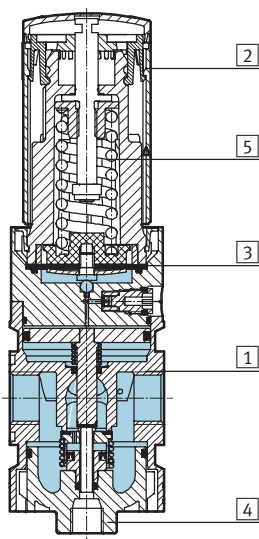
1) Corrosion resistance class 2 to Festo standard 940 070

Components subject to moderate corrosion stress. 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.

Weight [g]	
Precision pressure regulator	1,000

Materials

Sectional view



Precision pressure regulator (manifold assembly)		
1	Housing	Die-cast aluminium
2	Regulating knob	Polyamide/polyacetate
3	Diaphragm	Nitrile rubber
4	Cap, bottom	Polyester, fibreglass reinforced
5	Springs	Steel
–	Seals	Nitrile rubber
Note on materials		Free of copper and PTFE (not with variants A8M or AD...)

Precision pressure regulators MS6-LRPB, MS series

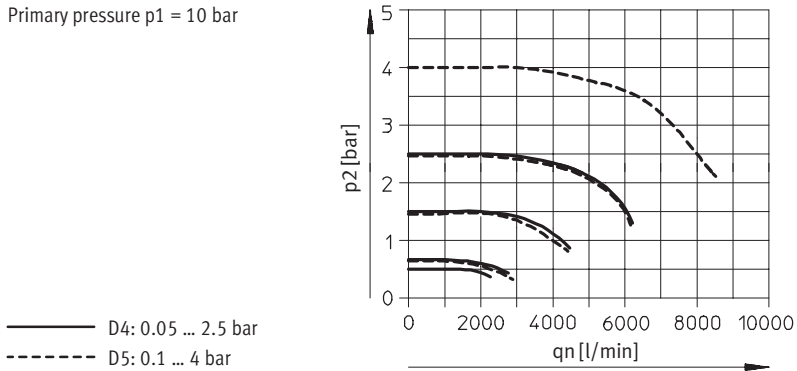
Technical data

FESTO

Standard flow rate q_n as a function of output pressure p_2

MS6-LRPB-1/2

Primary pressure $p_1 = 10$ bar

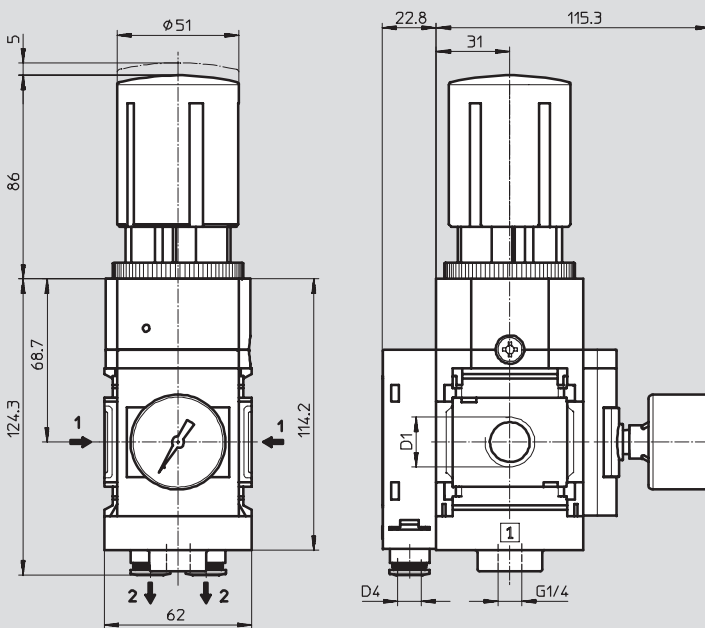


Dimensions

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

Adapter plate A8M for EN pressure gauge 1/8, with precision pressure gauge, angled outlet block BD/BE

Technical data MAP → www.festo.com



→ Flow direction

Type	D1	D4
MS6-LRPB-1/2 ...-A8M-BD	G1/2	QS-8
MS6-LRPB-1/2 ...-A8M-BE		QS-10

Precision pressure regulators MS6-LRPB, MS series

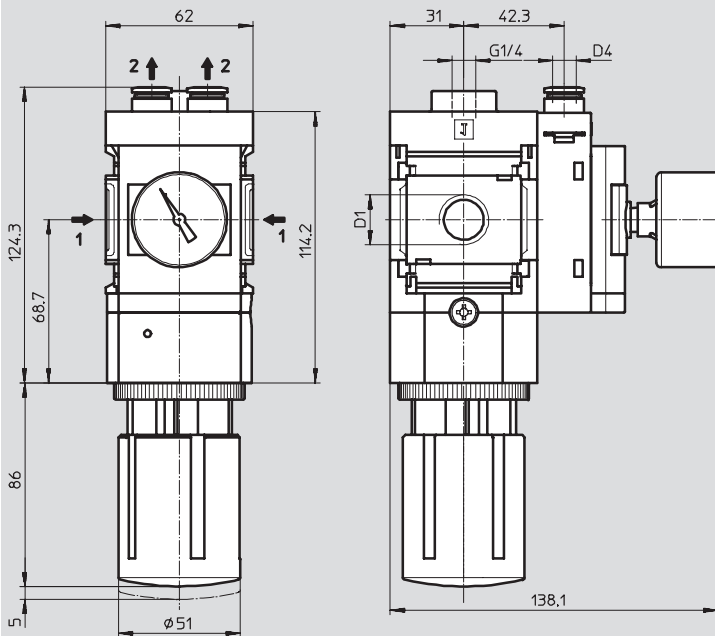
Technical data

FESTO

Dimensions – Alternative assembly position

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

Rotary knob at bottom KD, angled outlet block BD/BE



→ Flow direction

Type	D1	D4
MS6-LRPB-1/2-...-KD-BD	G1/2	QS-8
MS6-LRPB-1/2-...-KD-BE		QS-10

MS series service units
Pressure regulators

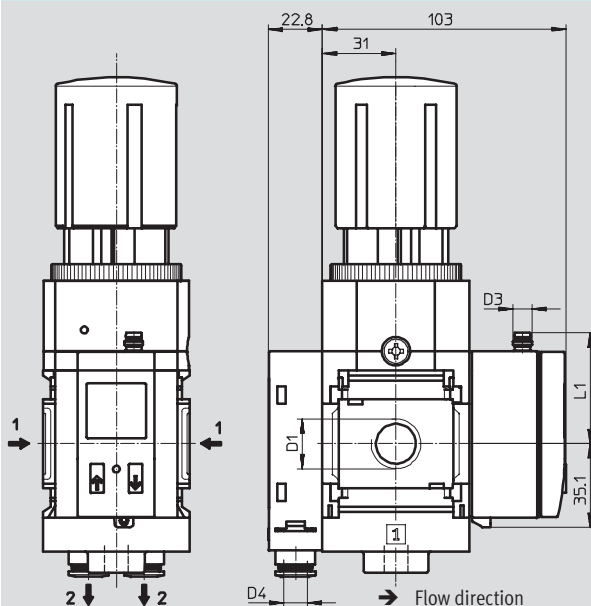
5

Dimensions – Pressure gauge alternatives

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

Pressure sensor with display AD1 ... AD4, angled outlet block BD/BE

Technical data SDE1 → www.festo.com



Variant AD1:
SDE1-D10-G2-MS-L-P1-M8 with
3-pin plug M8x1, 1 switch output
PNP.

Variant AD3:
SDE1-D10-G2-MS-L-PI-M12 with
4-pin plug M12x1, 1 switch output
PNP and 4 ... 20 mA analogue.

Variant AD2:
SDE1-D10-G2-MS-L-N1-M8 with
3-pin plug M8x1, 1 switch output
NPN.

Variant AD4:
SDE1-D10-G2-MS-L-NI-M12 with
4-pin plug M12x1, 1 switch output
NPN and 4 ... 20 mA analogue.

Type	D1	D3	D4	L1
MS6-LRPB-1/2-...-AD1/AD2-BD	G1/2	M8x1	QS-8	46.7
MS6-LRPB-1/2-...-AD1/AD2-BE			QS-10	
MS6-LRPB-1/2-...-AD3/AD4-BD	G1/2	M12x1	QS-8	55.8
MS6-LRPB-1/2-...-AD3/AD4-BE			QS-10	

Precision pressure regulators MS6-LRPB, MS series

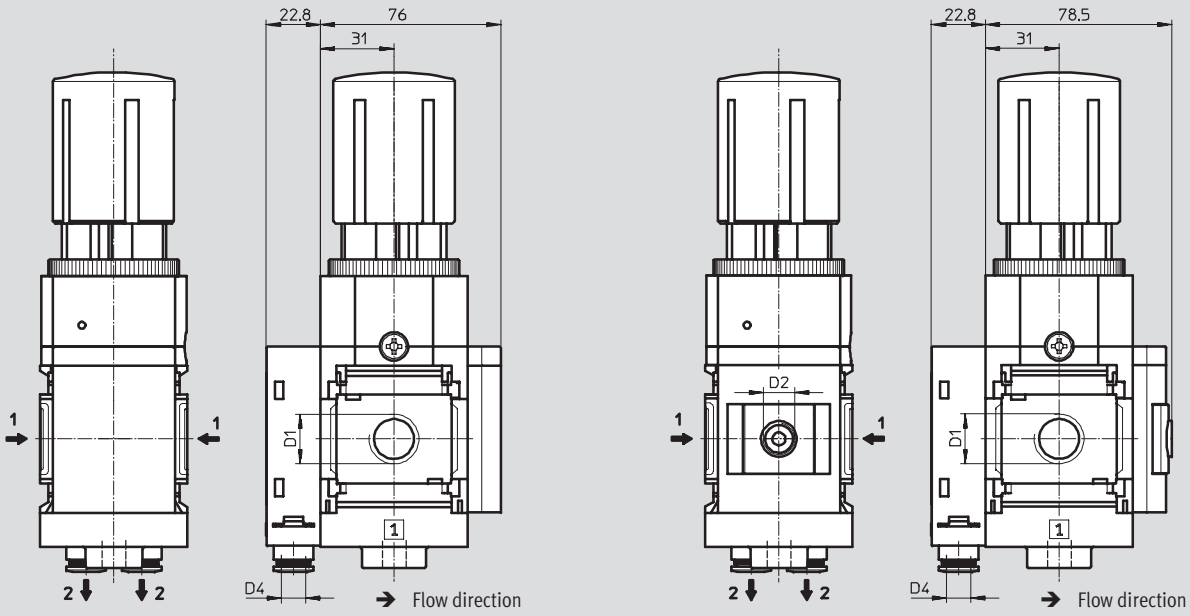
Technical data

Dimensions – Pressure gauge alternatives

Cover plate VS, angled outlet block BD/BE

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

Adapter plate A8/A4 for EN pressure gauge 1/8/1/4, without pressure gauge,
angled outlet block BD/BE

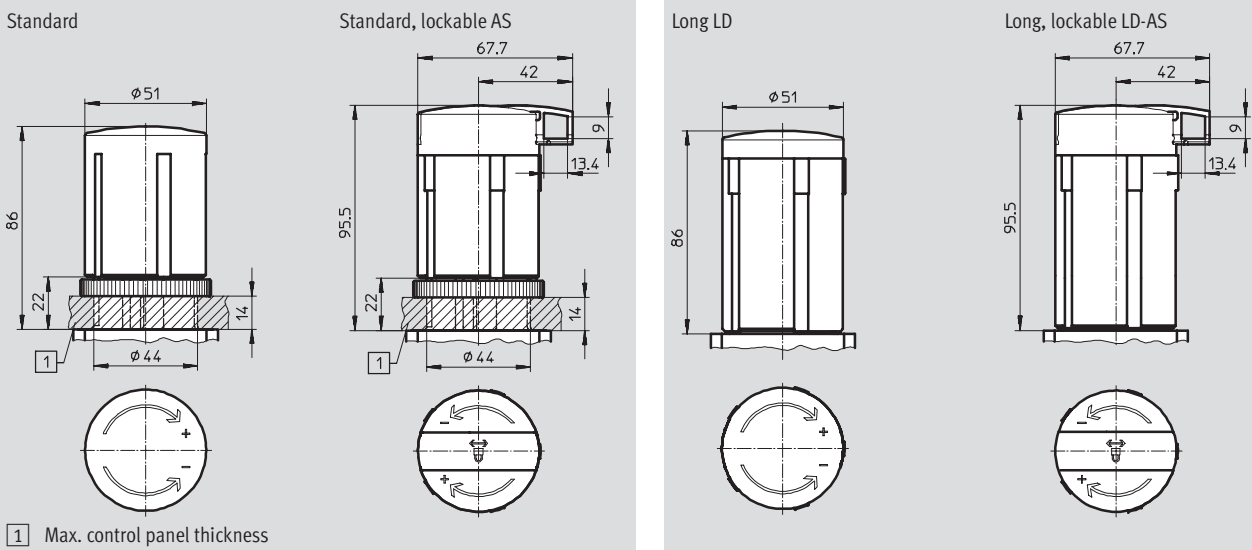


Type	D1	D2	D4
MS6-LRPB-1/2-...-VS-BD	G $\frac{1}{2}$	-	QS-8
MS6-LRPB-1/2-...-VS-BE			QS-10
MS6-LRPB-1/2-...-A8-BD	G $\frac{1}{2}$	G $\frac{1}{8}$	QS-8
MS6-LRPB-1/2-...-A8-BE			QS-10
MS6-LRPB-1/2-...-A4-BD	G $\frac{1}{2}$	G $\frac{1}{4}$	QS-8
MS6-LRPB-1/2-...-A4-BE			QS-10

Dimensions – Rotary knob

For installation into control panel

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



Precision pressure regulators MS6-LRPB, MS series

Technical data

FESTO

Ordering data			
Adapter plate A8 for EN pressure gauge 1/8, standard rotary knob			
Size	Connection	Pressure output to rear without angled outlet block	
		Part No.	Type
Pressure regulation range 0.05 ... 0.7 bar			
MS6	G1/2	534 911	MS6-LRPB-1/2-D2-A8 ¹⁾
Pressure regulation range 0.05 ... 2.5 bar			
MS6	G1/2	534 914	MS6-LRPB-1/2-D4-A8 ¹⁾
Pressure regulation range 0.1 ... 4 bar			
MS6	G1/2	534 917	MS6-LRPB-1/2-D5-A8 ¹⁾
Pressure regulation range 0.1 ... 12 bar			
MS6	G1/2	534 920	MS6-LRPB-1/2-D7-A8 ¹⁾

1) Free of copper and PTFE

Ordering data			
Adapter plate A8 for EN pressure gauge 1/8, standard rotary knob			
Size	Connection	Pressure output to rear with angled outlet block QS-8	Pressure output to rear with angled outlet block QS-10
		Part No.	Type
		Part No.	Type
Pressure regulation range 0.05 ... 0.7 bar			
MS6	G1/2	534 865	MS6-LRPB-1/2-D2-A8-BD ¹⁾
		534 913	MS6-LRPB-1/2-D2-A8-BE ¹⁾
Pressure regulation range 0.05 ... 2.5 bar			
MS6	G1/2	534 868	MS6-LRPB-1/2-D4-A8-BD ¹⁾
		534 916	MS6-LRPB-1/2-D4-A8-BE ¹⁾
Pressure regulation range 0.1 ... 4 bar			
MS6	G1/2	534 871	MS6-LRPB-1/2-D5-A8-BD ¹⁾
		534 919	MS6-LRPB-1/2-D5-A8-BE ¹⁾
Pressure regulation range 0.1 ... 12 bar			
MS6	G1/2	534 874	MS6-LRPB-1/2-D7-A8-BD ¹⁾
		534 922	MS6-LRPB-1/2-D7-A8-BE ¹⁾

1) Free of copper and PTFE

Precision pressure regulators MS6-LRPB, MS series

Ordering data – Modular products

FESTO

Mandatory data						
Module No.	Series	Size	Function	Connection size	Pressure regulation range	Pressure gauge alternatives
535 007	MS	6	LRPB	1/2, AGB, AGC, AGD, AGE	D2 D4 D5 D7	VS A8 A8M A4 AD1 AD2 AD3 AD4
Ordering example						
535 007	MS	6	- LRPB	- AGD	- D5	- VS

Ordering table						
Grid dimension	[mm]	62	Condi- tions	Code	Enter code	
M Module No.	535 007					
Series	Standard			MS		MS
Size	6			6		6
Function	Precision pressure regulator for manifold assembly			-LRPB		-LRPB
Connection size	Thread G1/2			-1/2		
	Connecting plate G1/4			-AGB		
	Connecting plate G3/8			-AGC		
	Connecting plate G1/2			-AGD		
	Connecting plate G3/4			-AGE		
Pressure regulation range	0.05 ... 0.7 bar			-D2		
	0.05 ... 2.5 bar			-D4		
	0.1 ... 4 bar			-D5		
	0.1 ... 12 bar			-D7		
Pressure gauge alternatives	Cover plate		1	-VS		
	Adapter plate for EN pressure gauge 1/8, without pressure gauge		2	-A8		
	Adapter plate for EN pressure gauge 1/8, with precision pressure gauge		2	-A8M		
	Adapter plate for EN pressure gauge 1/4, without pressure gauge		2	-A4		
	Pressure sensor with display, plug M8, 1 switch output PNP, 3-pin		2 3	-AD1		
	Pressure sensor with display, plug M8, 1 switch output NPN, 3-pin		2 3	-AD2		
	Pressure sensor with display, plug M12, 1 switch output PNP, 4-pin, analogue output 4 ... 20 mA		2 3	-AD3		
	Pressure sensor with display, plug M12, 1 switch output NPN, 4-pin, analogue output 4 ... 20 mA		2 3	-AD4		

- 1 VS** Must be selected with alternative flow direction Z without alternative assembly position KD or without alternative pressure output BD, BE
Must be selected with alternative assembly position KD without alternative flow direction Z or without alternative pressure output BD, BE

- 2 A8, A8M, A4, AD1 ... AD4** In combination with alternative flow direction Z only with alternative assembly position KD

- 3 AD1 ... AD4** Measuring range max. 10 bar

Transfer order code

535 007	MS	6	-	LRPB	-		-		-	
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Precision pressure regulators MS6-LRPB, MS series

Ordering data – Modular products

FESTO

Options					
Rotary knob alternative	Alternative assembly position	Security	Alternative pressure output	Type of mounting	Alternative flow direction
LD	KD	AS	BD BE	WR WP WPM WPB WB	Z
- LD	-	- AS	- BE	- WB	- Z

Ordering table					
Grid dimension	[mm]	62	Condi- tions	Code	Enter code
0 Rotary knob alternative	Long rotary knob			-LD	
Alternative assembly position	Rotary knob at bottom	4		-KD	
Security	Lockable rotary knob			-AS	
Alternative pressure output	Angled outlet block QS-8			-BD	
	Angled outlet block QS-10			-BE	
Type of mounting	Wall mounting bracket with knurled nut for regulator head	5 6		-WR	
	Wall mounting plate	7 8		-WP	
	Wall mounting plate	5 7		-WPM	
	Wall mounting plate for large wall gap	7 9		-WPB	
	Wall mounting bracket	5		-WB	
Alternative flow direction	Pressure output to front (without pressure output, no pressure gauge)			-Z	

- | | |
|---|---|
| <p>4 KD In combination with pressure gauge alternatives A8, A4, AD1, AD2, AD3, AD4 only with alternative flow direction Z</p> <p>5 WPM, WB Either only with alternative flow direction Z or only with alternative assembly position KD</p> <p>6 WR Only with alternative flow direction Z
Not with long rotary knob LD
Not with alternative assembly position KD</p> | <p>7 WP, WPM, WPB Only with connecting plate AGB, AGC, AGD or AGE</p> <p>8 WP Not with alternative assembly position KD
Either only with alternative flow direction Z or only with alternative pressure output BD, BE</p> <p>9 WPB Not with alternative assembly position KD
Not with alternative pressure output BD, BE
Not with alternative flow direction Z</p> |
|---|---|

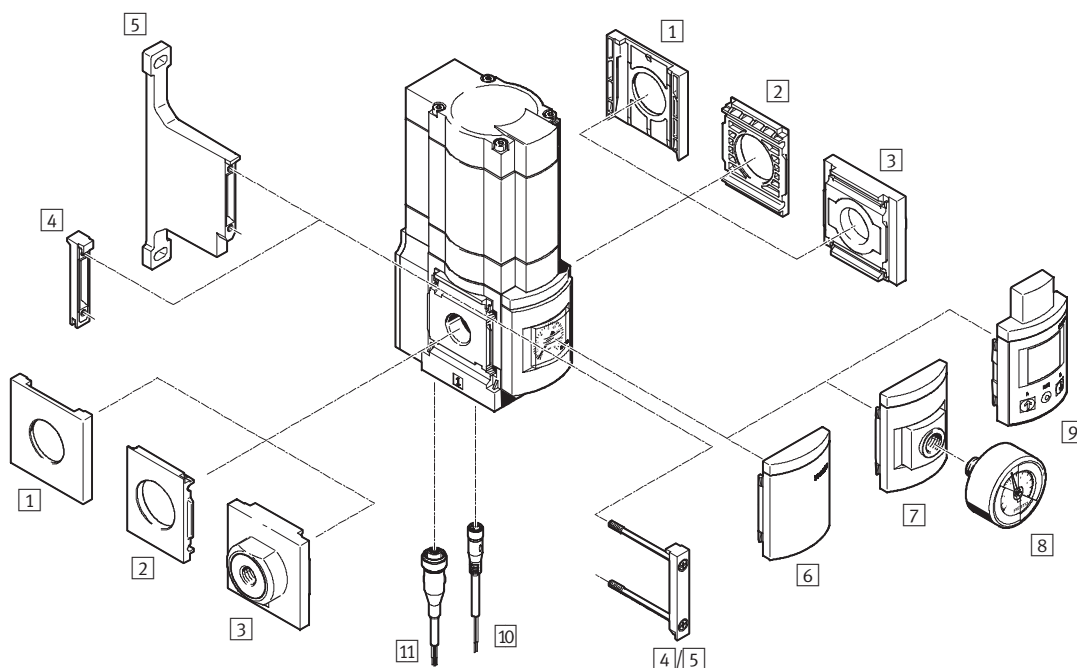
Transfer order code

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Electrical pressure regulators MS6-LRE, MS series

Peripherals overview

FESTO



Mounting attachments and accessories						
		Individual unit		Combination → 3/2.11-0		→ Page
		Without connect- ing plate	With connecting plate	Without connect- ing plate	With connecting plate	
1	Cover cap MS6-END	–	–	■	–	11-3
2	Mounting plate MS6-AEND	■ ¹⁾	–	■ ²⁾	–	11-3
3	Connecting plate MS6-AG...	–	■ ¹⁾	–	■ ²⁾	11-2
4	Module connector MS6-MV	–	–	■	■	11-9
5	Mounting bracket MS6-WPB	■	■	■	■	11-7
6	Cover plate VS	■	■	■	■	5-54
7	Adapter plate for EN pressure gauge 1/4 A4	■	■	■	■	5-54
8	Pressure gauge MA	■	■	■	■	11-10
9	Control unit with display OP	■	■	■	■	5-54
10	Plug socket with cable SIM-M8-3...	■	■	■	■	11-10
11	Plug socket with cable SIM-M12-5...	■	■	■	■	11-10

1) Mounting bracket MS6-WPB is required for mounting.

2) Module connector MS6-MV or mounting bracket MS6-WPB is required for mounting.

Electrical pressure regulators MS6-LRE, MS series

Type codes

FESTO

		MS	6	-	LRE	-	1/2	-	D7	-	PI
Series											
MS	Standard service unit										
Size											
6	Grid dimension 62 mm										
Service function											
LRE	Electrical pressure regulator										
Pneumatic connection											
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										
Electrically controlled pressure output (integrated pressure sensor with electrical output)											
	None										
PI	Plug, M8, 3-pin, I out										
PU	Plug, M8, 3-pin, V out										

Further variants can be ordered using the modular system

Electrical pressure regulator LRE → 5-54

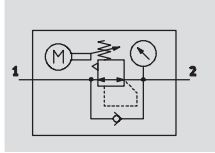
- Connecting plates
- Pressure regulation range
- Pressure gauge alternatives
- Alternative pressure gauge scale
- Secondary venting
- Sensor cables
- Supply cables
- Type of mounting
- Alternative flow direction

Electrical pressure regulators MS6-LRE, MS series

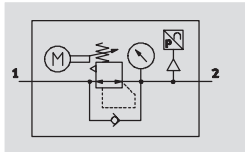
Technical data

FESTO

Function
with pressure gauge



with pressure gauge and integrated
pressure sensor



 Note

The electrical pressure regulator is not suitable for the set-up of closed control loops.

-  Flow rate
2,200 ... 7,500 l/min
-  Temperature range
0 ... +50 °C
-  Input pressure
0.8 ... 20 bar



The electrical pressure regulator maintains incoming compressed air at the set output pressure. It also maintains a constant output pressure independent of pressure fluctuations and air consumption.

The output pressure is set indirectly via an integrated electrical drive unit. The drive unit can be operated either with digital inputs via the M12 plug or

using the optional control and display unit.

The direction of rotation of the drive unit is thus pre-set, which makes adjustment of the output pressure in the rising or falling direction possible.

In the event of a power failure, the last drive unit or output pressure setting is saved. Pneumatic pressure regulation continues to function.

- Four pressure regulation ranges: 0.3 ... 4 bar, 0.3 ... 7 bar, 0.5 ... 12 bar and 0.5 ... 16 bar
- Optional control unit with display
- Optional integrated pressure sensor with electrical output
- Constant output pressure even in the event of a power failure thanks to the fail-safe function
- Available with or without secondary venting

General technical data			
Size		MS6	
Pneumatic connection 1, 2		G $\frac{1}{4}$	G $\frac{3}{8}$ G $\frac{1}{2}$
Design		Electrically adjustable pressure regulator	
Regulating function		With primary pressure compensation	
		With/without secondary venting	
		Output pressure constant	
Type of mounting		Via accessories	
		In-line installation	
Assembly position		Any, preferably vertical	
Pressure regulation range	D5 [bar]	0.3 ... 4	
	D6 [bar]	0.3 ... 7	
	D7 [bar]	0.5 ... 12	
	D8 [bar]	0.5 ... 16	
Max. hysteresis	[bar]	0.25	
Pressure indicator		With pressure gauge	
		With control unit	

Electrical pressure regulators MS6-LRE, MS series

Technical data

Standard nominal flow rate $q_{nN}^{1)}$ [l/min]				
Pneumatic connection		G1/4	G3/8	G1/2
Pressure regulation range	D5	2,400 ²⁾	5,500 ²⁾	7,500 ²⁾
	D6	3,000	5,800	6,500
	D7	2,700	4,500	5,500
	D8	2,200	4,000	4,500

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

Electrical data				
		Without integrated pressure sensor	With integrated pressure sensor	
			PI (I out)	PU (V out)
Analogue output	[V]	–	–	0 ... 10
	[mA]	–	4 ... 20	–
Analogue outputs, absolute accuracy at 25 °C	[%]	–	±3	±3
Cable interface	Inputs	Plug M12x1, 5-pin		
	Outputs	–	Plug M8x1, 3-pin	
Design of inputs		To IEC 61131-2, no electrical isolation		
Nominal operating voltage	[V DC]	24		
Permissible voltage fluctuations	[%]	±10		
Current consumption at 24 V DC	[A]	Max. 3.5		
Current consumption at nominal operating voltage	[A]	Max. 1		
Duration of actuation at 25°C	[s]	Max. 90 ¹⁾		
Protection against short circuit		For all electrical connections		
Protection class		IP65		

1) In order to prevent the drive from overheating, a control/pause ratio of 1:3 must be observed.

Operating and environmental conditions		
Supply pressure	[bar]	0.8 ... 20
Operating medium	Compressed air, air quality class 5.4 – to DIN ISO 8573-1	
Ambient temperature	[°C]	0 ... +50
Temperature of medium	[°C]	0 ... +50
Storage temperature	[°C]	0 ... +50
Corrosion resistance	CRC ¹⁾	2
CE symbol (declaration of conformance)	In accordance with EU EMC Directive	

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]	
Electrical pressure regulator	1,280

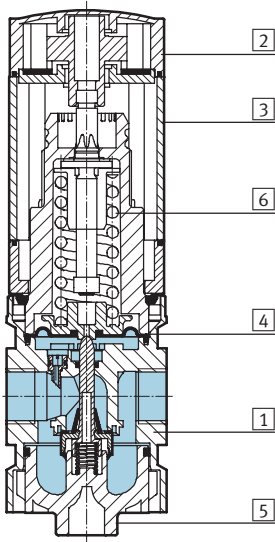
Electrical pressure regulators MS6-LRE, MS series

Technical data

FESTO

Materials

Sectional view



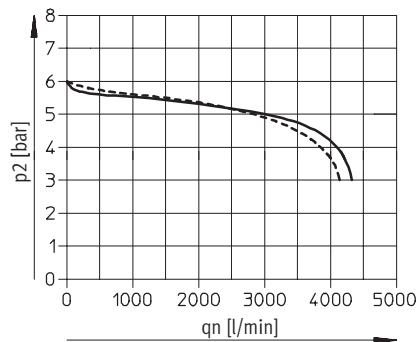
Electrical pressure regulator

1	Body	Die-cast aluminium
2	Drive housing	Reinforced polyamide
3	Profile housing	Wrought aluminium alloy
4	Diaphragm	Nitrile rubber
5	Bottom cap	Polyester, fibreglass reinforced
6	Springs	Steel
-	Display and control unit	Polyamide
-	Seals	Nitrile rubber

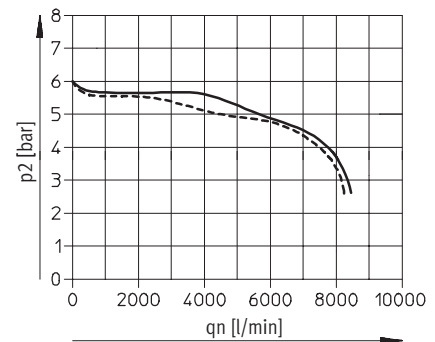
Standard flow rate q_n as a function of output pressure p_2

MS6-LRE-1/4

Primary pressure $p_1 = 10$ bar

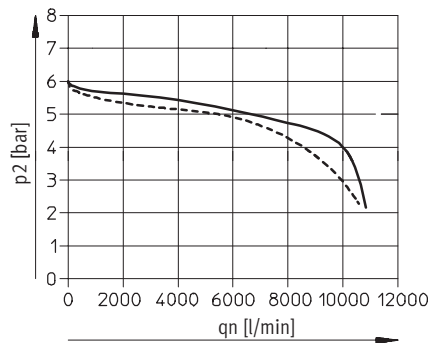


MS6-LRE-3/8



MS6-LRE-1/2

Primary pressure $p_1 = 10$ bar



Electrical pressure regulators MS6-LRE, MS series

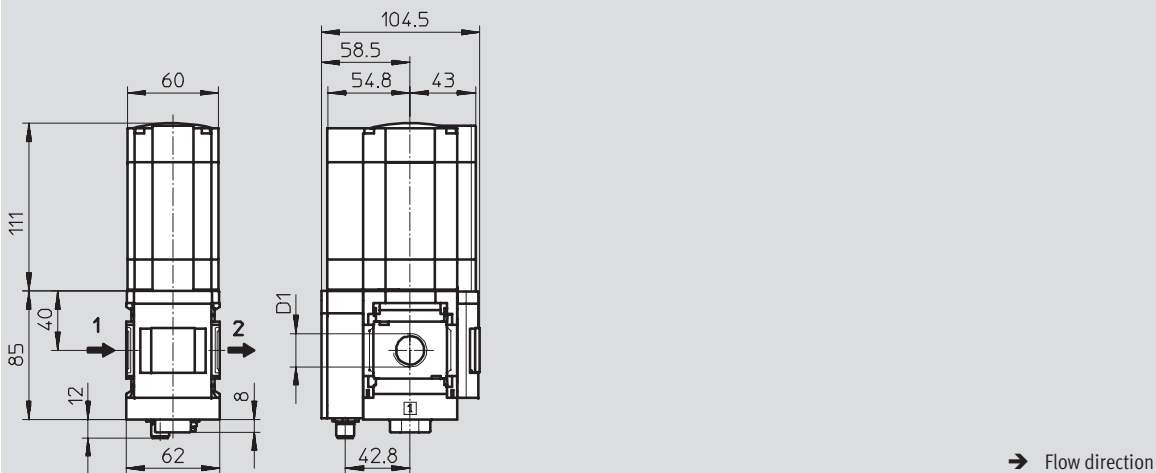
Technical data

FESTO

Dimensions – Standard

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

With pressure gauge, display unit [bar]



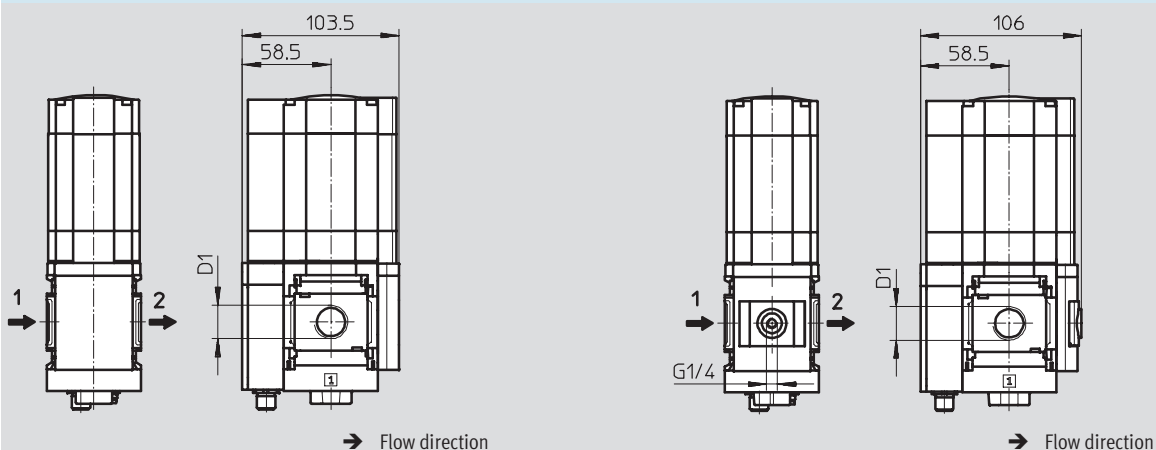
Type	D1
MS6-LRE-1/4	G1/4
MS6-LRE-3/8	G3/8
MS6-LRE-1/2	G1/2

Dimensions – Pressure gauge alternatives

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

Cover plate VS

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



Type	D1
MS6-LRE-1/4	G1/4
MS6-LRE-3/8	G3/8
MS6-LRE-1/2	G1/2

Electrical pressure regulators MS6-LRE, MS series

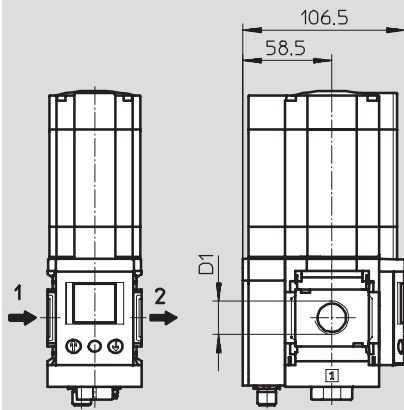
Technical data

FESTO

Dimensions – Pressure gauge alternatives

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

Control unit with display OP



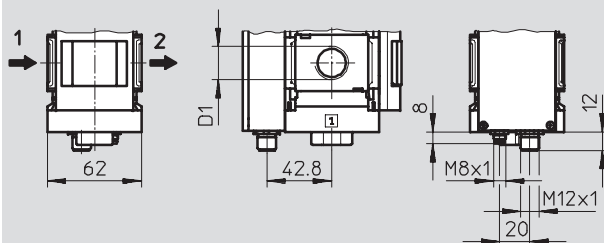
→ Flow direction

Type	D1
MS6-LRE-1/4	G1/4
MS6-LRE-3/8	G3/8
MS6-LRE-1/2	G1/2

Dimensions – Electrically controlled pressure output

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

Integrated pressure sensor with electrical output PI/PU



→ Flow direction

Electrical pressure regulators MS6-LRE, MS series

Technical data

Ordering data					
Pressure gauge					
Size	Connection	Pressure regulation range 0.3... 7 bar		Pressure regulation range 0.5... 12 bar	
		Part No.	Type	Part No.	Type
Standard					
MS6	G1¼	535 358	MS6-LRE-¼-D6	535 364	MS6-LRE-¼-D7
	G¾	535 372	MS6-LRE-¾-D6	535 378	MS6-LRE-¾-D7
	G½	535 348	MS6-LRE-½-D6	535 354	MS6-LRE-½-D7
Electrically controlled pressure output (integrated pressure sensor with voltage output), M8x1 plug, 3-pin					
MS6	G1¼	535 360	MS6-LRE-¼-D6-PI	535 366	MS6-LRE-¼-D7-PI
	G¾	535 374	MS6-LRE-¾-D6-PI	535 380	MS6-LRE-¾-D7-PI
	G½	535 350	MS6-LRE-½-D6-PI	535 356	MS6-LRE-½-D7-PI
Electrically controlled pressure output (integrated pressure sensor with voltage output), M8x1 plug, 3-pin					
MS6	G1¼	535 362	MS6-LRE-¼-D6-PU	535 369	MS6-LRE-¼-D7-PU
	G¾	535 376	MS6-LRE-¾-D6-PU	535 382	MS6-LRE-¾-D7-PU
	G½	535 352	MS6-LRE-½-D6-PU	535 357	MS6-LRE-½-D7-PU

Electrical pressure regulators MS6-LRE, MS series

Ordering data – Modular products

FESTO

Mandatory data

Module No.	Series	Size	Function	Connection size	Pressure regulation range
535 191	MS	6	LRE	1/4, 3/8, 1/2, AGB, AGC, AGD, AGE	D5 D6 D7 D8
Order example					
535 191	MS	6	- LRE	- AGC	- D6

Ordering table					
Grid dimension	[mm]	62	Condi- tions	Code	Enter code
 Module No.	535 191				
Series	Standard			MS	MS
Size	6			6	6
Function	Electrical pressure regulator			-LRE	-LRE
Connection size	Thread G1/4			-1/4	
	Thread G3/8			-3/8	
	Thread G1/2			-1/2	
	Connecting plate G1/4			-AGB	
	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	

Transfer order code

535 191	MS	6	-	LRE	-		-	
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Electrical pressure regulators MS6-LRE, MS series

Ordering data – Modular products

FESTO

Options

Pressure gauge alternatives	Alternative pressure gauge scale	Secondary venting	Electrically controlled pressure output	Sensor cables	Supply cables	Type of mounting	Alternative flow direction
VS A4 OP	PSI MPA	OS	PI PU	SK2 SK5	VK2 VK5	WBE WPB	Z
- OP	-	- OS	- PU	- SK5	-	-	- Z

Ordering table						
Grid dimension	[mm]	62	Condi- tions	Code		Enter code
0 Pressure gauge alternatives	Cover plate			-VS		
	Adapter plate for EN pressure gauge 1/4, without pressure gauge			-A4		
	Control unit with display	1		-OP		
Alternative pressure gauge scale	psi	2		-PSI		
	MPa	2		-MPA		
Secondary venting	Without secondary venting			-OS		
Electrically controlled pressure output	Plug, M8, 3-pin, I out			-PI		
	Plug, M8, 3-pin, V out			-PU		
Sensor cables	Plug socket, M8, with cable, 2.5 m	1		-SK2		
	Plug socket, M8, with cable, 5 m	1		-SK5		
Supply cable	Plug socket, M12, with cable, 2.5 m			-VK2		
	Plug socket, M12, with cable, 5 m			-VK5		
Type of mounting	Connecting plate for direct thread	3		-WBE		
	Mounting bracket for large wall gap	4		-WPB		
Alternative flow direction	Flow direction from right to left			-Z		

1 OP, SK2, SK5 Only with electrical pressure output PI, PU.

2 PSI, MPA Not with pressure gauge alternatives VS, A4, OP.

3 WBE Only with connection thread size 1/4, 3/8, 1/2.

4 WPB Only with connecting plate size AGB, AGC, AGD, AGE.

Transfer order code

- - - - - - - -

MS12 series service units

FESTO

Wide range of configuration options

→ www.festo.com/en/engineering



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



Pressure regulators MS12-LR, MS series

Peripherals overview

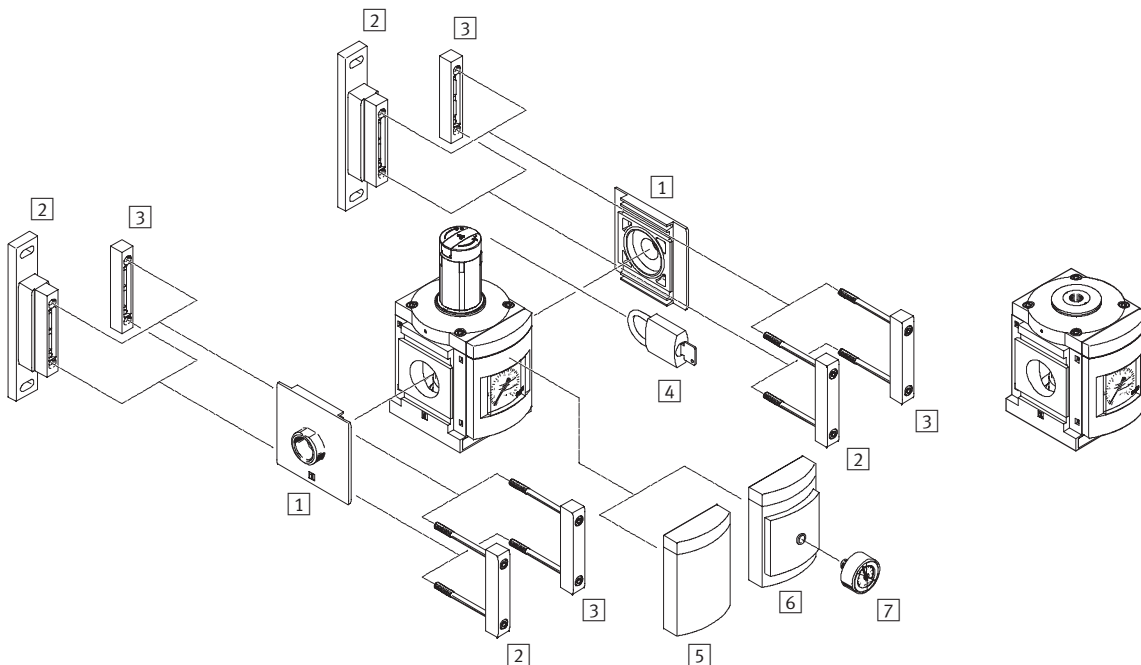
FESTO

Pressure regulator LR

Standard

Variant P0

pneumatically actuated



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 (except variant P0) LRVS-D	11-11
5 Cover plate VS	5-64
6 Adapter for EN pressure gauge 1/4 A4	5-64
7 Pressure gauge MA	11-10

Pressure regulators MS12-LR, MS series

Type codes

FESTO

		MS	12	-	LR	-	G	-	D7	-		-	LD	-	AS
Series															
MS	Standard service unit														
Size															
12	Grid dimension 124 mm														
Service function															
LR	Pressure regulator														
Connection size															
G	Module without connecting thread, without connecting plate Connecting plates → Accessories														
Pressure regulation range															
D7	0.5 ... 12 bar														
D8	0.5 ... 16 bar														
Alternative operating principle															
	No alternative operating principle														
PO	With pneumatic setpoint specification														
Rotary knob															
	No rotary knob														
LD	Long rotary knob														
Actuator lock															
	No actuator lock														
AS	Lockable rotary knob														

MS series service units
Pressure regulators

5

Further variants can be ordered using the modular system

Pressure regulators LR → 5-64

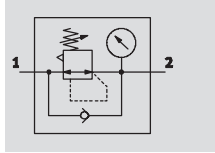
- Connecting plates
- Pressure regulation range
- Pressure gauge alternatives
- Alternative pressure gauge scale
- Rotary knob
- Actuator lock
- Type of mounting
- Alternative flow direction

Pressure regulators MS12-LR, MS series

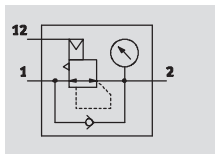
Technical data

FESTO

Function
with pressure gauge



with pressure gauge and pneumatic
setpoint specification PO



-  - Flow rate
13,000 ... 22,000 l/min

-  - Temperature range
-10 ... +60 °C

-  - Input pressure
0.8 ... 21 bar

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

Wearing parts kits
➔ 5-63

The pressure regulator maintains a constant working pressure (secondary side), regardless of the pressure variations in the system (primary side) and the air consumption.



- Good control characteristics with low hysteresis and primary pressure compensation
- High flow rate with minimal pressure drop
- Setting values are secured by locking the rotary knob
- Rotary knob can be locked using accessories

- With secondary venting
- Three pressure regulation ranges: 0.3 ... 7 bar, 0.5 ... 12 bar and 0.5 ... 16 bar
- Pressure gauge connection for different fitting options
- Return flow option for exhausting from output 2 to output 1

General technical data				
Pneumatic connection 1, 2 ¹⁾		G1	G1¼	G1½
Pilot air connection 12 for variant PO		G¼		
Design		Pressure regulator with/without pressure gauge		
		Pilot actuated diaphragm regulator (except variant PO)		
		Diaphragm regulator (variant PO)		
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		Any		
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		
Flow rate of secondary venting [l/min]		≤ 600		
Product weight [g]		4,000		

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

Standard nominal flow rate q _N ¹⁾ [l/min]				
Pneumatic connection	G1	G1¼	G1½	G2
In main flow direction 1 ➔ 2	13,000	13,500	16,000	22,000

1) Dependent on connecting plate selected, must be ordered separately as an accessory ➔ 11-2
Measured at p₁ = 10 bar and p₂ = 6 bar, Δp = 0.5 bar

Pressure regulators MS12-LR, MS series

Technical data

FESTO

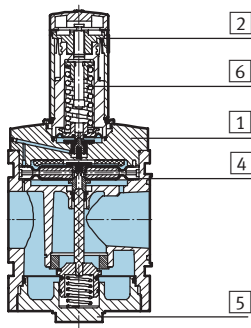
Operating and environmental conditions		
Input pressure	[bar]	0.8 ... 21
Operating medium		Compressed air, air quality class 5.7.- to DIN ISO 8573-1
Ambient temperature	[°C]	-10 ... +60
Temperature of medium	[°C]	-10 ... +60
Storage temperature	[°C]	-10 ... +60
Corrosion resistance	CRC ¹⁾	2

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.

Materials

Sectional view



Pressure regulator

1	Body	Die-cast aluminium
2	Regulating knob	Polyamide/polyacetate
4	Diaphragm	Nitrile rubber
5	Bottom cap	Wrought aluminium alloy
6	Springs	Steel
-	Seals	Nitrile rubber
Note on materials		Free of copper and PTFE only with cover plate VS

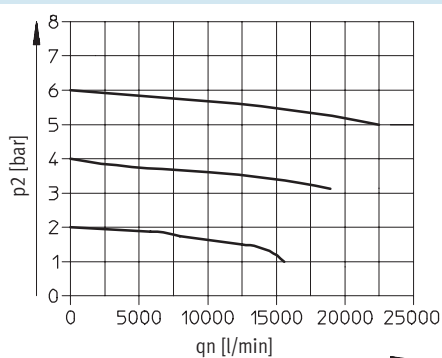
MS series service units
Pressure regulators

5

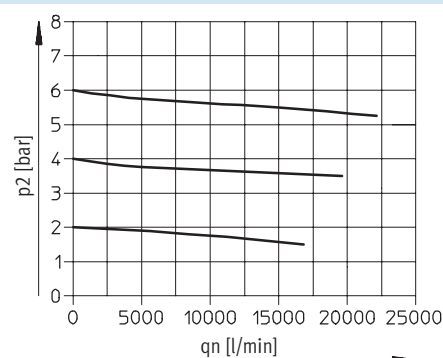
Standard flow rate qn as a function of output pressure p2

With connecting plate MS12-AGF
Pneumatic connection G1

Primary pressure p1 = 10 bar

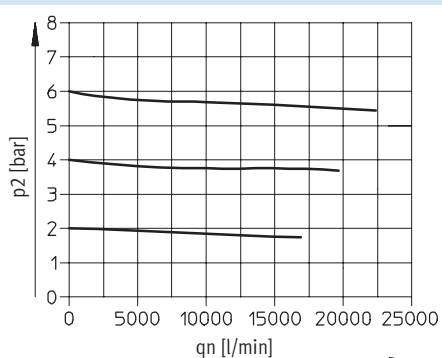


With connecting plate MS12-AGG
Pneumatic connection G1¼

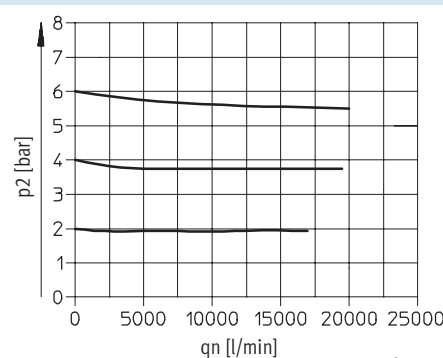


With connecting plate MS12-AGH
Pneumatic connection G1½

Primary pressure p1 = 10 bar



With connecting plate MS12-AGI
Pneumatic connection G2



Pressure regulators MS12-LR, MS series

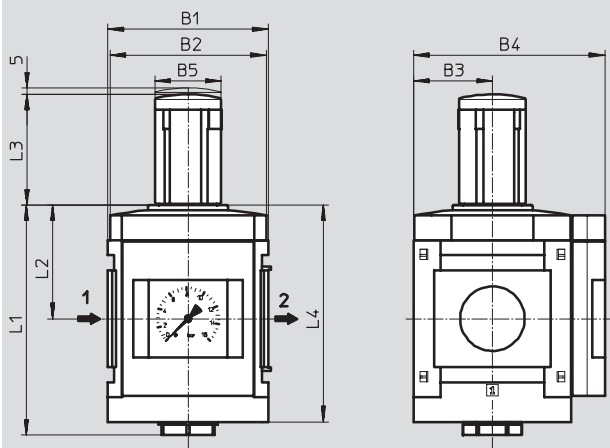
Technical data

FESTO

Dimensions – Standard

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

With pressure gauge, display unit [bar], long rotary knob



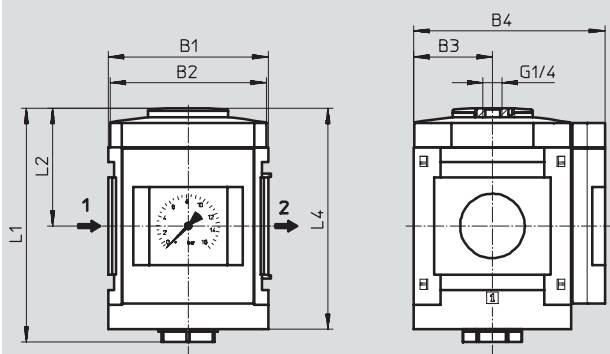
→ Flow direction

Type	B1	B2	B3	B4	B5	L1	L2	L3	L4
MS12-LR	124	122	61	148	51	178	88	86	168

Dimensions – Alternative operating principle

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

Pneumatically actuated PO, with pressure gauge, display unit [bar]



→ Flow direction

Type	B1	B2	B3	B4	L1	L2	L4
MS12-LR-...-PO	124	122	61	148	181	91	171

Pressure regulators MS12-LR, MS series

Technical data

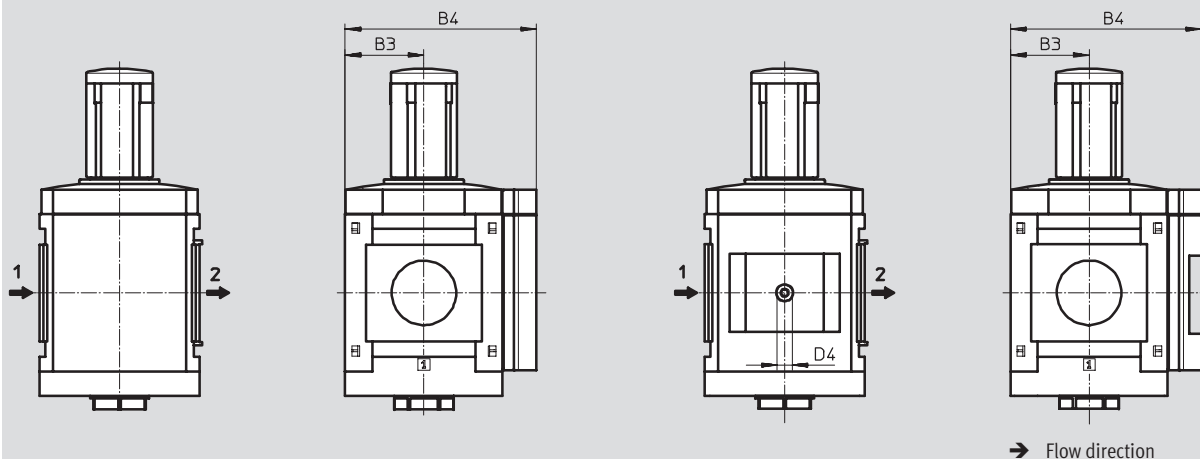
FESTO

Dimensions – Pressure gauge alternatives

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

Cover plate VS

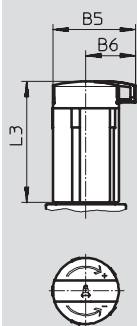
Adapter A4 for EN pressure gauge 1/4, without pressure gauge



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

Dimensions – Rotary knob

Long, lockable LD-AS



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

Ordering data

Pressure gauge

Size	Connection	Long rotary knob, can be locked using accessories, pressure regulation range 0.5... 12 bar		Alternative operating principle, pressure regulation range 0.5... 16 bar	
		Part No.	Type	Part No.	Type
MS12	G1 ... G2 ¹⁾	537 148	MS12-LR-G-D7-LD-AS	541 680	MS12-LR-G-D8-PO

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

Pressure regulators MS12-LR, MS series

Ordering data – Modular products

FESTO

Mandatory data →

Module No.	Series	Size	Function	Connection size	Pressure regulation range
535 021	MS	12	LR	AGF AGG AGH AGI G	D6 D7 D8
Order example					
535 021	MS	12	- LR	- G	- D8

Ordering table

Grid dimension	[mm]	124	Condi- tions	Code	Enter code
M Module No.		535 021			
Series		Standard		MS	MS
Size		12		12	12
Function		Pressure regulator		-LR	-LR
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	

MS series service units
Pressure regulators

5

Transfer order code

535 021	MS	12	-	LF	-		-	
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Pressure regulators MS12-LR, MS series

Ordering data – Modular products

FESTO

0 Options

Pressure gauge alternatives	Alternative pressure gauge scale	Rotary knob	Security	Alternative operating principle	Type of mounting	Alternative flow direction
VS A4	PSI MPa	LD	AS	PO	WP	Z
- VS	-	- LD	- AS	- PO	-	- Z

Ordering table

Grid dimension	[mm]	124	Condi- tions	Code	Enter code
0	Pressure gauge alternatives	Cover plate		-VS	
		Adapter plate for EN pressure gauge 1/4, without pressure gauge		-A4	
	Alternative pressure gauge scale	psi	1	-PSI	
		MPa	1	-MPA	
	Rotary knob	Long rotary knob	2	-LD	
	Security	Lockable rotary knob		-AS	
	Alternative operating principle	Pneumatically actuated	3	-PO	
	Type of mounting	Mounting bracket	4	-WP	
	Alternative flow direction	Flow direction from right to left		-Z	

- 1 **PSI, MPA** Not with pressure gauge alternatives VS, A4
 2 **LD** Must be selected if alternative operating principle PO has not been selected

- 3 **PO** Not with rotary knob LD.
 Not with security AS
 4 **WP** Only with connecting plate AGF, AGG, AGH or AGI

Transfer order code

- - - - - - -



MS series service units

Accessories

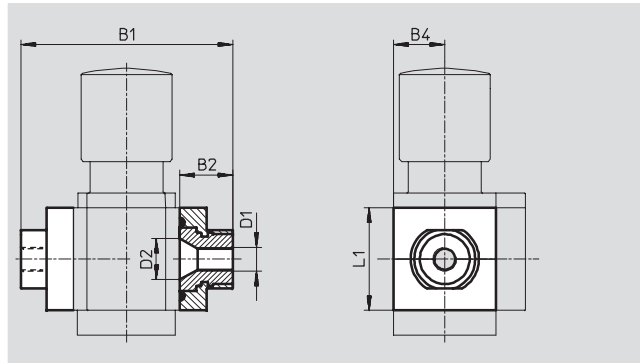
FESTO

Connecting plate MS4/6-AG...

(order code: AG...)

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

Material:
Aluminium



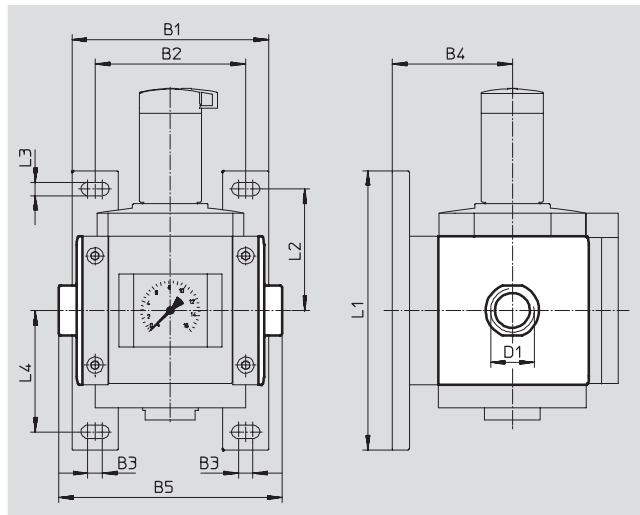
Dimensions and ordering data									
Size	B1	B2	B4	D1	D2	L1	Weight [g]	Part No.	Type
MS4	83.5	21.5	21	G $\frac{1}{8}$	16.8	42	128	526 068	MS4-AGA
				G $\frac{1}{4}$				526 069	MS4-AGB
				G $\frac{3}{8}$				526 070	MS4-AGC
MS6	115	26.5	31	G $\frac{1}{4}$	24	62	300	526 080	MS6-AGB
				G $\frac{3}{8}$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

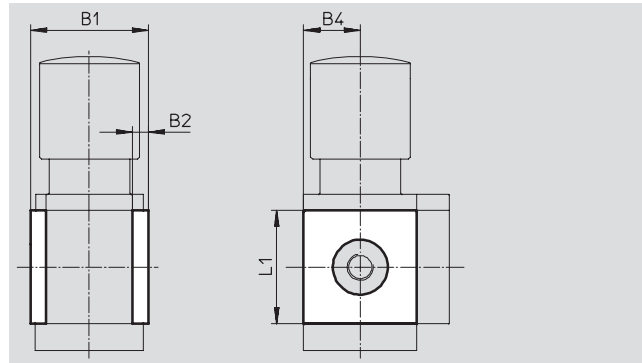
Cover cap MS4/6-END

- 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

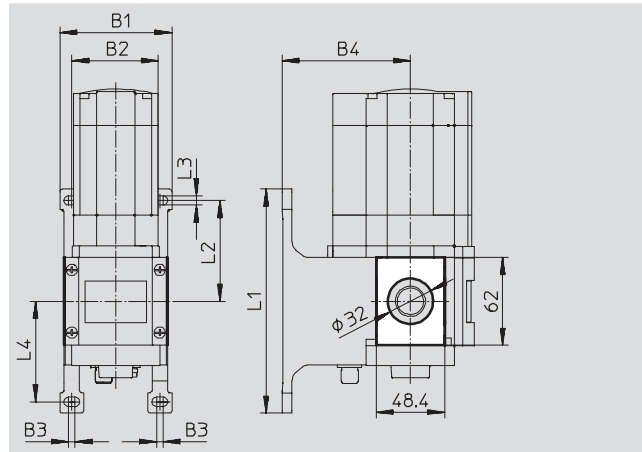
(order code: WBE; scope of delivery includes wall mounting plate MS6-WPB)

- 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

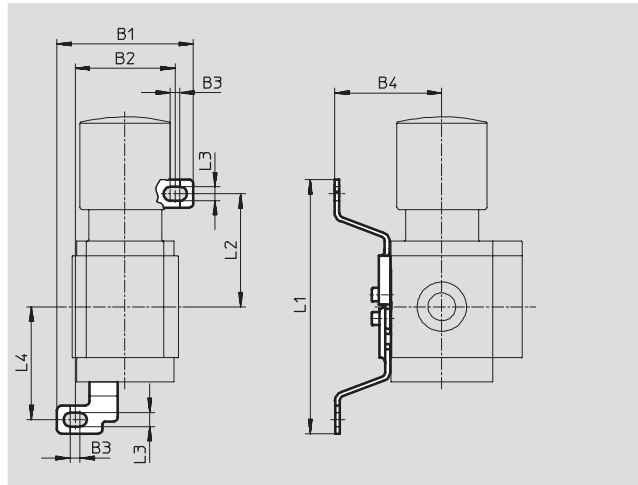
Mounting bracket MS4/6-WB

(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

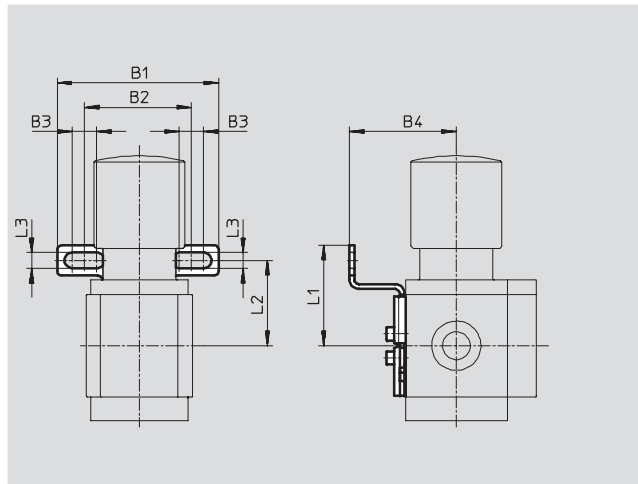
Mounting bracket MS4-WBM

(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

FESTO

Mounting bracket MS4/6-WR

(order code: WR)

- For wall mounting
- For filter regulator, pressure regulator

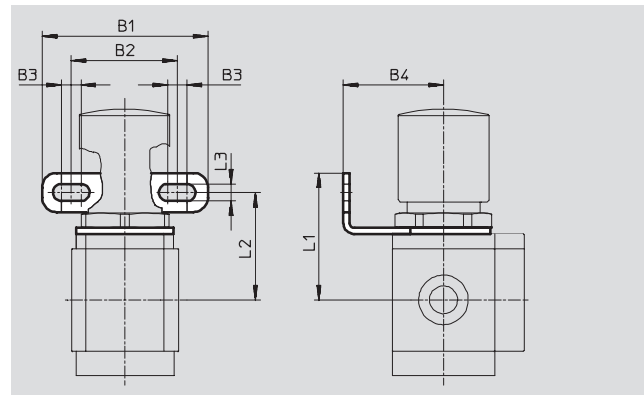
Material:

Steel



Note

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



Dimensions and ordering data

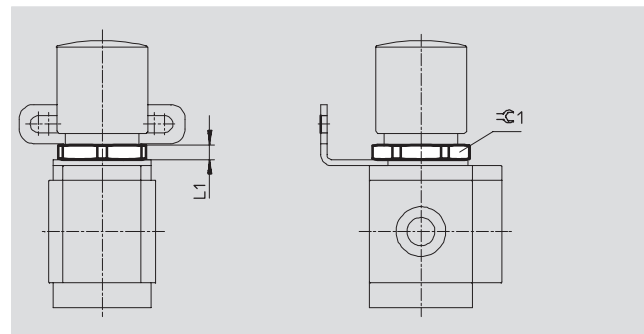
Size	B1	B2	B3	B4	L1	L2	L3	Weight [g]	Part No.	Type
MS4	68	44	8	41	52	44	7	49	526 064	MS4-WR
MS6	70	42	8.2	40	67	57	7.1	90	526 075	MS6-WR

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

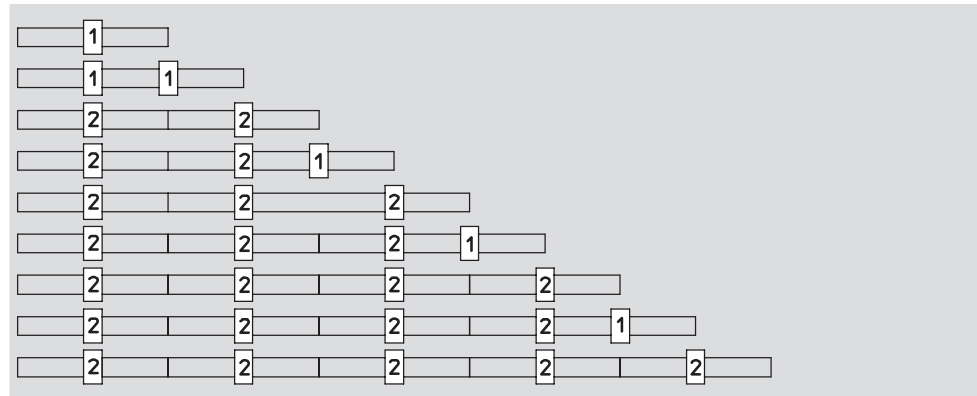
138 mm with WPM-2D

1 Mounting bracket WP, WPB or WPM-D

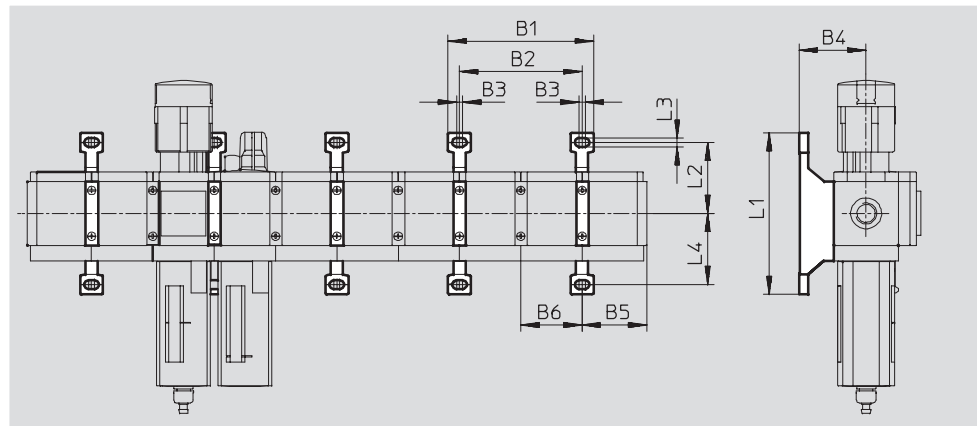
2 Mounting bracket WP, WPB or WPM-2D

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

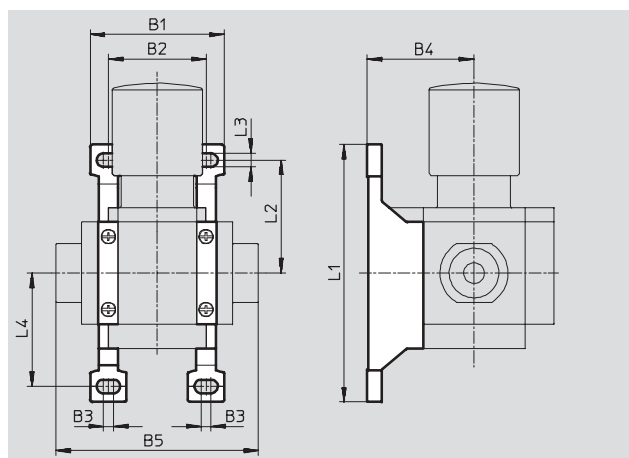
Mounting bracket MS4/6-WP

(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

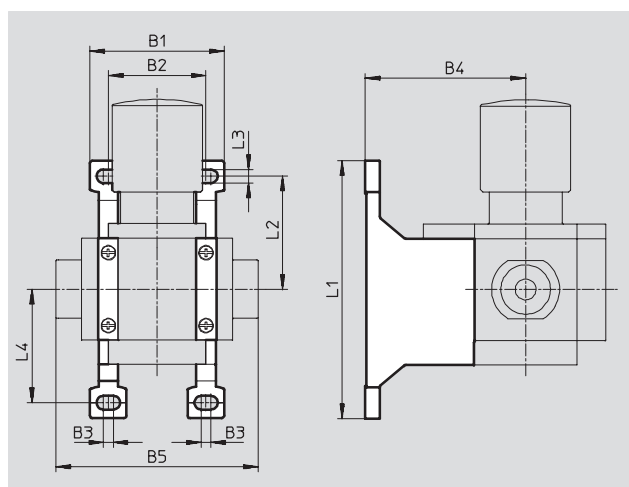
Mounting bracket MS4/6-WPB

(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

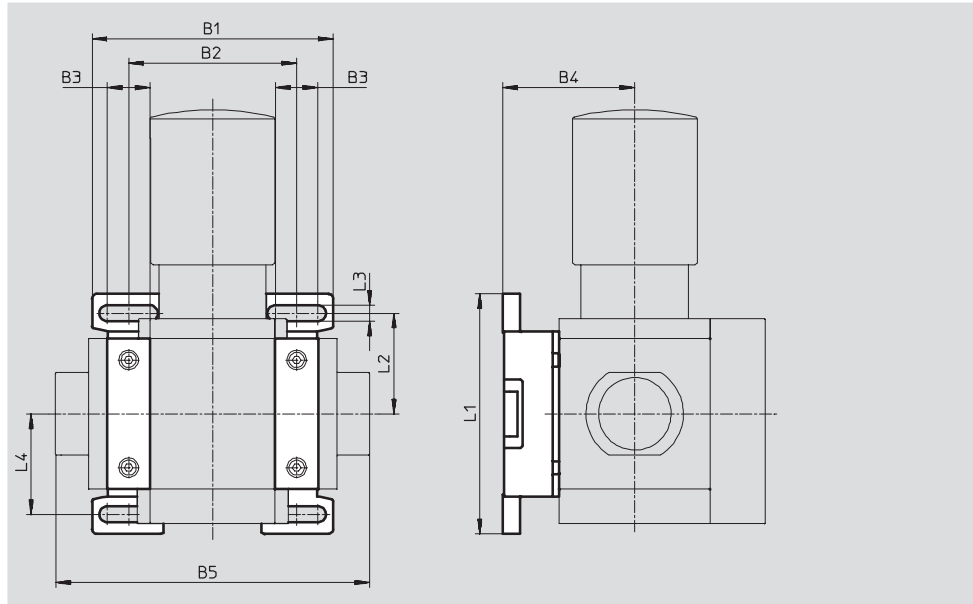
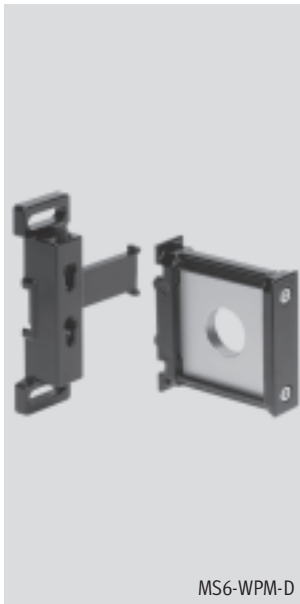
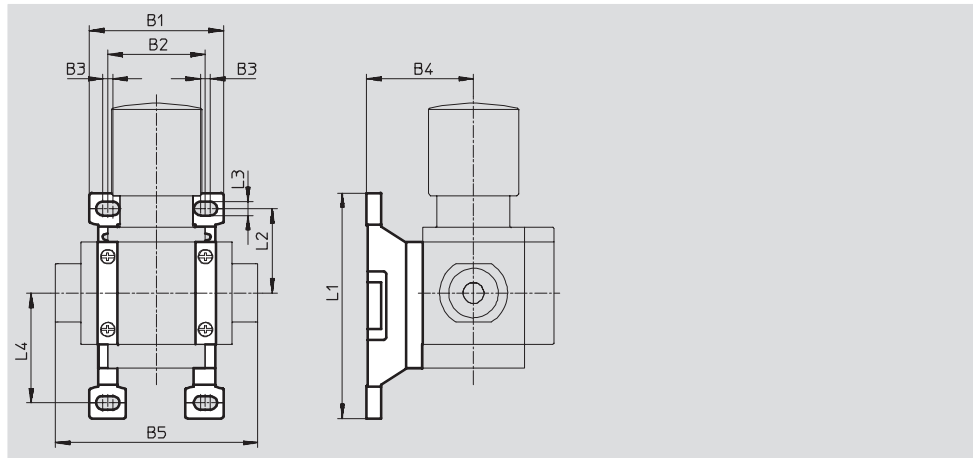
Mounting bracket MS4/6-WPM

(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



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

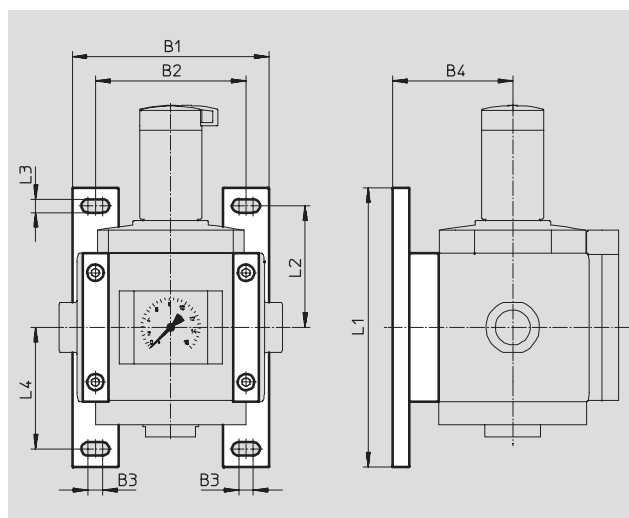
(order code: WP)

- 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

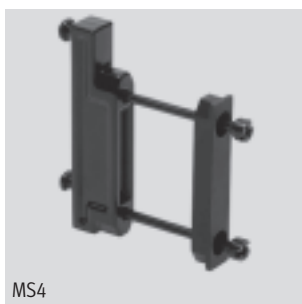
Size	Weight [g]	Part No.	Type
MS4	36	532 798	MS4-MV
MS6	54	532 799	MS6-MV
MS12	500	537 134	MS12-MV

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

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	
	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	

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	
	M12x1, 4-pin	5	164 259	SIM-M12-4GD-5-PU	
		5	175 715	SIM-M12-5GD-2,5-PU	
	M12x1, 3-pin	2.5	175 716	SIM-M12-5GD-5-PU	
		5	159 430	SIM-M12-3WD-2,5-PU	
	M12x1, 4-pin	5	159 431	SIM-M12-3WD-5-PU	
		5	164 258	SIM-M12-4WD-5-PU	

Ordering data – Pressure gauge MA					
	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

FESTO

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	LRVS-D

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