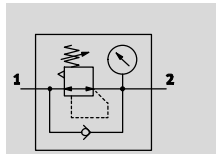




Pressure regulators MS4/MS6-LR, MS series


Technical data

With pressure gauge



-  - Flow rate
1,000 ... 7,500 l/min

-  - Temperature range
-10 ... +60 °C

-  - Operating pressure
0.8 ... 20 bar

-  - www.festo.com

Wearing parts kits

→ 19



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 regulation characteristics with low hysteresis and primary pressure compensation
- High flow rate with minimal pressure drop
- Available with and without secondary venting
- Regulator lock for protecting the values against adjustment


- 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 already integrated

- Optional pressure sensor
- Optional rotary knob pressure gauge
- Optional device variant EX4 for use in potentially explosive areas in zones 1, 2, 21 and 22

General technical data					
Size	MS4		MS6		
Pneumatic connection 1, 2	G $\frac{1}{8}$		G $\frac{1}{4}$	G $\frac{3}{8}$	G $\frac{1}{2}$
Constructional design	Directly-actuated diaphragm regulator				
Regulating function	Output pressure constant, with primary pressure compensation, with return flow action, with/without secondary venting				
Type of mounting	Via accessories				
	In-line installation				
	Front panel mounting				
Mounting position	Any				
Regulator lock	Rotary knob with detent				
	Rotary knob with detent, lockable via accessories				
	Rotary knob with integrated lock				
Pressure regulation range/operation	D5 [bar]	0.3 ... 4, manually operated ¹⁾			
	D6 [bar]	0.3 ... 7, manually operated ¹⁾			
	D7 [bar]	0.5 ... 12, manually operated (0.5 ... 10 with pressure sensor AD... or with UL certification) ¹⁾			
	D8 [bar]	-		0.5 ... 16, manually operated (0.5 ... 10 with UL certification) ¹⁾	
Max. hysteresis [bar]	0.25 (0.4 with rotary knob pressure gauge DM1/DM2)		0.25 (0.4 with rotary knob pressure gauge DM2)		
Pressure display	Via pressure sensor for displaying output pressure via LCD display and electrical output				
	Via pressure sensor for displaying output pressure via operational status indicator and electrical output				
	Via pressure gauge for displaying output pressure				
	Via pressure gauge with red/green scale for displaying output pressure				
	Via pressure gauge in rotary knob for displaying output pressure				
	G $\frac{1}{8}$ prepared		-		
G $\frac{1}{4}$ prepared		-			

1) MS4: For pressure regulators with rotary knob pressure gauge DM..., the pressure regulation range begins at 0.8 bar.

-  - Note: This product conforms to ISO 1179-1 and to ISO 228-1

 **New**
Variant EX4, UL1

Pressure regulators MS4/MS6-LR, MS series

FESTO

Technical data

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 $\frac{3}{8}$	G $\frac{1}{2}$
Pressure regulation range	D5	1,200 ²⁾	2,100 ²⁾	2,400 ²⁾	5,500 ²⁾	7,500 ²⁾
	D6	1,150	1,800	3,000	5,800	6,500
	D7	1,000	1,700 ³⁾	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
- 3) In the case of the DM1/DM2 pressure regulator/gauge with rotary knob, q_{nN} is equal to 800 litres per minute and $q_{n \max}$ amounts to 2,200 litres per minute.

Operating and environmental conditions		
Size	MS4	MS6
Operating pressure [bar]	0.8 ... 14 (0.8 ... 10) ¹⁾	
Operating medium	Compressed air in accordance with ISO 8573-1:2010 [7:4:4]	
	Inert gases	
Note on operating/pilot medium	Operation with lubricated medium possible (in which case lubricated operation will always be required)	
Ambient temperature [°C]	–10 ... +60 (0 ... +50) ²⁾	
Temperature of medium [°C]	–10 ... +60 (0 ... +50) ²⁾	
Storage temperature [°C]	–10 ... +60	
Corrosion resistance class CRC ³⁾	2	
UL certification	cULus recognized (OL)	

- 1) Value in brackets applies to MS4/MS6-LR with UL certification.
- 2) Value in brackets applies to MS4/MS6-LR with pressure sensor AD...
- 3) Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.

ATEX	
EU certification	EX4
ATEX category gas	II 2G
Ex-ignition protection type gas	c T6 X
ATEX category dust	II 2D
EX-ignition protection type dust	c 60 °C X
ATEX ambient temperature	–10 °C ≤ Ta ≤ +60 °C
CE mark (see declaration of conformity)	To EU Explosion Protection Directive (ATEX)

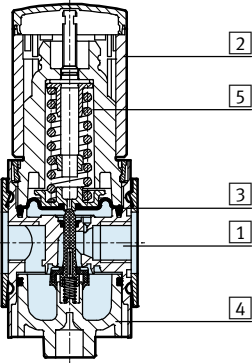
Weight [g]		
Size	MS4	MS6
Pressure regulator	225	730
Pressure regulator with rotary knob with integrated lock E11	350	1,000

Pressure regulators MS4/MS6-LR, MS series

Technical data

Materials

Sectional view



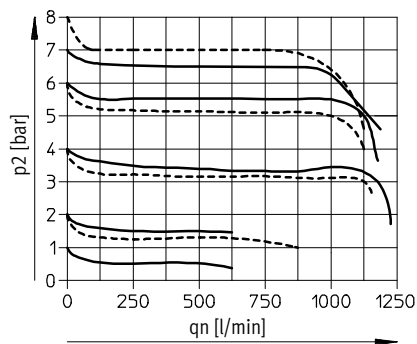
Pressure regulator

1	Housing	Die-cast aluminium
2	Rotary knob	PA/POM
	Rotary knob with integrated lock	Aluminium
	E11	
3	Diaphragm	NBR
4	Cap, bottom	PET
5	Springs	Steel
-	Seals	NBR
Note on materials		RoHS-compliant
		Free of copper and PTFE only with cover plate VS

Standard flow rate q_n as a function of output pressure p_2

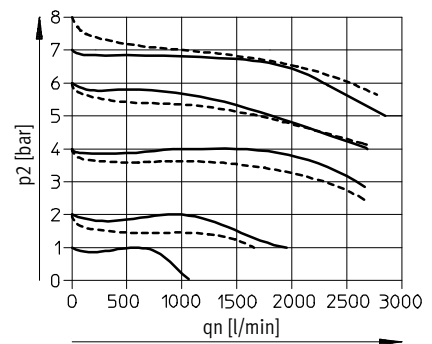
Input pressure $p_1 = 10$ bar

MS4-LR-1/8



— D6: 0.3 ... 7 bar
- - - D7: 0.5 ... 12 bar¹⁾

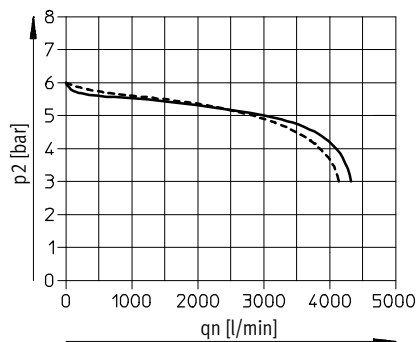
MS4-LR-1/4



1) There is a higher initial pressure drop for the characteristic curve of the DM1/DM2 variant.

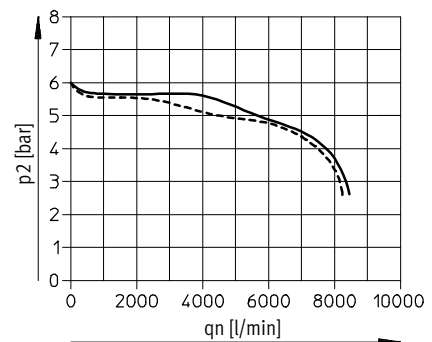
MS6-LR-1/4

Input pressure $p_1 = 10$ bar



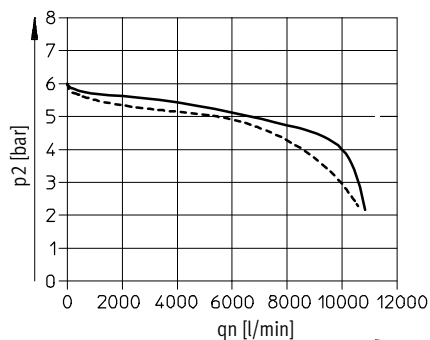
— D6: 0.3 ... 7 bar
- - - D7: 0.5 ... 12 bar

MS6-LR-3/8



MS6-LR-1/2

Input pressure $p_1 = 10$ bar



— D6: 0.3 ... 7 bar
- - - D7: 0.5 ... 12 bar

New
Variant EX4, UL1

Pressure regulators MS4/MS6-LR, MS series

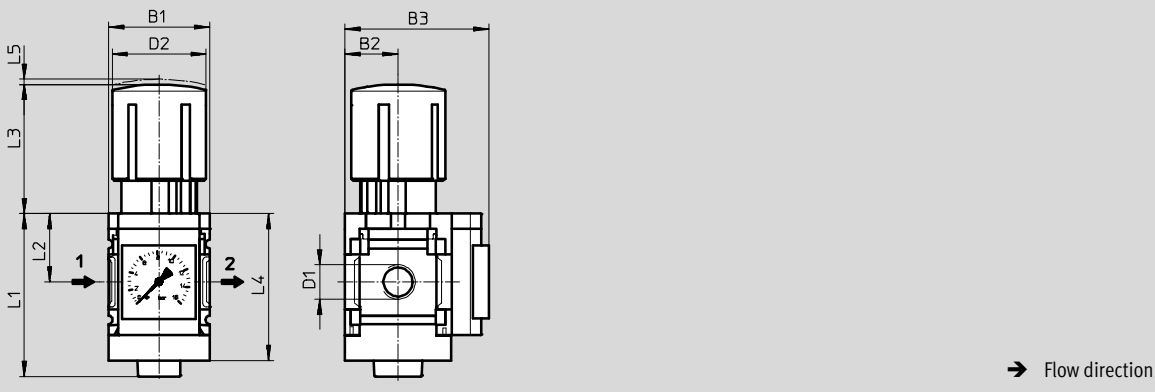
Technical data

FESTO

Dimensions – Basic version

Download CAD data → www.festo.com

Integrated pressure gauge, display unit [bar], standard rotary knob with detent



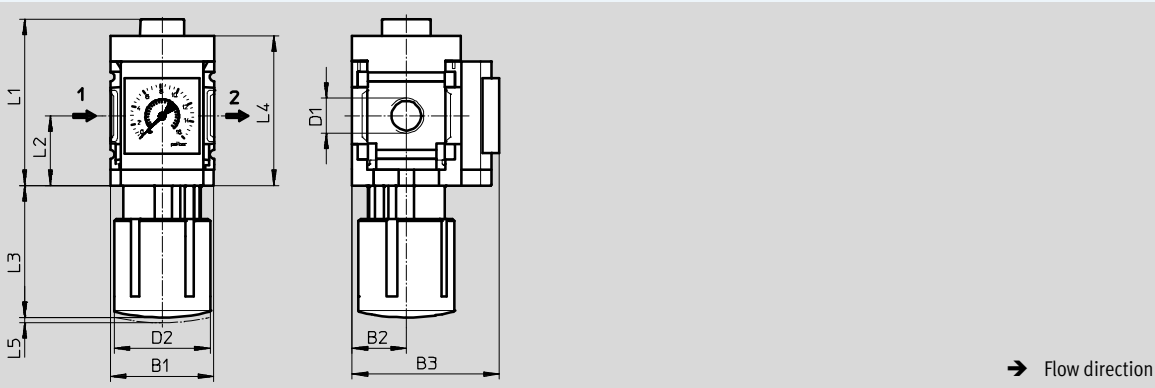
Type	B1	B2	B3		D1	D2	L1	L2	L3	L4	L5
			Standard scale	Red-green scale							
MS4-LR-1/8	40	21	57	58.5	G1/8	37.2	64.4	27	51.1	58.5	2
MS4-LR-1/4					G1/4						
MS6-LR-1/4	62	31	77	78.5	G1/4	51.2	94	39	86	85	5
MS6-LR-3/8					G3/8						
MS6-LR-1/2					G1/2						

Note: This product conforms to ISO 1179-1 and to ISO 228-1

Dimensions – Alternative mounting position

Download CAD data → www.festo.com

Rotary knob underneath KD



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	58.5	2
MS4-LR-1/4-...-KD				G1/4						
MS6-LR-1/4-...-KD	62	31	77	G1/4	51.2	94	39	86	85	5
MS6-LR-3/8-...-KD				G3/8						
MS6-LR-1/2-...-KD				G1/2						

Note: This product conforms to ISO 1179-1 and to ISO 228-1

Pressure regulators MS4/MS6-LR, MS series

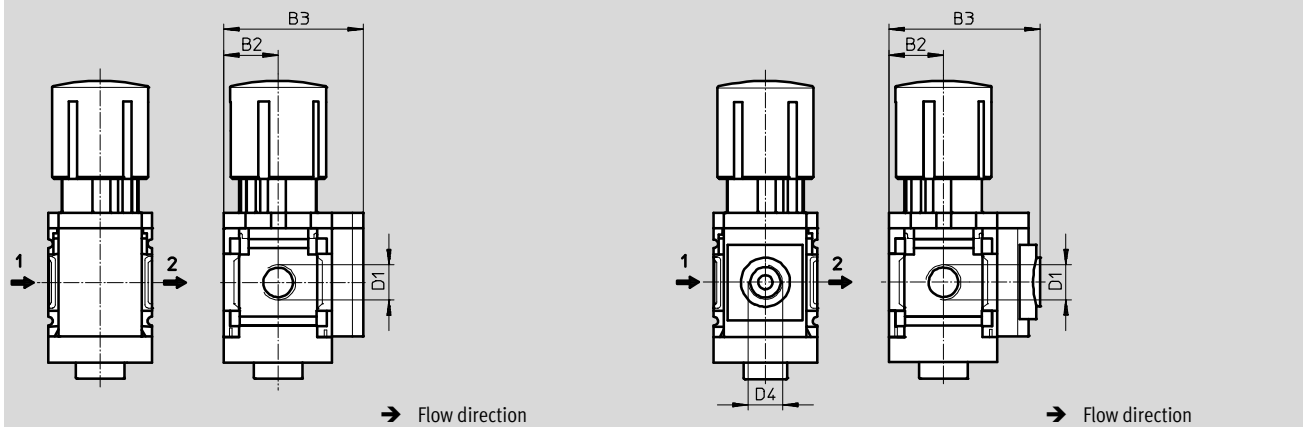
Technical data

Dimensions – Pressure gauge alternatives

Download CAD data → www.festo.com

Cover plate VS

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



Type	B2	B3	D1	D4
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	
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	

Note: This product conforms to ISO 1179-1 and to ISO 228-1

New
Variant EX4, UL1

Pressure regulators MS4/MS6-LR, MS series

Technical data

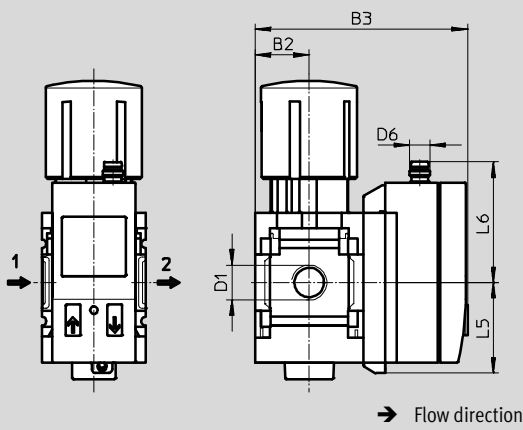
FESTO

Dimensions – Pressure gauge alternatives

Download CAD data → www.festo.com

Pressure sensor with LCD display AD1 ... AD4

Technical data → Internet: sde1



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

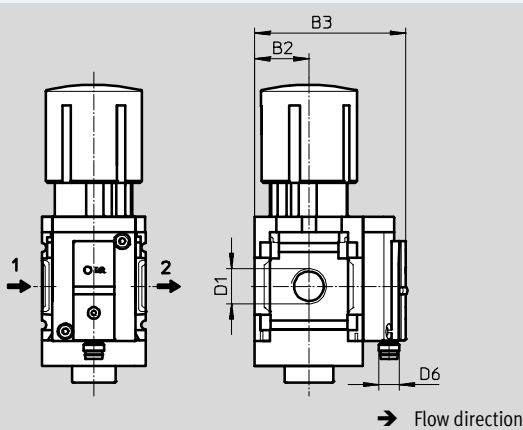
Variant AD3:
SDE1-D10-G2-MS-L-PI-M12 with
4-pin plug M12x1, 1 switching
output PNP and 4 ... 20 mA
analogue

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

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

Pressure sensor without LCD display (operational status indicator only) AD7 ... AD10

Technical data → Internet: sde5



Variant AD7:
SDE5-D10-O-...-P-M8 with 3-pin
plug M8x1, threshold value
comparator, 1 switching output PNP,
N/O contact

Variant AD9:
SDE5-D10-O3-...-P-M8 with 3-pin
plug M8x1, window comparator,
1 switching output PNP, N/O contact

Variant AD8:
SDE5-D10-C-...-P-M8 with 3-pin
plug M8x1, threshold value
comparator, 1 switching output PNP,
N/C contact

Variant AD10:
SDE5-D10-C3-...-P-M8 with 3-pin
plug M8x1, window comparator,
1 switching output PNP, N/C contact

Type	B2	B3	D1	D6	L5	L6
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			
MS4-LR-1/8-...-AD7/AD8/AD9/AD10	21	59.1	G1/8	M8x1	-	-
MS4-LR-1/4-...-AD7/AD8/AD9/AD10			G1/4			
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			
MS6-LR-1/4-...-AD7/AD8/AD9/AD10	31	79	G1/4	M8x1	-	-
MS6-LR-3/8-...-AD7/AD8/AD9/AD10			G3/8			
MS6-LR-1/2-...-AD7/AD8/AD9/AD10			G1/2			

– † – Note: This product conforms to ISO 1179-1 and to ISO 228-1

Pressure regulators MS4/MS6-LR, MS series

Technical data

Dimensions – Rotary knob

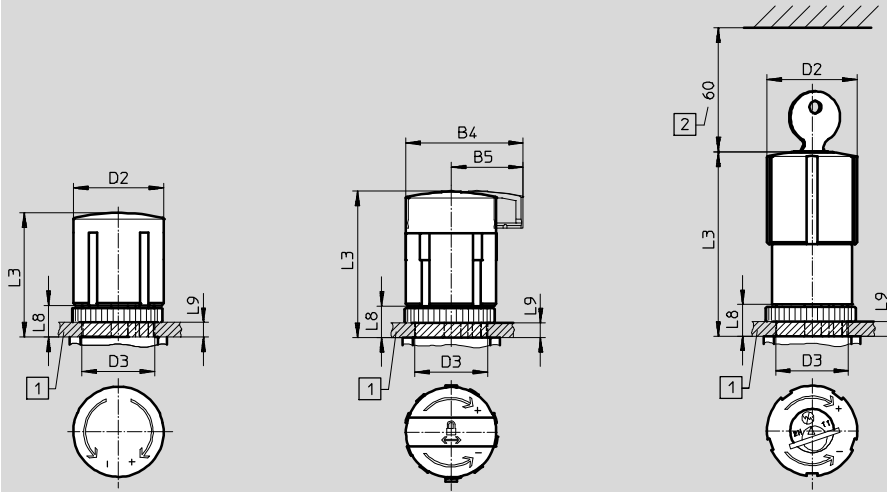
Download CAD data → www.festo.com

For installation into control panel

Standard rotary knob with detent

Standard rotary knob with detent,
lockable via accessories AS

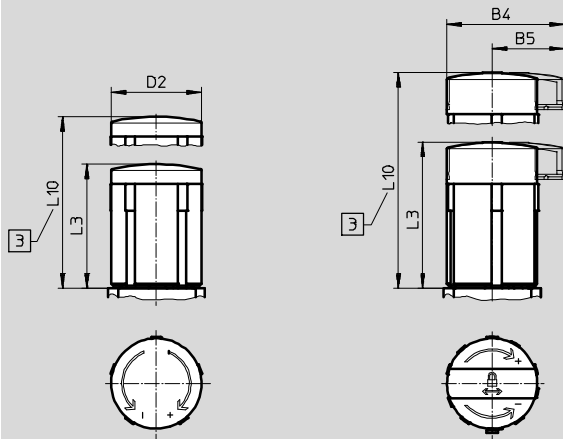
Rotary knob with integrated lock
E11



- 1 Max. control panel thickness
- 2 Installation dimensions

Long rotary knob with detent LD

Long rotary knob with detent,
lockable via accessories LD-AS



- 3 For pressure adjustment: pull out telescopic rotary knob fully

Type	B4	B5	D2	D3 +1	L3	L8	L9	L10
MS4-LR-...	-	-	37.2	30	51.1	13	6	-
MS4-LR-...-AS	48.6	30			60.2			
MS4-LR-...-E11	-	-			76			
MS4-LR-...-LD	-	-	37.2	-	51.1	-	-	76.8
MS4-LR-...-LD-AS	48.6	30			60			85.7
MS6-LR-...	-	-	51.2	44	86	22	14	-
MS6-LR-...-AS	64.4	38.8			93			
MS6-LR-...-E11	-	-			110			
MS6-LR-...-LD	-	-	51.2	-	86	-	-	139
MS6-LR-...-LD-AS	64.4	38.8			95.5			148.5

New
Variant EX4, UL1

Pressure regulators MS4/MS6-LR, MS series

Technical data

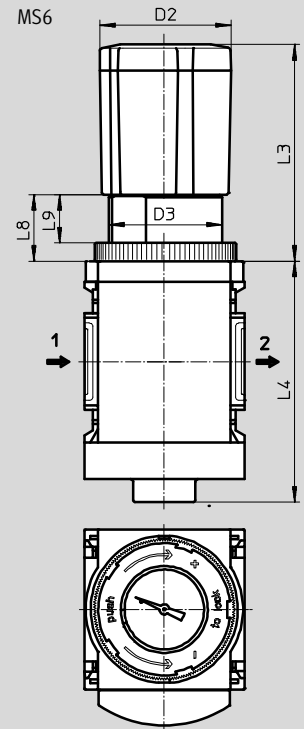
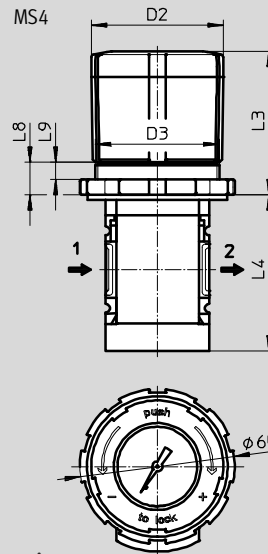
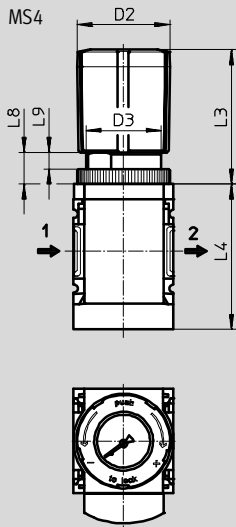
FESTO

Dimensions – Rotary knob with pressure gauge

Download CAD data → www.festo.com

Small DM1

Large DM2



Note

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

→ 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	51.2	M48x1.5	56	60.5	13	7
MS6-LR-...-DM2	51	M44x1	84	94	25	18

Pressure regulators MS4/MS6-LR, MS series

FESTO

Technical data

Ordering data							
Integrated pressure gauge, display unit [bar], standard rotary knob with detent, lockable via accessories							
Size	Connection	Pressure regulation range 0.3 ... 4 bar		Pressure regulation range 0.3 ... 7 bar		Pressure regulation range 0.5 ... 12 bar	
		Part No.	Type	Part No.	Type	Part No.	Type
MS4	G $\frac{1}{8}$	529421	MS4-LR-$\frac{1}{8}$-D5-AS	529423	MS4-LR-$\frac{1}{8}$-D6-AS	529425	MS4-LR-$\frac{1}{8}$-D7-AS
	G $\frac{1}{4}$	529415	MS4-LR-$\frac{1}{4}$-D5-AS	529417	MS4-LR-$\frac{1}{4}$-D6-AS	529419	MS4-LR-$\frac{1}{4}$-D7-AS
MS6	G $\frac{1}{4}$	529995	MS6-LR-$\frac{1}{4}$-D5-AS	529997	MS6-LR-$\frac{1}{4}$-D6-AS	529999	MS6-LR-$\frac{1}{4}$-D7-AS
	G $\frac{3}{8}$	530001	MS6-LR-$\frac{3}{8}$-D5-AS	530003	MS6-LR-$\frac{3}{8}$-D6-AS	530005	MS6-LR-$\frac{3}{8}$-D7-AS
	G $\frac{1}{2}$	529989	MS6-LR-$\frac{1}{2}$-D5-AS	529991	MS6-LR-$\frac{1}{2}$-D6-AS	529993	MS6-LR-$\frac{1}{2}$-D7-AS

Ordering data – Wearing parts kits		
Size	Part No.	Type
MS4	673649	MS4-LR/LRB
MS6	673650	MS6-LR/LRB