

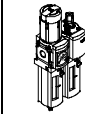
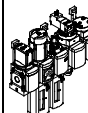
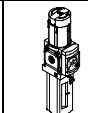
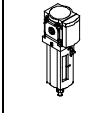
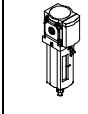
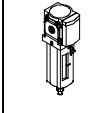
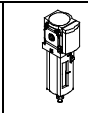
Pressure regulators MS-LR/LRB/LRP/LRPB/LRE, MS series



# Pressure regulators MS-LR/LRB/LRP/LRPB/LRE, MS series

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Product range overview – MS series service units

Type	Size	Pneumatic connection in housing	Connecting plate	Pressure regulation range [bar]						Grade of filtration [µm]			
				0.05 ... 0.7	0.05 ... 2.5	0.1 ... 4	0.3 ... 7	0.1 ... 12	0.5 ... 16	0.01	1	5	40
Code			AG...	D2	D4	D5	D6	D7	D8	A	B	C	E
<b>Service units</b>													
<b>MSB-FRC</b> 	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	-	-	-	■	■	-	-	-	■	■
	9	-	-	-	-	-	-	-	-	-	-	-	-
	12	-	-	-	-	-	-	-	-	-	-	-	-
<b>Service unit combinations (further variants can be ordered using the configurator → Internet: msb4, msb6 or msb9)</b>													
<b>MSB</b> 	4	G1/4	G1/8, G1/4, G3/8	-	-	-	■	■	-	-	-	■	■
	6	G1/2	G1/4, G3/8, G1/2, G3/4	-	-	-	■	■	-	-	-	■	■
	9	-	-	-	-	-	-	-	-	-	-	-	-
	12	-	-	-	-	-	-	-	-	-	-	-	-
<b>Individual devices</b>													
<b>Filter regulators</b> <b>MS-LFR</b> 	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	-	-	■	■	■	■	-	-	■	■
	9	G3/4, G1	G1/2, G3/4, G1, G1 1/4, G1 1/2	-	-	■	■	■	■	-	-	■	■
	12	-	G1, G1 1/4, G1 1/2, G2	-	-	-	■	■	■	-	-	■	■
<b>Filters</b> <b>MS-LF</b> 	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	-	-	-	-	-	-	-	-	■	■
	9	G3/4, G1	G1/2, G3/4, G1, G1 1/4, G1 1/2	-	-	-	-	-	-	-	-	■	■
	12	-	G1, G1 1/4, G1 1/2, G2	-	-	-	-	-	-	-	-	■	■
<b>Fine and micro filters</b> <b>MS-LFM</b> 	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	-	-	-	-	-	■	■	-	-	-
	9	G3/4, G1	G1/2, G3/4, G1, G1 1/4, G1 1/2	-	-	-	-	-	■	■	-	-	-
	12	-	G1, G1 1/4, G1 1/2, G2	-	-	-	-	-	■	■	-	-	-
<b>Activated carbon filters</b> <b>MS-LFX</b> 	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	-	-	-	-	-	-	-	-	-	-
	9	G3/4, G1	G1/2, G3/4, G1, G1 1/4, G1 1/2	-	-	-	-	-	-	-	-	-	-
	12	-	G1, G1 1/4, G1 1/2, G2	-	-	-	-	-	-	-	-	-	-
<b>Water separators</b> <b>MS-LWS</b> 	4	-	-	-	-	-	-	-	-	-	-	-	-
	6	G1/4, G3/8, G1/2	G1/4, G3/8, G1/2, G3/4	-	-	-	-	-	-	-	-	-	-
	9	G3/4, G1	G1/2, G3/4, G1, G1 1/4, G1 1/2	-	-	-	-	-	-	-	-	-	-
	12	-	G1, G1 1/4, G1 1/2, G2	-	-	-	-	-	-	-	-	-	-

# Pressure regulators MS-LR/LRB/LRP/LRPB/LRE, MS series



Product range overview – MS series service units

Type	Size	Bowl guard		Condensate drains			Pressure indicator					Security		Options		→ Page/ Internet	
		Plastic bowl with 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 plate for EN pressure gauge G1/8	Adapter plate for EN pressure gauge G1/4	Pressure sensor	Rotary knob with detent, lockable via accessories	Rotary knob with integrated lock	Silencer		Flow direction from right to left
Code		R	U	M	H	V	E...	VS	AG	A8	A4	AD...	AS	E11	S	Z	
<b>Service units</b>																	
MSB-FRC	4	■	-	■	-	■	-	-	■	-	-	-	■	-	-	■	msb4
	6	■	■	■	-	■	-	-	■	-	-	-	■	-	-	■	msb6
	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Service unit combinations</b>																	
MSB	4	■	■	■	-	■	-	-	■	-	-	-	■	-	-	■	msb4
	6	■	■	■	-	■	-	-	■	-	-	-	■	-	-	■	msb6
	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Individual devices</b>																	
Filter regulators MS-LFR	4	■	■	■	■	■	-	■	■	■	■	■	■	■	-	■	ms4-lfr
	6	■	■	■	■	■	■	■	■	-	■	■	■	■	-	■	ms6-lfr
	9	-	■	■	■	■	■	■	■	-	■	■	■	■	-	■	ms9-lfr
	12	-	■	■	-	■	■	■	■	-	■	-	■	■	-	■	ms12-lfr
Filters MS-LF	4	■	■	■	■	■	-	-	-	-	-	-	-	-	-	■	ms4-lf
	6	■	■	■	■	■	■	-	-	-	-	-	-	-	-	■	ms6-lf
	9	-	■	■	■	■	■	-	-	-	-	-	-	-	-	■	ms9-lf
	12	-	■	■	-	■	■	-	-	-	-	-	-	-	-	■	ms12-lf
Fine and micro filters MS-LFM	4	■	■	■	■	■	-	-	-	-	-	-	-	-	-	■	ms4-lfm
	6	■	■	■	■	■	■	-	-	-	-	-	-	-	-	■	ms6-lfm
	9	-	■	■	■	■	■	-	-	-	-	-	-	-	-	■	ms9-lfm
	12	-	■	■	-	■	■	-	-	-	-	-	-	-	-	■	ms12-lfm
Activated carbon filters MS-LFX	4	■	■	-	-	-	-	-	-	-	-	-	-	-	-	■	ms4-lfx
	6	■	■	-	-	-	-	-	-	-	-	-	-	-	-	■	ms6-lfx
	9	-	■	-	-	-	-	-	-	-	-	-	-	-	-	■	ms9-lfx
	12	-	■	-	-	-	-	-	-	-	-	-	-	-	-	■	ms12-lfx
Water separators MS-LWS	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	6	-	■	-	-	■	■	-	-	-	-	-	-	-	-	■	ms6-lws
	9	-	■	-	-	■	■	-	-	-	-	-	-	-	-	■	ms9-lws
	12	-	■	-	-	■	■	-	-	-	-	-	-	-	-	■	ms12-lws

# Pressure regulators MS-LR/LRB/LRP/LRPB/LRE, MS series



Product range overview – MS series service units

Type	Size	Pneumatic connection in housing	Connecting plate	Pressure regulation range [bar]						Supply voltage			
				0.05 ... 0.7	0.05 ... 2.5	0.1 ... 4	0.3 ... 7	0.1 ... 12	0.5 ... 16	24 V DC, connection pattern to EN 175301	24 V DC, connection M12 to IEC 61076-2-101	110 V AC, connection pattern to EN 175301	230 V AC, connection pattern to EN 175301
Code			AG...	D2	D4	D5	D6	D7	D8	V24	V24P	V110	V230
<b>Individual devices</b>													
Pressure regulators <b>MS-LR</b>		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	-	-	■	■	■	■	-	-	-
		9	G3/4, G1	G1/2, G3/4, G1, G1 1/4, G1 1/2	-	-	■	■	■	■	-	-	-
		12	-	G1, G1 1/4, G1 1/2, G2	-	-	-	■	■	■	-	-	-
Pressure regulators <b>MS-LRB</b>		4	G1/4	G1/8, G1/4, G3/8	-	-	■	■	■	-	-	-	-
		6	G1/2	G1/4, G3/8, G1/2, G3/4	-	-	■	■	■	■	-	-	-
		9	-	-	-	-	-	-	-	-	-	-	-
		12	-	-	-	-	-	-	-	-	-	-	-
Precision pressure regulators <b>MS-LRP</b>		4	-	-	-	-	-	-	-	-	-	-	-
		6	G1/4, G3/8, G1/2	G1/4, G3/8, G1/2, G3/4	■	■	■	-	■	-	-	-	-
		9	-	-	-	-	-	-	-	-	-	-	-
		12	-	-	-	-	-	-	-	-	-	-	-
Precision pressure regulators <b>MS-LRPB</b>		4	-	-	-	-	-	-	-	-	-	-	-
		6	G1/2	G1/4, G3/8, G1/2, G3/4	■	■	■	-	■	-	-	-	-
		9	-	-	-	-	-	-	-	-	-	-	-
		12	-	-	-	-	-	-	-	-	-	-	-
Electrical pressure regulators <b>MS-LRE</b>		4	-	-	-	-	-	-	-	-	-	-	-
		6	G1/4, G3/8, G1/2	G1/4, G3/8, G1/2, G3/4	-	-	■	■	■	■	-	-	-
		9	-	-	-	-	-	-	-	-	-	-	-
		12	-	-	-	-	-	-	-	-	-	-	-
Lubricators <b>MS-LOE</b>		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	-	-	-	-	-	-	-	-	-
		9	G3/4, G1	G1/2, G3/4, G1, G1 1/4, G1 1/2	-	-	-	-	-	-	-	-	-
		12	-	G1, G1 1/4, G1 1/2, G2	-	-	-	-	-	-	-	-	-
On-off valves, manually actuated <b>MS-EM(1)</b>		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	-	-	-	-	-	-	-	-	-
		9	G3/4, G1	G1/2, G3/4, G1, G1 1/4, G1 1/2	-	-	-	-	-	-	-	-	-
		12	-	G1, G1 1/4, G1 1/2, G2	-	-	-	-	-	-	-	-	-
On-off valves, electrically actuated <b>MS-EE</b>		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	-	-	-	-	-	-	■	-	■
		9	G3/4, G1	G1/2, G3/4, G1, G1 1/4, G1 1/2	-	-	-	-	-	-	■	■	■
		12	-	G1, G1 1/4, G1 1/2, G2	-	-	-	-	-	-	■	■	■
Soft-start valves, pneumatically actuated <b>MS-DL</b>		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	-	-	-	-	-	-	-	-	-
		9	-	-	-	-	-	-	-	-	-	-	-
		12	-	G1, G1 1/4, G1 1/2, G2	-	-	-	-	-	-	-	-	-
Soft-start valves, electrically actuated <b>MS-DE</b>		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	-	-	-	-	-	-	■	-	■
		9	-	-	-	-	-	-	-	-	-	-	-
		12	-	G1, G1 1/4, G1 1/2, G2	-	-	-	-	-	-	■	■	■

# Pressure regulators MS-LR/LRB/LRP/LRPB/LRE, MS series



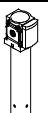



Product range overview – MS series service units

Type	Size	Bowl guard		Pressure indicator				Security			Options		→ Page/ Internet
		Plastic bowl with plastic bowl guard	Metal bowl	Cover plate (without pressure gauge)	Integrated MS pressure gauge	Adapter plate for EN pressure gauge G1/8	Adapter plate for EN pressure gauge G1/4	Pressure sensor	Rotary knob with detent, lockable via accessories	Rotary knob with integrated lock	Silencer	Flow direction from right to left	
Code		R	U	VS	AG	A8	A4	AD...	AS	E11	S	Z	
<b>Individual devices</b>													
Pressure regulators <b>MS-LR</b>	4	-	-	■	■	■	■	■	■	■	-	■	8
	6	-	-	■	■	-	■	■	■	■	-	■	8
	9	-	-	■	■	-	■	■	■	■	-	■	76
	12	-	-	■	■	-	■	-	■	■	-	■	88
Pressure regulators <b>MS-LRB</b>	4	-	-	■	■	■	■	■	■	■	-	■	22
	6	-	-	■	■	-	■	■	■	■	-	■	22
	9	-	-	-	-	-	-	-	-	-	-	-	-
	12	-	-	-	-	-	-	-	-	-	-	-	-
Precision pressure regulators <b>MS-LRP</b>	4	-	-	-	-	-	-	-	-	-	-	-	-
	6	-	-	■	-	■	■	■	■	■	-	■	36
	9	-	-	-	-	-	-	-	-	-	-	-	-
	12	-	-	-	-	-	-	-	-	-	-	-	-
Precision pressure regulators <b>MS-LRPB</b>	4	-	-	-	-	-	-	-	-	-	-	-	-
	6	-	-	■	-	■	■	■	■	■	-	■	50
	9	-	-	-	-	-	-	-	-	-	-	-	-
	12	-	-	-	-	-	-	-	-	-	-	-	-
Electrical pressure regulators <b>MS-LRE</b>	4	-	-	-	-	-	-	-	-	-	-	-	-
	6	-	-	■	■	-	■	-	-	-	-	■	66
	9	-	-	-	-	-	-	-	-	-	-	-	-
	12	-	-	-	-	-	-	-	-	-	-	-	-
Lubricators <b>MS-LOE</b>	4	■	■	-	-	-	-	-	-	-	-	■	ms4-loe
	6	■	■	-	-	-	-	-	-	-	-	■	ms6-loe
	9	-	■	-	-	-	-	-	-	-	-	■	ms9-loe
	12	-	■	-	-	-	-	-	-	-	-	■	ms12-loe
On-off valves, manually actuated <b>MS-EM(1)</b>	4	-	-	■	■	■	■	■	-	-	■	■	ms4-em1
	6	-	-	■	■	-	■	■	-	-	■	■	ms6-em1
	9	-	-	■	■	-	■	-	-	-	■	■	ms9-em
	12	-	-	■	■	-	■	-	-	-	■	■	ms12-em
On-off valves, electrically actuated <b>MS-EE</b>	4	-	-	■	■	■	■	■	-	-	■	■	ms4-ee
	6	-	-	■	■	-	■	■	-	-	■	■	ms6-ee
	9	-	-	■	■	-	■	-	-	-	■	■	ms9-ee
	12	-	-	■	■	-	■	-	-	-	■	■	ms12-ee
Soft-start valves, pneumatically actuated <b>MS-DL</b>	4	-	-	■	■	■	■	■	-	-	-	■	ms4-dl
	6	-	-	■	■	-	■	■	-	-	-	■	ms6-dl
	9	-	-	-	-	-	-	-	-	-	-	-	-
	12	-	-	■	■	-	■	-	-	-	-	■	ms12-dl
Soft-start valves, electrically actuated <b>MS-DE</b>	4	-	-	■	■	■	■	■	-	-	-	■	ms4-de
	6	-	-	■	■	-	■	■	-	-	-	■	ms6-de
	9	-	-	-	-	-	-	-	-	-	-	-	-
	12	-	-	■	■	-	■	-	-	-	-	■	ms12-de

# Pressure regulators MS-LR/LRB/LRP/LRPB/LRE, MS series

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Product range overview – MS series service units

Type	Size	Pneumatic connection in housing	Connecting plate	Performance Level		Supply voltage				
				Category 1, 1-channel	Category 4, 2-channel with self-monitoring	24 V DC, connection pattern to EN 175301	24 V DC, connection M12 to IEC 61076-2-101 / to EN 60947-5-2	110 V AC, connection pattern to EN 175301	230 V AC, connection pattern to EN 175301	
Code			AG...	C	E	V24	V24P	V110	V230	
<b>Individual devices</b>										
Soft start and exhaust valves <b>MS-SV-C</b>		4	–							
		6	G $\frac{1}{2}$	G $\frac{1}{4}$ , G $\frac{3}{8}$ , G $\frac{1}{2}$ , G $\frac{3}{4}$	■	–	■	■	■	■
		9	G $\frac{3}{4}$ , G1	G $\frac{1}{2}$ , G $\frac{3}{4}$ , G1, G1 $\frac{1}{4}$ , G1 $\frac{1}{2}$	■	–	■	■	■	■
		12	–							
Soft start and exhaust valves <b>MS-SV-E</b>		4	–							
		6	G $\frac{1}{2}$	G $\frac{1}{4}$ , G $\frac{3}{8}$ , G $\frac{1}{2}$ , G $\frac{3}{4}$	–	■	■	–	–	–
		9	–							
		12	–							
Membrane air dryers <b>MS-LDM1</b>		4	G $\frac{1}{8}$ , G $\frac{1}{4}$	G $\frac{1}{8}$ , G $\frac{1}{4}$ , G $\frac{3}{8}$	–	–	–	–	–	–
		6	G $\frac{1}{4}$ , G $\frac{3}{8}$ , G $\frac{1}{2}$	G $\frac{1}{4}$ , G $\frac{3}{8}$ , G $\frac{1}{2}$ , G $\frac{3}{4}$	–	–	–	–	–	–
		9	–							
		12	–							
Branching modules <b>MS-FRM</b>		4	G $\frac{1}{8}$ , G $\frac{1}{4}$	G $\frac{1}{8}$ , G $\frac{1}{4}$ , G $\frac{3}{8}$	–	–	–	–	–	–
		6	G $\frac{1}{4}$ , G $\frac{3}{8}$ , G $\frac{1}{2}$	G $\frac{1}{4}$ , G $\frac{3}{8}$ , G $\frac{1}{2}$ , G $\frac{3}{4}$	–	–	–	–	–	–
		9	G $\frac{3}{4}$ , G1	G $\frac{1}{2}$ , G $\frac{3}{4}$ , G1, G1 $\frac{1}{4}$ , G1 $\frac{1}{2}$	–	–	–	–	–	–
		12	–	G1, G1 $\frac{1}{4}$ , G1 $\frac{1}{2}$ , G2	–	–	–	–	–	–
Distributor blocks <b>MS-FRM-FRZ</b>		4	G $\frac{1}{4}$	–	–	–	–	–	–	
		6	G $\frac{1}{2}$	–	–	–	–	–	–	
		9	–							
		12	–							
Flow sensors <b>SFAM</b>		4	–							
		6	G $\frac{1}{2}$	G $\frac{1}{2}$	–	–	–	–	–	
		9	–	G1, G1 $\frac{1}{2}$	–	–	–	–	–	
		12	–							

# Pressure regulators MS-LR/LRB/LRP/LRPB/LRE, MS series

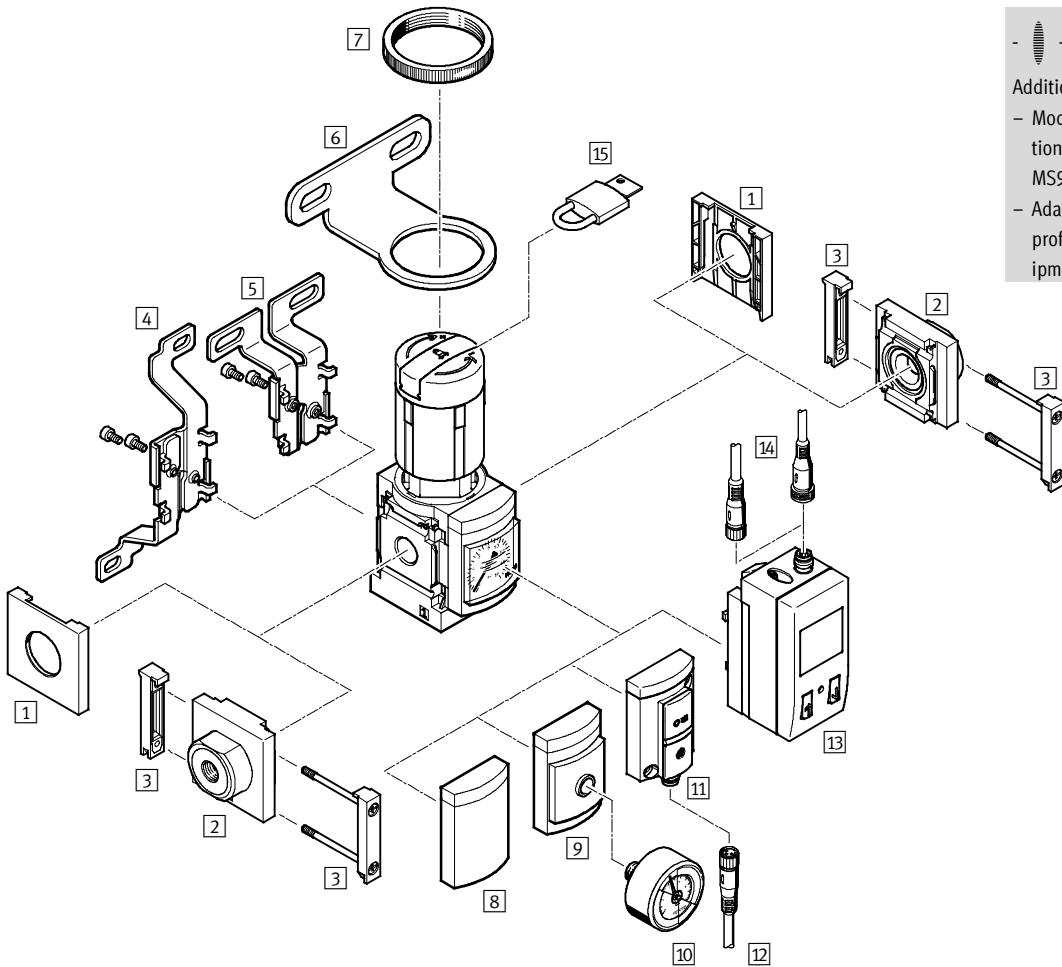
Product range overview – MS series service units

Type	Size	Bowl guard		Pressure indicator				Switch output			Options		→ Page/ Internet
		Plastic bowl with plastic bowl guard	Metal bowl	Cover plate (without pressure gauge)	Integrated MS pressure gauge	Adapter plate for EN pressure gauge G1/8	Adapter plate for EN pressure gauge G1/4	Pressure sensor	2x PNP or NPN, 1 analogue output 4 ... 20 mA	2x PNP or NPN, 1 analogue output 0 ... 10 V	Silencer	Flow direction from right to left	
Code		R	U	VS	AG	A8	A4	AD...	2SA	2SV	S	Z/R	
<b>Individual devices</b>													
Soft start and exhaust valves <b>MS-SV-C</b>	4	-											-
	6	-	-	■	■	-	■	■	-	-	■	■	ms6-sv
	9	-	-	■	■	-	■	■	-	-	■	■	ms9-sv
	12	-											-
Soft start and exhaust valves <b>MS-SV-E</b>	4	-											-
	6	-	-	■	■	-	■	■	-	-	■	■	ms6-sv
	9	-											-
	12	-											-
Membrane air dryers <b>MS-LDM1</b>	4	-	■	-	-	-	-	-	-	-	-	■	ms4-ldm1
	6	-	■	-	-	-	-	-	-	-	-	■	ms6-ldm1
	9	-											-
	12	-											-
Branching modules <b>MS-FRM</b>	4	-	-	■	■	■	■	■	-	-	-	■	ms4-frm
	6	-	-	■	■	-	■	■	-	-	-	■	ms6-frm
	9	-	-	■	■	-	■	■	-	-	-	■	ms9-frm
	12	-	-	■	-	-	-	-	-	-	-	-	ms12-frm
Distributor blocks <b>MS-FRM-FRZ</b>	4	-	-	-	-	-	-	-	-	-	-	■	ms4-frm
	6	-	-	-	-	-	-	-	-	-	-	■	ms6-frm
	9	-											-
	12	-											-
Flow sensors <b>SFAM</b>	4	-											-
	6	-	-	-	-	-	-	-	■	■	-	■	sfam-62
	9	-	-	-	-	-	-	-	■	■	-	■	sfam-90
	12	-											-

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

Peripherals overview

### Pressure regulator MS4/MS6-LR



Note

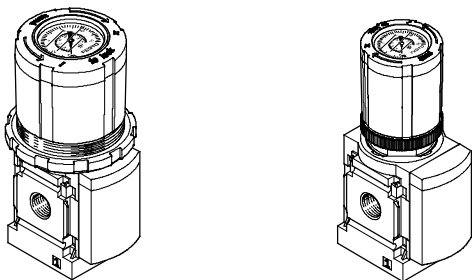
Additional accessories:

- Module connector for combination with size MS4/MS6 or size MS9 → Internet: amv, rmv, armv
- Adapter plate for mounting on profiles → Internet: ipm-80, ipm-40-80, ipm-80-80

### Pressure regulator with rotary knob pressure gauge

MS4-LR-...-DM2

MS4-LR-...-DM1/MS6-LR-...-DM2





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

Peripherals overview

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Mounting attachments and accessories						
		Individual device		Combination		→ Page/Internet
		Without connecting plate	With connecting plate	Without connecting plate	With connecting plate	
1	Cover cap MS4/6-END	■	–	■	–	ms4-end, ms6-end
2	Connecting plate MS4/6-AG...	–	■	–	■	ms4-ag, ms6-ag
3	Module connector MS4/6-MV	–	■	■	■	ms4-mv, ms6-mv
4	Mounting bracket MS4/6-WB	■	■	–	–	ms4-wb, ms6-wb
5	Mounting bracket MS4-WBM	■	■	–	–	ms4-wbm
6	Mounting bracket MS4/6-WR	■	■	–	–	ms4-wr, ms6-wr
7	Knurled nut (included in scope of delivery) MS-LR	■	■	–	–	–
8	Cover plate VS	■	■	■	■	20
9	Adapter plate for EN pressure gauge 1/8/1/4 A8/A4	■	■	■	■	20
10	Pressure gauge MA	■	■	■	■	98
11	Pressure sensor without display AD7 ... AD10	■	■	■	■	20
12	Connecting cable NEBU-M8...-LE3	■	■	■	■	98
13	Pressure sensor with display AD1 ... AD4	■	■	■	■	20
14	Connecting cable NEBU-M8...-LE3/NEBU-M12...-LE4	■	■	■	■	98
15	Padlock LRVS-D	■	■	■	■	98
–	Mounting bracket MS4/6-WP/WPB/WPE/WPM	–	■	■	■	ms4-wp, ms6-wp

**New**  
**Variant EX4, UL1**

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

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Type codes

		MS	6	-	LR	-	1/2	-	D5	-	AS
<b>Series</b>											
MS	Standard service unit										
<b>Size</b>											
4	Grid dimension 40 mm										
6	Grid dimension 62 mm										
<b>Service function</b>											
LR	Pressure regulator										
<b>Connection size</b>											
<b>MS4</b>											
1/8	Thread G1/8										
1/4	Thread G1/4										
<b>MS6</b>											
1/4	Thread G1/4										
3/8	Thread G3/8										
1/2	Thread G1/2										
<b>Pressure regulation range</b>											
D5	0.3 ... 4 bar										
D6	0.3 ... 7 bar										
D7	0.5 ... 12 bar										
<b>Security</b>											
AS	Standard rotary knob with detent, lockable via accessories										

**Additional variants can be ordered using the modular system → 20**

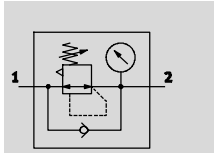
- Connecting plates
- Pressure regulation range
- Pressure gauge alternatives
- Alternative pressure gauge scale
- Secondary venting
- Rotary knob alternative
- Alternative mounting position
- Security
- Type of mounting
- EU certification
- UL certification
- Alternative flow direction





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

Technical data

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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](http://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 $\frac{1}{4}$
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] D6 [bar] D7 [bar] D8 [bar]	0.3 ... 4, manually operated <sup>1)</sup> 0.3 ... 7, manually operated <sup>1)</sup> 0.5 ... 12, manually operated (0.5 ... 10 with pressure sensor AD... or with UL certification) <sup>1)</sup> - 0.5 ... 16, manually operated (0.5 ... 10 with UL certification)
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

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

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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 <sup>2)</sup>	2,100 <sup>2)</sup>	2,400 <sup>2)</sup>	5,500 <sup>2)</sup>	7,500 <sup>2)</sup>
	D6	1,150	1,800	3,000	5,800	6,500
	D7	1,000	1,700 <sup>3)</sup>	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) <sup>1)</sup>	
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) <sup>2)</sup>	
Temperature of medium [°C]	-10 ... +60 (0 ... +50) <sup>2)</sup>	
Storage temperature [°C]	-10 ... +60	
Corrosion resistance class CRC <sup>3)</sup>	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 2 according 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.

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

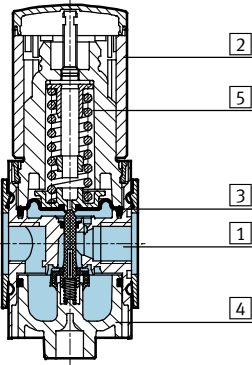
## Pressure regulators MS4/MS6-LR, MS series

Technical data

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### Materials

Sectional view



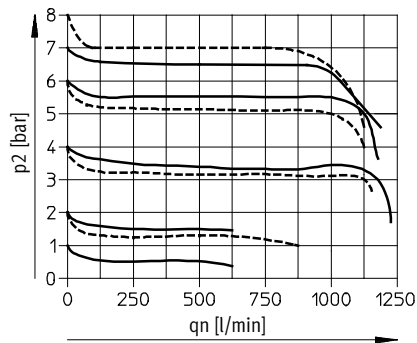
### Pressure regulator

1	Housing	Die-cast aluminium
2	Rotary knob	PA/POM
	Rotary knob with integrated lock E11	Aluminium
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 $p_2$

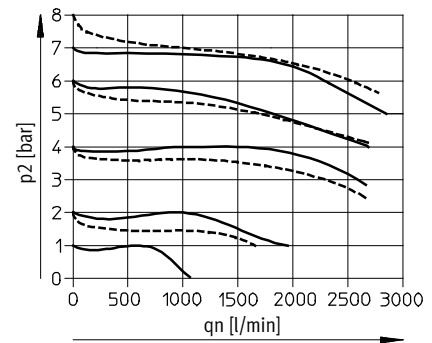
MS4-LR-1/8

Input pressure  $p_1 = 10$  bar



— D6: 0.3 ... 7 bar  
- - - D7: 0.5 ... 12 bar<sup>1)</sup>

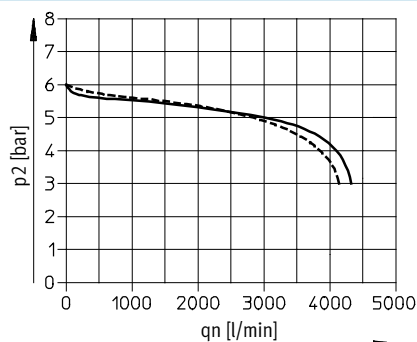
MS4-LR-1/4



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

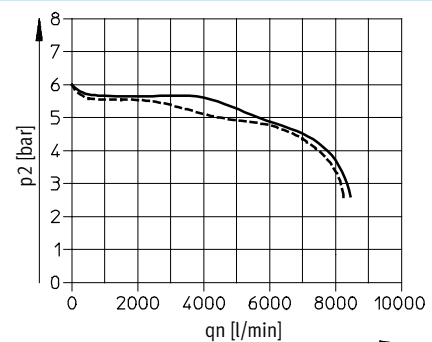
MS6-LR-1/4

Input pressure  $p_1 = 10$  bar



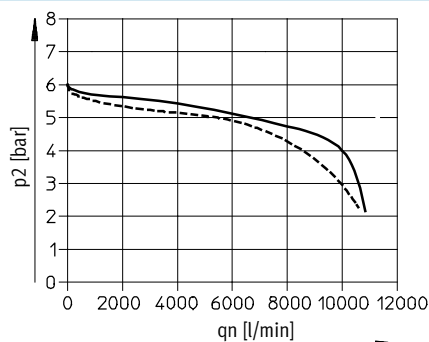
— D6: 0.3 ... 7 bar  
- - - D7: 0.5 ... 12 bar

MS6-LR-3/8



MS6-LR-1/2

Input pressure  $p_1 = 10$  bar



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

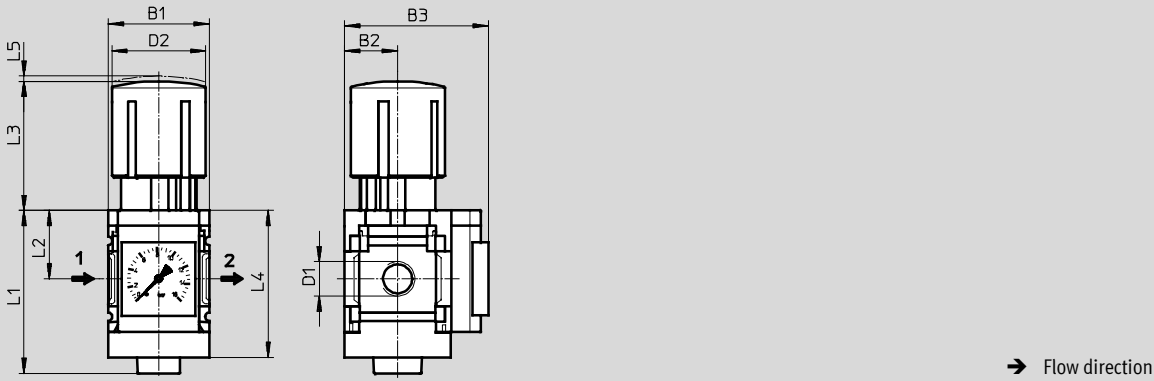
## Pressure regulators MS4/MS6-LR, MS series

Technical data

### Dimensions – Standard

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

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



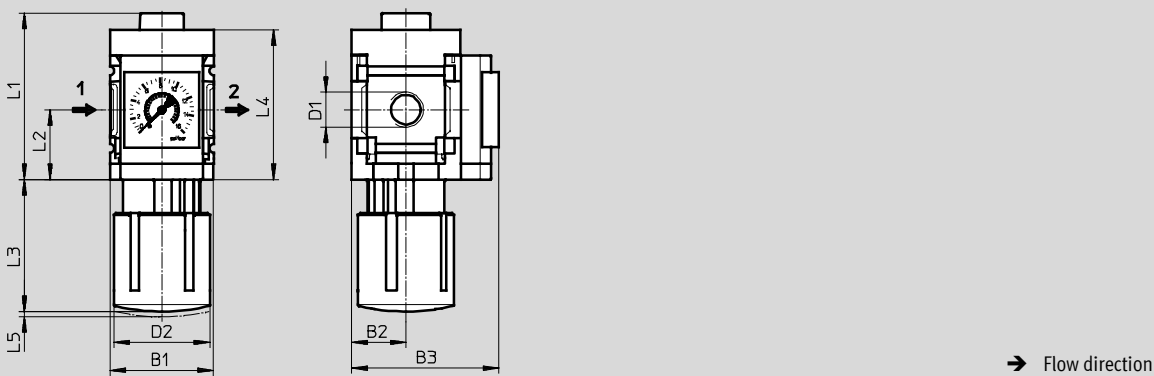
Type	B1	B2	B3		D1	D2	L1	L2	L3	L4	L5
			Standard scale	Red-green scale							
MS4-LR-1/8	40	21	57	58.5	G1/8	37.2	64.4	27	51.1	58	2
MS4-LR-1/4					G1/4						
MS6-LR-1/4	62	31	77	78.5	G1/4	51	93	39	86	84	5
MS6-LR-3/8					G3/8						
MS6-LR-1/2					G1/2						

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

### Dimensions – Alternative mounting position

Download CAD data → [www.festo.com](http://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	2
MS4-LR-1/4-...-KD				G1/4						
MS6-LR-1/4-...-KD	62	31	77	G1/4	51	93	39	86	84	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

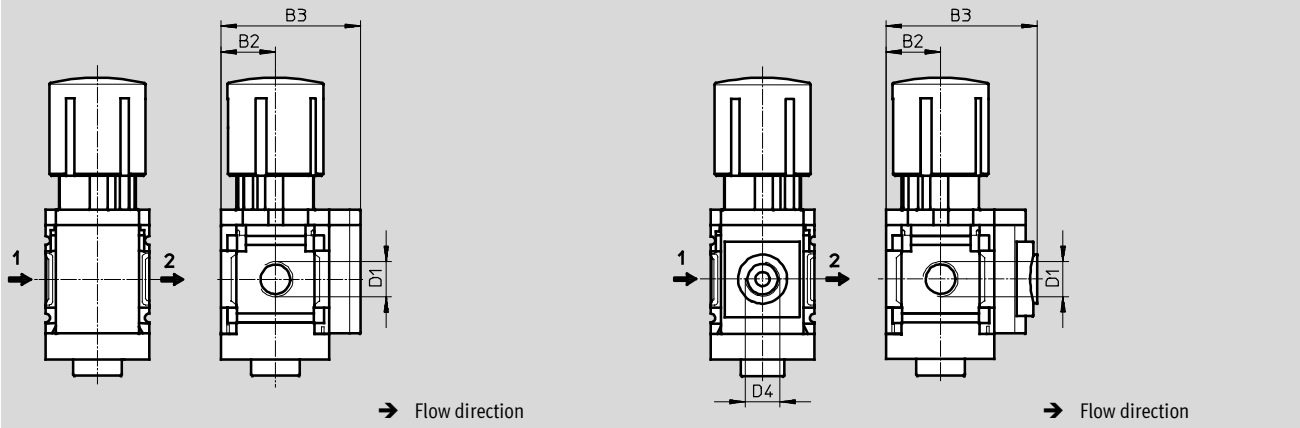
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### Dimensions – Pressure gauge alternatives

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

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

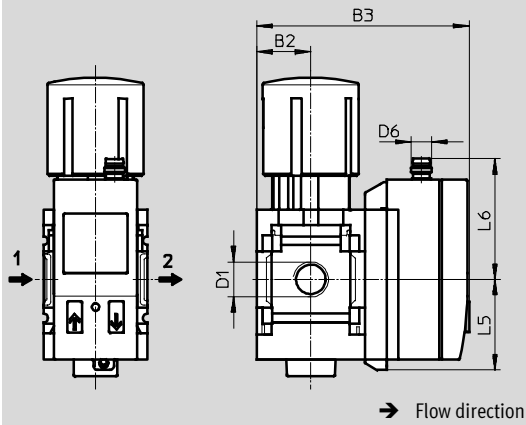
Technical data

### Dimensions – Pressure gauge alternatives

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

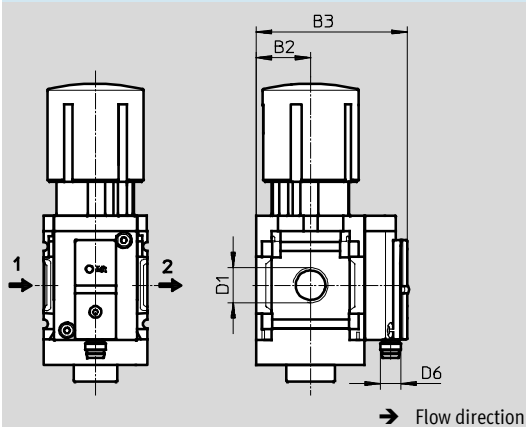
Variant AD3:  
SDE1-D10-G2-MS-L-PI-M12 with  
4-pin plug M12x1, 1 switching  
output PNP and 4 ... 20 mA  
analogue

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

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### Dimensions – Rotary knob

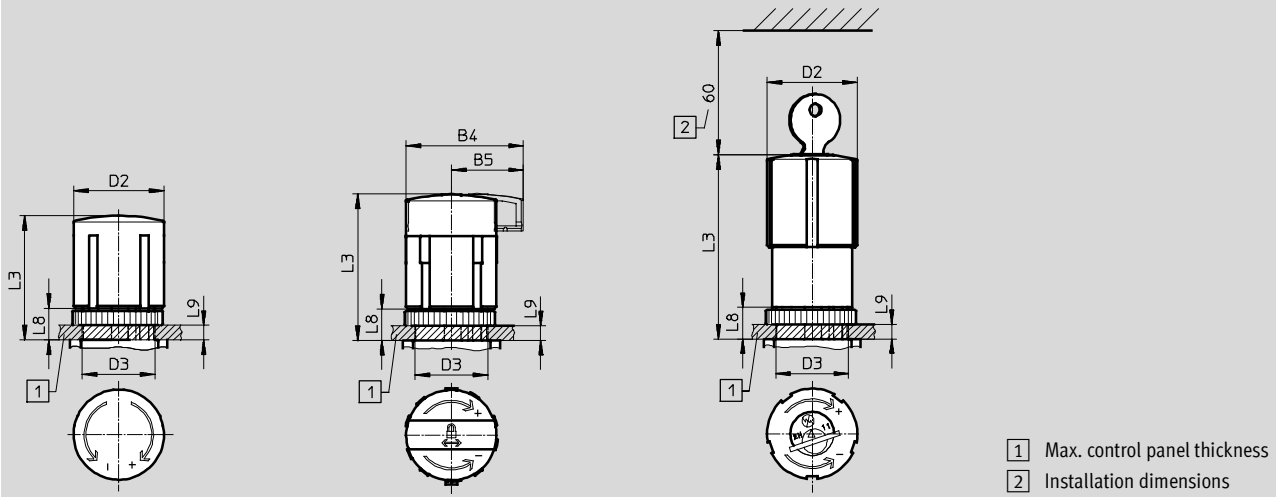
Download CAD data → [www.festo.com](http://www.festo.com)

For installation into control panel

Standard rotary knob with detent

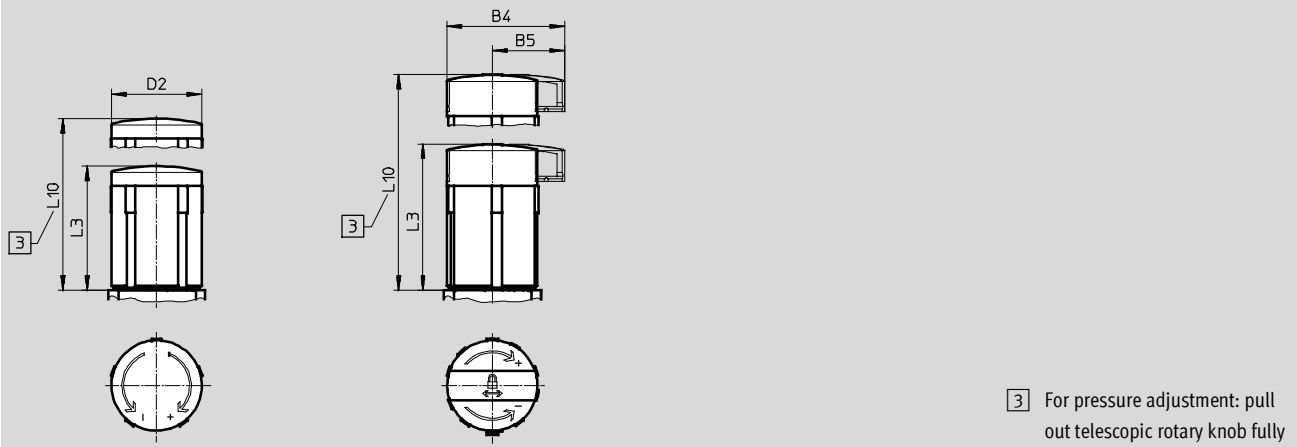
Standard rotary knob with detent,  
lockable via accessories AS

Rotary knob with integrated lock  
E11



Long rotary knob with detent LD

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



Type	B4	B5	D2	D3 +1	L3	L8	L9	L10
MS4-LR-...	-	-	37.2	30	51.1	13	6	-
MS4-LR-...-AS	48.3	29.7			60.2			
MS4-LR-...-E11	-	-			76			
MS4-LR-...-LD	-	-	37.2	-	51.1	-	-	76.8
MS4-LR-...-LD-AS	48.3	29.7			60.2			85.7
MS6-LR-...	-	-	51	44	86	22	14	-
MS6-LR-...-AS	64.4	39			95.5			
MS6-LR-...-E11	-	-			112.1			
MS6-LR-...-LD	-	-	51	-	86	-	-	139
MS6-LR-...-LD-AS	64.4	39			95.5			148.5

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

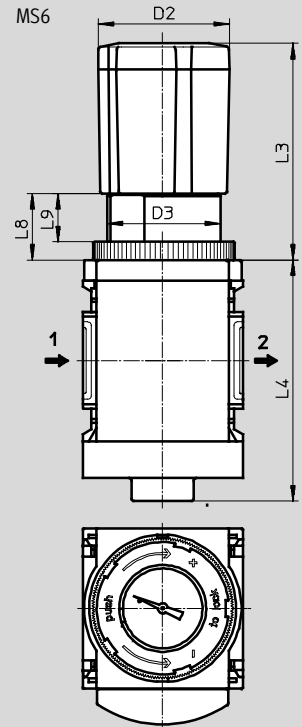
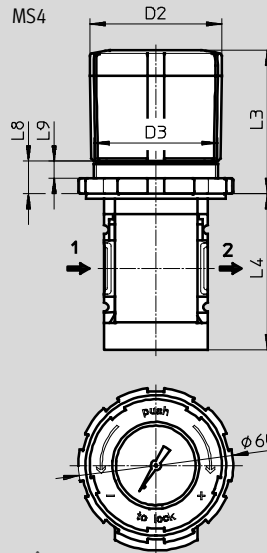
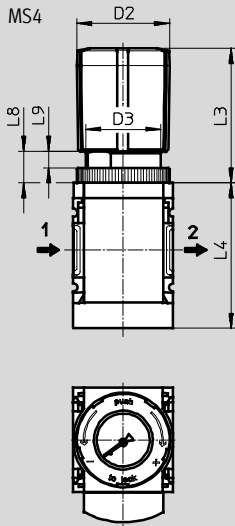
Technical data

**Dimensions – Rotary knob with pressure gauge**

Download CAD data → [www.festo.com](http://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	51.1	M48x1.5	55.7	60.5	13	6.6
MS6-LR-...-DM2	51	M44x1	84	93	26	19

## 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

**New**  
**Variant EX4, UL1**

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

Ordering data – Modular products



M Mandatory data						O Options →
Module No.	Series	Size	Function	Connection size	Pressure range/operation	Pressure gauge alternatives
527690 527663	MS	4 6	LR	1/8, 1/4, 3/8, 1/2, AGA, AGB, AGC, AGD, AGE	D5 D6 D7 D8	VS, A8, A4, RG, AD1, AD2, AD3, AD4, AD7, AD8, AD9, AD10
<b>Order example</b>						
527690	MS	4	- LR	- AGB	- D6	AD3

Ordering table							
Grid dimension	[mm]	40	62	Condi- tions	Code	Enter code	
M	Module No.	527690		527663			
	Series	Standard			MS		MS
	Size	4			...		
	Function	Pressure regulator			-LR		-LR
	Connection size	Thread G1/8	-	1	-1/8		
		Thread G1/4	Thread G1/4	1	-1/4		
		-	Thread G3/8	1	-3/8		
		-	Thread G1/2	1	-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	
	Pressure range/operation	0.3 ... 4 bar, manually operated			-D5		
		0.3 ... 7 bar, manually operated			-D6		
		0.5 ... 12 bar, manually operated			-D7		
		-	0.5 ... 16 bar, manually operated		1 4	-D8	
O	Pressure gauge alternatives	Cover plate			-VS		
		Adapter plate for EN pressure gauge 1/8, without pressure gauge	-			-A8	
		Adapter plate for EN pressure gauge 1/4, without pressure gauge				-A4	
		Integrated pressure gauge, red-green scale			2 3 4	-RG	
		Pressure sensor with display, plug M8, 1 switching output PNP, 3-pin			1 2 5	-AD1	
		Pressure sensor with display, plug M8, 1 switching output NPN, 3-pin			1 2 5	-AD2	
		Pressure sensor with display, plug M12, 1 switching output PNP, 4-pin, analogue output 4 ... 20 mA			1 2 5	-AD3	
		Pressure sensor with display, plug M12, 1 switching output NPN, 4-pin, analogue output 4 ... 20 mA			1 2 5	-AD4	
		Pressure sensor without display, plug M8, threshold value comparator, PNP, N/O contact			1 2 5	-AD7	
		Pressure sensor without display, plug M8, threshold value comparator, PNP, N/C contact			1 2 5	-AD8	
		Pressure sensor without display, plug M8, window comparator, PNP, N/O contact			1 2 5	-AD9	
		Pressure sensor without display, plug M8, window comparator, PNP, N/C contact			1 2 5	-AD10	

1 1/8, 1/4, 3/8, 1/2, D8, AD1 ... AD4, AD7 ... AD10, DM1, DM2, KD, E11, WPM  
Not with EU certification EX4

3 RG, OS, KD, AS  
Not with rotary knob alternative DM1

2 RG, AD1 ... AD4, AD7 ... AD10, OS, KD, AS, WR, WB  
MS4: Not with rotary knob alternative DM2

4 D8, RG, OS, KD, AS  
MS6: Not with rotary knob alternative DM2

**Transfer order code**

	MS		-	LR		-		-		-	
--	----	--	---	----	--	---	--	---	--	---	--

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

Ordering data – Modular products

**FESTO**

→ <input type="checkbox"/> Options								
Alternative pressure gauge scale	Secondary venting	Rotary knob alternative	Alternative mounting position	Security	Type of mounting	EU certification	UL certification	Flow direction
PSI MPA	OS	LD DM1 DM2	KD	AS E11	WR WP, WPM WB, WBM	EX4	UL1	Z
-	-	-	-	- <b>AS</b> -	-	-	-	-

Ordering table						
Grid dimension	[mm]	40	62	Condi- tions	Code	Enter code
<input type="checkbox"/> Alternative pressure gauge scale ↓	psi			<input type="checkbox"/> 6	<b>-PSI</b>	
	MPa			<input type="checkbox"/> 7	<b>-MPA</b>	
Secondary venting	Without secondary venting			<input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4	<b>-OS</b>	
Rotary knob alternative	Long rotary knob			<input type="checkbox"/> 8	<b>-LD</b>	
	Rotary knob pressure gauge, small	-		<input type="checkbox"/> 1 <input type="checkbox"/> 8 <input type="checkbox"/> 9	<b>-DM1</b>	
	Rotary knob pressure gauge, large			<input type="checkbox"/> 1 <input type="checkbox"/> 8 <input type="checkbox"/> 9	<b>-DM2</b>	
Alternative mounting position	Rotary knob underneath			<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 10	<b>-KD</b>	
	Security	Lockable via accessories		<input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4	<b>-AS</b>	
		With integrated lock		<input type="checkbox"/> 1	<b>-E11</b>	
Type of mounting	Mounting bracket with knurled nut for regulator head			<input type="checkbox"/> 2 <input type="checkbox"/> 11	<b>-WR</b>	
	Mounting bracket			<input type="checkbox"/> 12	<b>-WP</b>	
	Mounting bracket			<input type="checkbox"/> 1 <input type="checkbox"/> 12	<b>-WPM</b>	
	Mounting bracket			<input type="checkbox"/> 2	<b>-WB</b>	
	Mounting bracket	-			<b>-WBM</b>	
EU certification	II 2GD to EU Directive 94/9/EG				<b>-EX4</b>	
UL certification	cULus, ordinary location for Canada and USA				<b>-UL1</b>	
Flow direction	Flow direction from right to left				<b>-Z</b>	

**AD1 ... AD4, AD7 ... AD10**

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

**PSI**

Not with pressure gauge alternatives VS, A8, A4, RG, AD1 ... AD4, AD7 ... AD10

**MPA**

Not with pressure gauge alternatives VS, A8, A4, AD1 ... AD4, AD7 ... AD10  
Not with rotary knob alternative DM1, DM2

**LD, DM1, DM2**

Not with integrated lock E11

**DM1, DM2**

Can only be combined with one pressure gauge alternative VS, A8, A4, AD1 ... AD4, AD7 ... AD10

**KD**

Not with pressure gauge alternative RG  
Not with alternative pressure gauge scale MPA  
Not with mounting type WP

**WR**

Not with long rotary knob LD

**WP, WPM**

Only with connecting plate AGA, AGB, AGC, AGD, AGE

**Transfer order code**

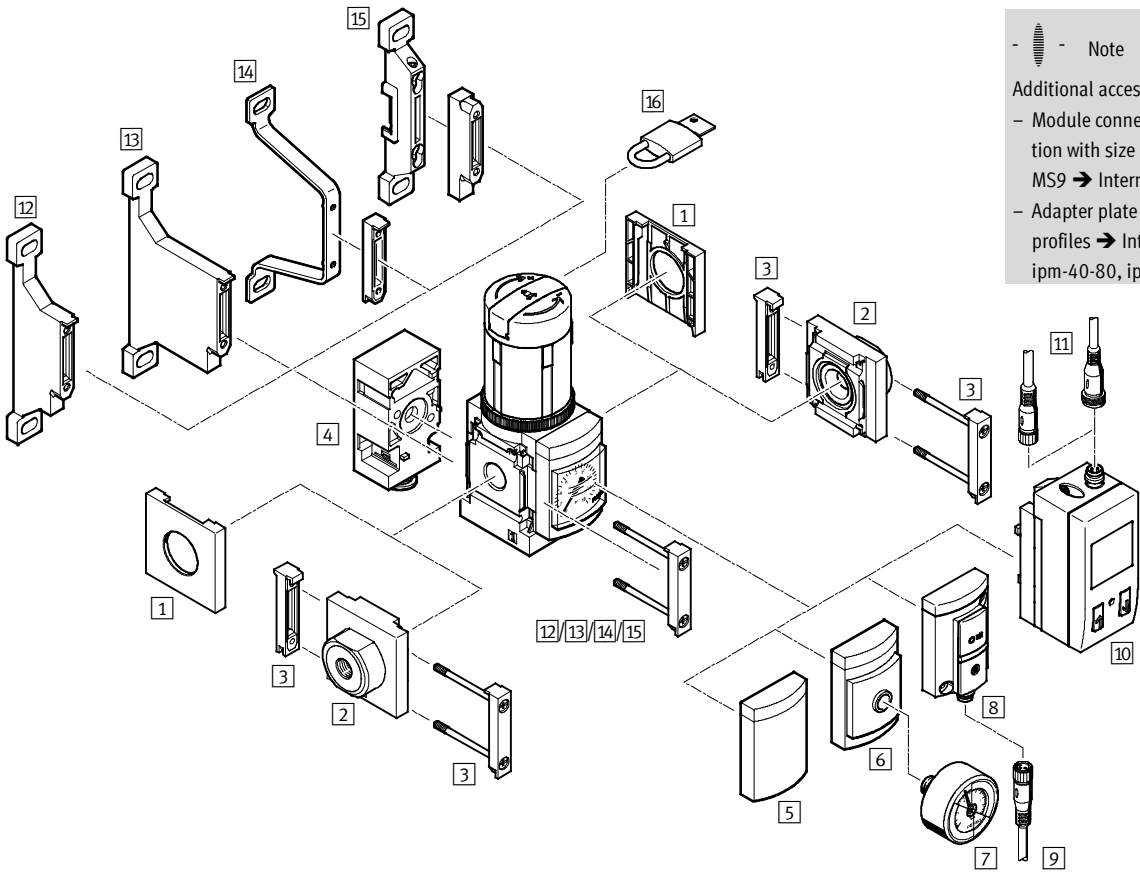
-  -  -  -  -  -  -  -  -

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

Peripherals overview

**FESTO**

### Pressure regulator MS4/MS6-LRB with pressure output to the rear



Note

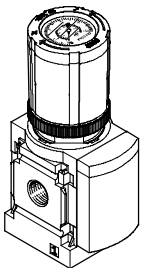
Additional accessories:

- Module connector for combination with size MS4/MS6 or size MS9 → Internet: amv, rmv, armv
- Adapter plate for mounting on profiles → Internet: ipm-80, ipm-40-80, ipm-80-80

### Pressure regulator with rotary knob pressure gauge

MS4-LRB...-DM1/

MS6-LRB...-DM2



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

Peripherals overview

Mounting attachments and accessories						
		Individual device		Combination		→ Page/Internet
		Without connecting plate	With connecting plate	Without connecting plate	With connecting plate	
1	Cover cap MS4/6-END	■	–	■	–	ms4-end, ms6-end
2	Connecting plate MS4/6-AG...	–	■	–	■	ms4-ag, ms6-ag
3	Module connector MS4/6-MV	–	■	■	■	ms4-mv, ms6-mv
4	Angled outlet block B...	■	■	■	■	34
5	Cover plate VS	■	■	■	■	34
6	Adapter plate for EN pressure gauge 1/8/1/4 A8/A4	■	■	■	■	34
7	Pressure gauge MA	■	■	■	■	98
8	Pressure sensor without display AD7 ... AD10	■	■	■	■	34
9	Connecting cable NEBU-M8...-LE3	■	■	■	■	98
10	Pressure sensor with display AD1 ... AD4	■	■	■	■	34
11	Connecting cable NEBU-M8...-LE3/NEBU-M12...-LE4	■	■	■	■	98
12	Mounting bracket MS4/6-WP	–	■	■	■	ms4-wp, ms6-wp
13	Mounting bracket MS4/6-WPB	–	■	■	■	ms4-wp, ms6-wp
14	Mounting bracket MS4/6-WPE	–	■	■	■	ms4-wp, ms6-wp
15	Mounting bracket MS4/6-WPM	–	■	■	■	ms4-wp, ms6-wp
16	Padlock LRVS-D	■	■	■	■	98

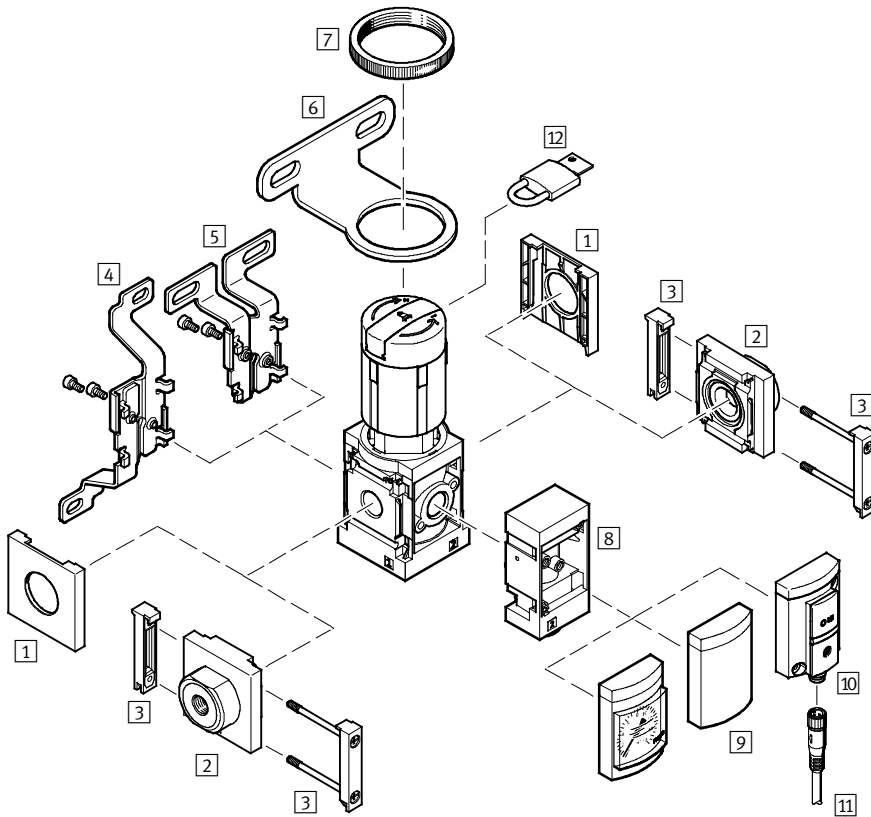
**New**  
**Variant EX4, UL1**

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

Peripherals overview

**FESTO**

**Pressure regulator MS4/MS6-LRB with pressure output to the front**



Note

Additional accessories:

- Module connector for combination with size MS4/MS6 or size MS9 → Internet: amv, rmv, armv
- Adapter plate for mounting on profiles → Internet: ipm-80, ipm-40-80, ipm-80-80

Mounting attachments and accessories						
		Individual device		Combination		→ Page/Internet
		Without connecting plate	With connecting plate	Without connecting plate	With connecting plate	
1	Cover cap MS4/6-END	■	-	■	-	ms4-end, ms6-end
2	Connecting plate MS4/6-AG...	-	■	-	■	ms4-ag, ms6-ag
3	Module connector MS4/6-MV	-	■	■	■	ms4-mv, ms6-mv
4	Mounting bracket MS4/6-WB	■	■	-	-	ms4-wb, ms6-wb
5	Mounting bracket MS4-WBM	■	■	-	-	ms4-wbm
6	Mounting bracket MS4/6-WR	■	■	-	-	ms4-wr, ms6-wr
7	Knurled nut (included in scope of delivery) MS-LR	■	■	-	-	-
8	Angled outlet block B...	■	■	■	■	34
9	Cover plate VS	■	■	■	■	34
10	Pressure sensor without display AD7 ... AD10	■	■	■	■	34
11	Connecting cable NEBU-M8...-LE3	■	■	■	■	98
12	Padlock LRVS-D	■	■	■	■	98



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

**FESTO**

Type codes

		MS	6	-	LRB	-	1/2	-	D7	-		-	AS	-	BD
<b>Series</b>															
MS	Standard service unit														
<b>Size</b>															
4	Grid dimension 40 mm														
6	Grid dimension 62 mm														
<b>Service function</b>															
LRB	Pressure regulator for manifold assembly														
<b>Connection size</b>															
MS4															
1/4	Thread G1/4														
MS6															
1/2	Thread G1/2														
<b>Pressure regulation range</b>															
D5	0.3 ... 4 bar														
D6	0.3 ... 7 bar														
D7	0.5 ... 12 bar														
<b>Pressure gauge alternatives</b>															
	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														
<b>Security</b>															
AS	Standard rotary knob with detent, lockable via accessories														
<b>Pressure output</b>															
	Without angled outlet block														
BD	Angled outlet block QS-8														

Additional variants can be ordered using the modular system → 34

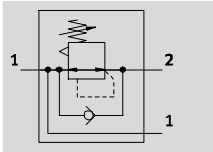
- Connecting plates
- Pressure regulation range
- Pressure gauge alternatives
- Alternative pressure gauge scale
- Secondary venting
- Rotary knob alternative
- Alternative mounting position
- Security
- Pressure output
- Type of mounting
- EU certification
- UL certification
- Alternative flow direction

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

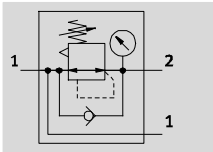
Technical data





**FESTO**

Without pressure gauge



With pressure gauge

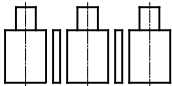


-  Flow rate  
300 ... 7,300 l/min
-  Temperature range  
-10 ... +60 °C
-  Operating pressure  
0.8 ... 20 bar
-  [www.festo.com](http://www.festo.com)

Wearing parts kits  
→ 33




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



- Good regulation characteristics with low hysteresis and primary pressure compensation
- Manifold assembly with through air supply
- For configuring a regulator manifold with independent pressure regulation ranges
- Regulator lock for protecting the values against adjustment
- Available with and without secondary venting
- 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 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	G $\frac{1}{4}$	G $\frac{1}{2}$
Pneumatic connection 2	G $\frac{1}{4}$	G $\frac{1}{2}$
	QS-6	QS-8
	QS-8	QS-10
Constructional design	Directly-actuated diaphragm regulator with through compressed air supply	
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 <sup>1)</sup>
	D6 [bar]	0.3 ... 7, manually operated <sup>1)</sup>
	D7 [bar]	0.5 ... 12, manually operated (0.5 ... 10 with pressure sensor AD... or with UL certification) <sup>1)</sup>
	D8 [bar]	–
Max. hysteresis [bar]	0.25	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 DM1, the pressure regulation range begins at 0.8 bar.

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

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

**FESTO**

Technical data

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 <sup>2)</sup>	300 <sup>2)</sup>	650 <sup>2)</sup>	7,300 <sup>2)</sup>	600 <sup>2)</sup>	750 <sup>2)</sup>
	D6	1,700	350	840	6,300	880	1,000
	D7	1,500 <sup>3)</sup>	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

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) <sup>1)</sup>	0.8 ... 20 (0.8 ... 10) <sup>1)</sup>
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) <sup>2)</sup>	
Temperature of medium [°C]	–10 ... +60 (0 ... +50) <sup>2)</sup>	
Storage temperature [°C]	–10 ... +60	
Corrosion resistance class CRC <sup>3)</sup>	2	
UL certification	cULus recognized (OL)	

1) Value in brackets applies to MS4/MS6-LRB with UL certification.

2) Value in brackets applies to MS4/MS6-LRB with pressure sensor AD...

3) Corrosion resistance class 2 according 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.

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	222	747
Pressure regulator with rotary knob with integrated lock E11	347	1,017

**New**  
**Variant EX4, UL1**

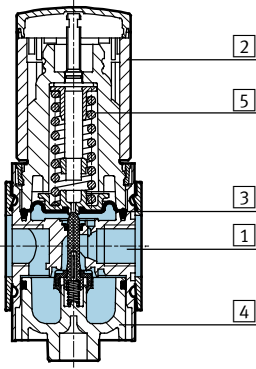
**Pressure regulators MS4/MS6-LRB, MS series**

Technical data

**FESTO**

**Materials**

Sectional view



Pressure regulator (manifold assembly)

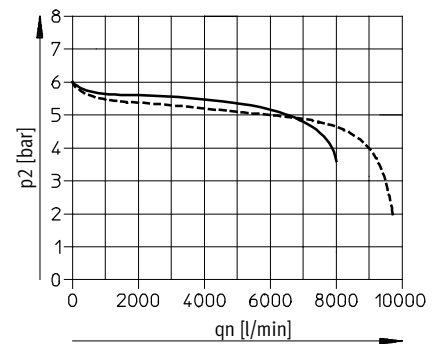
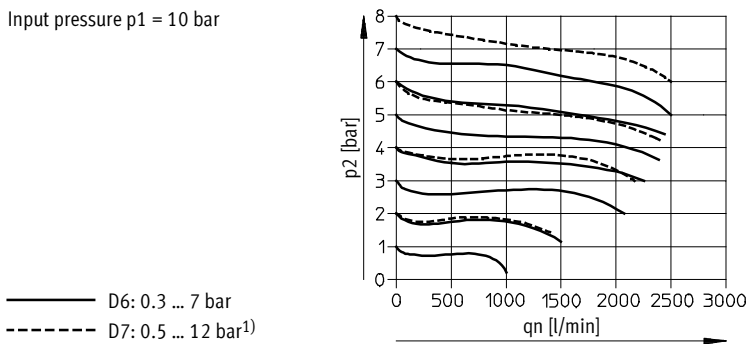
1	Housing	Die-cast aluminium
2	Rotary knob	PA/POM
	Rotary knob with integrated lock E11	Aluminium
3	Diaphragm	NBR
4	Cap, bottom	PET
5	Springs	Steel
-	Seals	NBR
Note on materials		RoHS-compliant
		Free of copper and PTFE only with cover plate VS

**Standard flow rate  $q_n$  as a function of output pressure  $p_2$**

MS4-LRB-1/4

MS6-LRB-1/2

Input pressure  $p_1 = 10$  bar



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

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

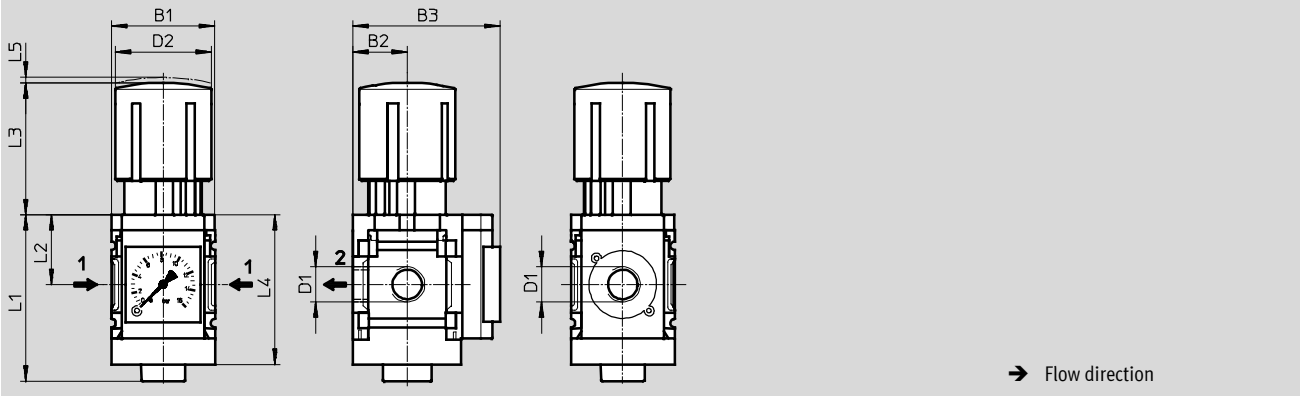
Technical data

**FESTO**

### Dimensions – Standard

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

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



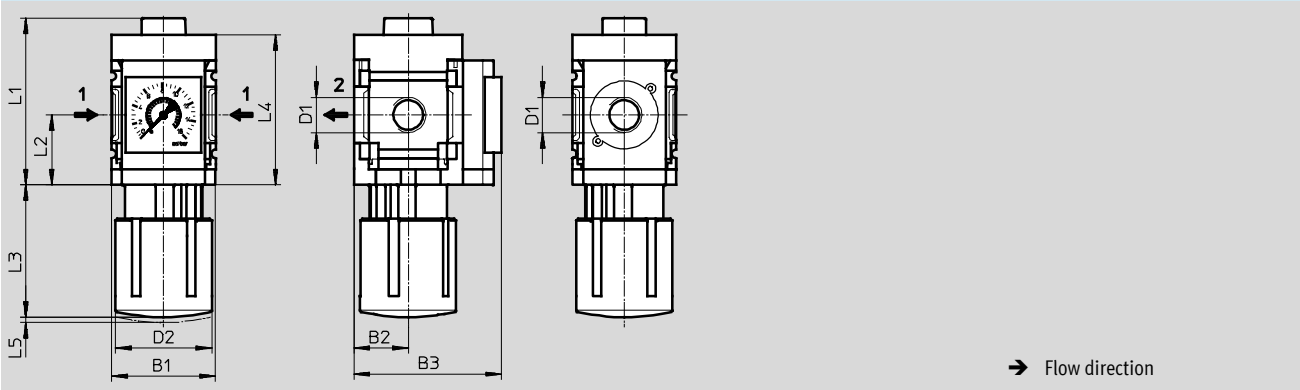
Type	B1	B2	B3		D1	D2	L1	L2	L3	L4	L5
			Standard scale	Red-green scale							
MS4-LRB-1/4	40	21	57	58.5	G1/4	37.2	64.4	27	51.1	58	2
MS6-LRB-1/2	62	31	77	78.5	G1/2	51	93	39	86	84	5

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

### Dimensions – Alternative mounting position

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

Rotary knob underneath KD



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

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

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

Technical data

### Dimensions – Angled outlet block BC/BD/BE

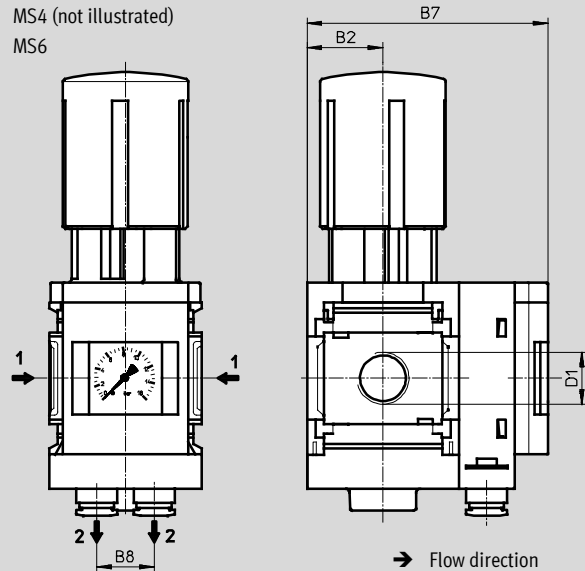
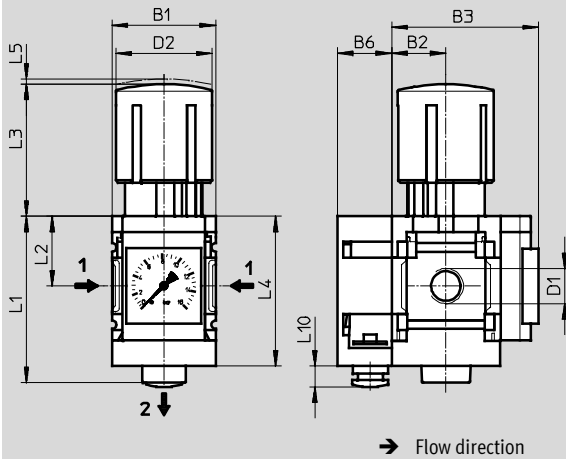
Download CAD data → [www.festo.com](http://www.festo.com)

Pressure output to rear

Pressure output to front Z

MS4  
MS6 (not illustrated)

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

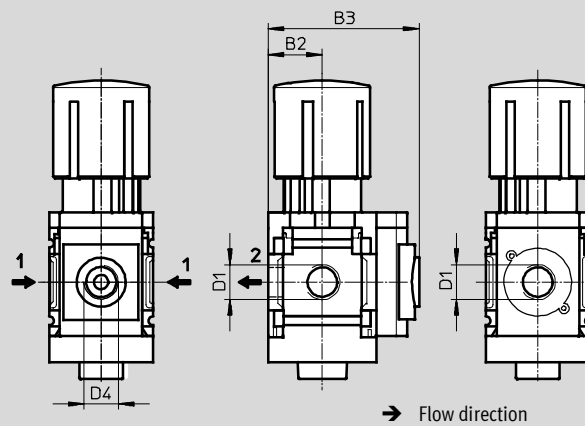
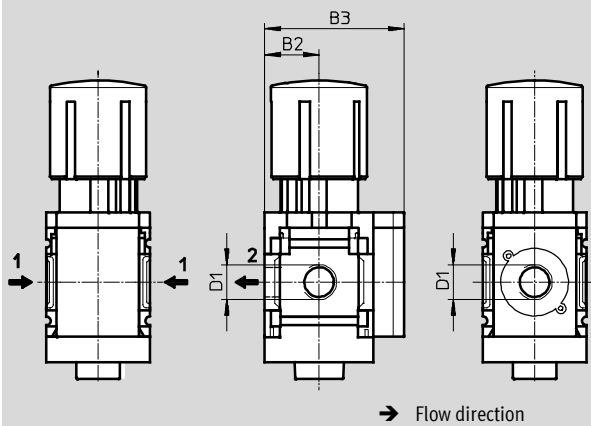
– Note: This product conforms to ISO 1179-1 and to ISO 228-1

### Dimensions – Pressure gauge alternatives

Download CAD data → [www.festo.com](http://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-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
MS6-LRB-1/2-...-VS	31	76	G1/2	-
MS6-LRB-1/2-...-A4	31	78.5	G1/2	G1/4

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

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

Technical data

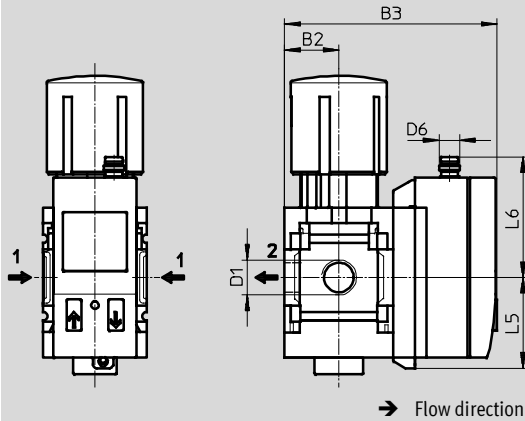
**FESTO**

### Dimensions – Pressure gauge alternatives

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

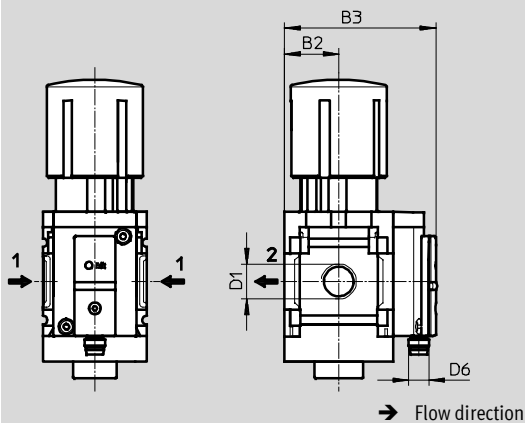
Variant AD3:  
SDE1-D10-G2-MS-L-PI-M12 with  
4-pin plug M12x1, 1 switching  
output PNP and 4 ... 20 mA  
analogue

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-LRB-1/4-...-AD1/AD2	21	82.6	G $\frac{1}{4}$	M8x1	35.1	46.7
MS4-LRB-1/4-...-AD3/AD4	21	82.6	G $\frac{1}{4}$	M12x1	35.1	55.8
MS4-LRB-1/4-...-AD7/AD8/AD9/AD10	21	59.1	G $\frac{1}{4}$	M8x1	–	–
MS6-LRB-1/2-...-AD1/AD2	31	103	G $\frac{1}{2}$	M8x1	35.1	46.7
MS6-LRB-1/2-...-AD3/AD4	31	103	G $\frac{1}{2}$	M12x1	35.1	55.8
MS6-LRB-1/2-...-AD7/AD8/AD9/AD10	31	79	G $\frac{1}{2}$	M8x1	–	–

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

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

Technical data

**Dimensions – Rotary knob**

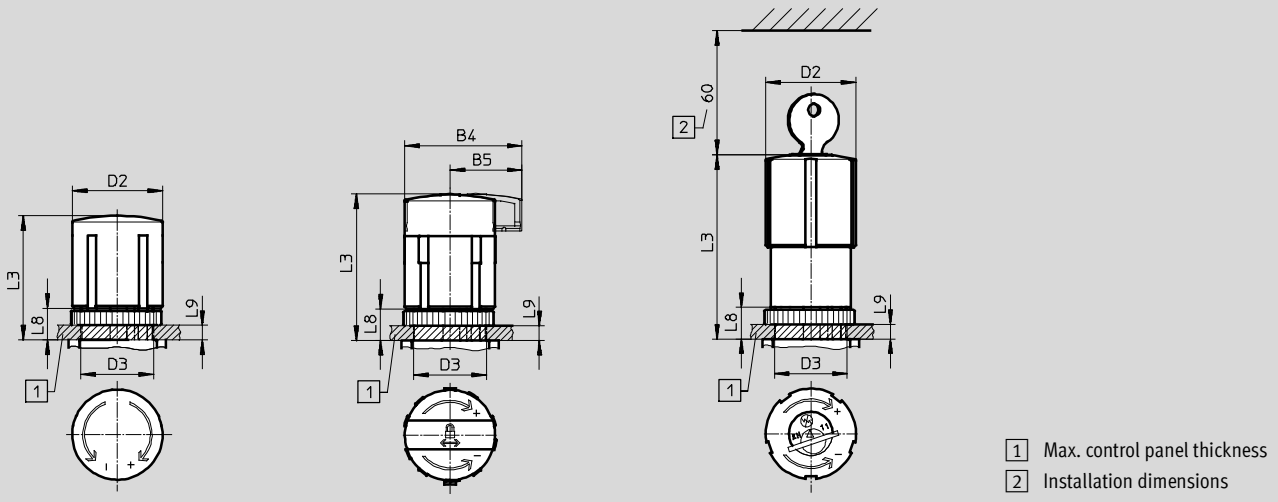
Download CAD data → [www.festo.com](http://www.festo.com)

For installation into control panel

Standard rotary knob with detent

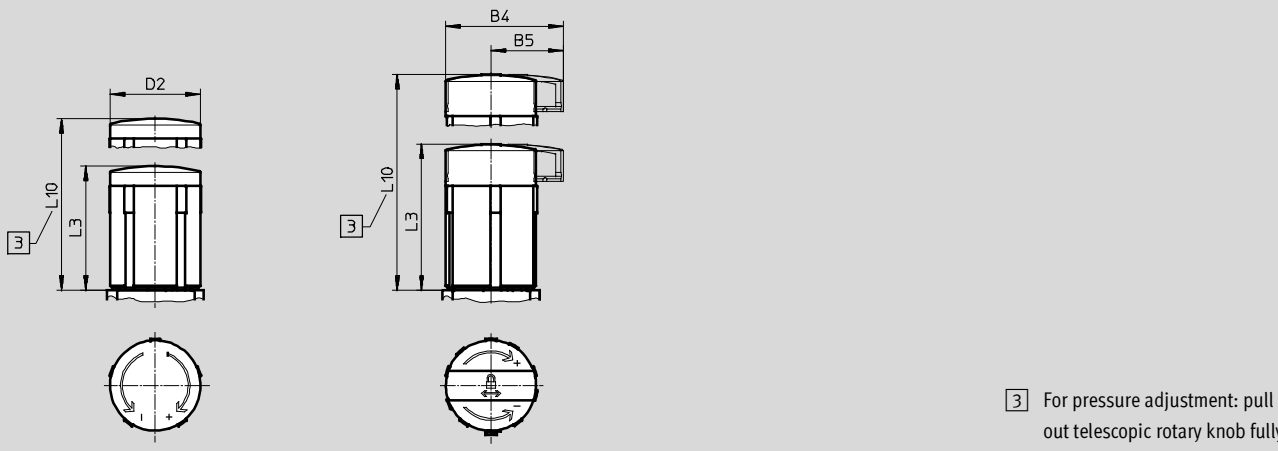
Standard rotary knob with detent,  
lockable via accessories AS

Rotary knob with integrated lock  
E11



Long rotary knob with detent LD

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



Type	B4	B5	D2	D3 +1	L3	L8	L9	L10
MS4-LRB-...	-	-	37.2	30	51.1	13	6	-
MS4-LRB-...-AS	48.3	29.7			60.2			
MS4-LRB-...-E11	-	-			76			
MS4-LRB-...-LD	-	-	37.2	-	51.1	-	-	76.8
MS4-LRB-...-LD-AS	48.3	29.7			60.2			85.7
MS6-LRB-...	-	-	51	44	86	22	14	-
MS6-LRB-...-AS	64.4	39			95.5			
MS6-LRB-...-E11	-	-			51.8			
MS6-LRB-...-LD	-	-	51	-	86	-	-	139
MS6-LRB-...-LD-AS	64.4	39			95.5			148.5



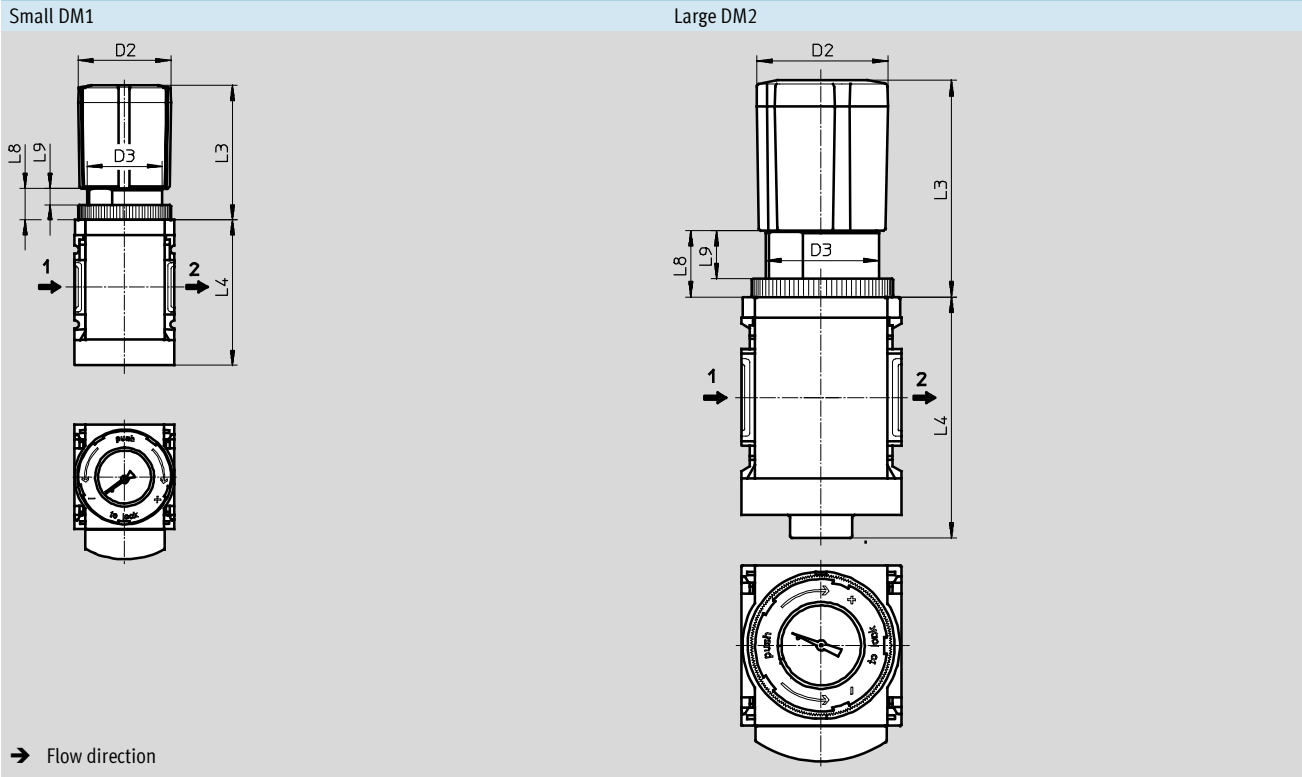
## Pressure regulators MS4/MS6-LRB, MS series

Technical data

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### Dimensions – Rotary knob pressure gauge

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



Type	D2	D3	L3	L4	L8	L9
MS4-LRB-...-DM1	37	M30x1	56	58,5	15	8,7
MS6-LRB-...-DM2	51	M44x1	84	93	26	19

### Ordering data

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

Integrated pressure gauge, display unit [bar], pressure output to rear without angled outlet block							
MS4	G $\frac{1}{4}$	529473	MS4-LRB- $\frac{1}{4}$ -D5-AS	529479	MS4-LRB- $\frac{1}{4}$ -D6-AS	529485	MS4-LRB- $\frac{1}{4}$ -D7-AS
MS6	G $\frac{1}{2}$	530322	MS6-LRB- $\frac{1}{2}$ -D5-AS	530328	MS6-LRB- $\frac{1}{2}$ -D6-AS	530334	MS6-LRB- $\frac{1}{2}$ -D7-AS

Integrated pressure gauge, display unit [bar], pressure output to rear with angled outlet block QS-8							
MS4	G $\frac{1}{4}$	529474	MS4-LRB- $\frac{1}{4}$ -D5-AS-BD	529480	MS4-LRB- $\frac{1}{4}$ -D6-AS-BD	529486	MS4-LRB- $\frac{1}{4}$ -D7-AS-BD
MS6	G $\frac{1}{2}$	-	-	530329	MS6-LRB- $\frac{1}{2}$ -D6-AS-BD	530335	MS6-LRB- $\frac{1}{2}$ -D7-AS-BD

Adapter plate A8 for EN pressure gauge $\frac{1}{8}$ , pressure output to rear without angled outlet block							
MS4	G $\frac{1}{4}$	529471	MS4-LRB- $\frac{1}{4}$ -D5-A8-AS	529477	MS4-LRB- $\frac{1}{4}$ -D6-A8-AS	529483	MS4-LRB- $\frac{1}{4}$ -D7-A8-AS

Adapter plate A4 for EN pressure gauge $\frac{1}{4}$ , pressure output to rear without angled outlet block							
MS6	G $\frac{1}{2}$	530320	MS6-LRB- $\frac{1}{2}$ -D5-A4-AS	530326	MS6-LRB- $\frac{1}{2}$ -D6-A4-AS	530332	MS6-LRB- $\frac{1}{2}$ -D7-A4-AS

### Ordering data – Wearing parts kits

Size	Part No.	Type
MS4	673649	MS4-LR/LRB
MS6	673650	MS6-LR/LRB

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

Ordering data – Modular products

M Mandatory data						O Options →	
Module No.	Series	Size	Function	Connection size	Pressure regulation range	Pressure gauge alternatives	Alternative pressure gauge scale
527692 527665	MS	4 6	LRB	1/4, 1/2, AGA, AGB, AGC, AGD, AGE	D5, D6, D7, D8	VS, A8, A4, RG, AD1 ... AD4, AD7 ... AD10	PSI, MPa
<b>Order example</b>							
527692	MS	4	- LRB	- AGC	- D5	- A4	

Ordering table							
Grid dimension	[mm]	40	62	Condi- tions	Code	Enter code	
M	Module No.	527692		527665			
	Series	Standard			MS		MS
	Size	4	6		...		
	Function	Pressure regulator for manifold assembly			-LRB		-LRB
	Connection size	Thread G1/4	-	1	-1/4		
		-	Thread G1/2	1	-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 range/operation	0.3 ... 4 bar, manually operated			-D5		
		0.3 ... 7 bar, manually operated			-D6		
		0.5 ... 12 bar, manually operated			-D7		
		-	0.5 ... 16 bar, manually operated		1 2	-D8	
O	Pressure gauge alternatives	Cover plate		3	-VS		
		Adapter plate for EN pressure gauge 1/8, without pressure gauge		-	4	-A8	
		Adapter plate for EN pressure gauge 1/4, without pressure gauge			4	-A4	
		Integrated pressure gauge, red-green scale			2	-RG	
		Pressure sensor with display, plug M8, 1 switching output PNP, 3-pin			1 4 5	-AD1	
		Pressure sensor with display, plug M8, 1 switching output NPN, 3-pin			1 4 5	-AD2	
		Pressure sensor with display, plug M12, 1 switching output PNP, 4-pin, analogue output 4 ... 20 mA			1 4 5	-AD3	
		Pressure sensor with display, plug M12, 1 switching output NPN, 4-pin, analogue output 4 ... 20 mA			1 4 5	-AD4	
		Pressure sensor without display, plug M8, threshold value comparator, PNP, N/O contact			1 5 6	-AD7	
		Pressure sensor without display, plug M8, threshold value comparator, PNP, N/C contact			1 5 6	-AD8	
		Pressure sensor without display, plug M8, window comparator, PNP, N/O contact			1 5 6	-AD9	
	Pressure sensor without display, plug M8, window comparator, PNP, N/C contact			1 5 6	-AD10		
	Alternative pressure gauge scale	psi		7	-PSI		
		MPa		8	-MPa		

1 1/4, 1/2, D8, AD1 ... AD4, AD7 ... AD10, DM1, DM2, KD, E11, WPM  
Not with EU certification EX4

2 D8, RG, OS, KD, AS  
Not with rotary knob pressure gauge DM1, DM2

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

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

**Transfer order code**

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

Pressure regulators MS4/MS6-LRB, MS series

Ordering data – Modular products

Options								
Secondary venting	Rotary knob alternative	Alternative mounting position	Security	Pressure output	Type of mounting	EU certification	UL certification	Flow direction
OS	LD, DM1, DM2	KD	AS, E11	BC, BD, BE	WR, WP, WPM, WPB, WB, WBM	EX4	UL1	Z
- OS	- LD	-	- AS	- BC	- WP	-	-	-

Ordering table						
Grid dimension	[mm]	40	62	Conditions	Code	Enter code
Secondary venting	Without secondary venting			2	-OS	
Rotary knob alternative	Long rotary knob			9	-LD	
	Rotary knob pressure gauge, small	-		1 9 10	-DM1	
	-	Rotary knob pressure gauge, large		1 9 10	-DM2	
Alternative mounting position	Rotary knob underneath			1 2 11	-KD	
Security	Lockable via accessories			2	-AS	
	With integrated lock			1	-E11	
Pressure output (p <sub>max</sub> = 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			12 13	-WR	
	Mounting bracket			14 15	-WP	
	Mounting bracket			1 12 14	-WPM	
	Mounting bracket for large wall gap			14 16	-WPB	
	Mounting bracket			12	-WB	
	Mounting bracket			12	-WBM	
EU certification	II 2GD to EU Directive 94/9/EG				-EX4	
UL certification	cULus, ordinary location for Canada and USA				-UL1	
Flow direction	Pressure output to front (without pressure output, no pressure gauge)				-Z	

- |   |  |
|---|--|
| <p>4 <b>A8, A4, AD1 ... AD4</b><br/>Not with flow direction Z.<br/>In combination with flow direction Z only with alternative mounting position KD</p> <p>5 <b>AD1 ... AD4, AD7 ... AD10</b><br/>Measuring range max. 10 bar<br/>Not with pressure regulation range D8</p> <p>6 <b>AD7 ... AD10</b> In combination with flow direction Z only with pressure output BC, BD, BE or<br/>In combination with flow direction Z only with alternative mounting position KD</p> <p>7 <b>PSI</b><br/>Not with pressure gauge alternatives VS, A8, A4, RG, AD1 ... AD4, AD7 ... AD10<br/>In combination with flow direction Z only with pressure output BC, BD, BE</p> <p>8 <b>MPA</b><br/>Not with pressure gauge alternatives VS, A8, A4, AD1 ... AD4, AD7 ... AD10<br/>Not with alternative mounting position KD.<br/>Not with rotary knob alternative DM1, DM2<br/>In combination with flow direction Z only with pressure output BC, BD, BE</p> <p>9 <b>LD, DM1, DM2</b><br/>Not with integrated lock E11</p> <p>10 <b>DM1, DM2</b><br/>Can only be selected in combination with pressure gauge alternative VS, A4, AD1 ... AD4, AD7 ... AD10</p> | <p>11 <b>KD</b><br/>Not with alternative pressure gauge scale MPA.<br/>In combination with alternative pressure gauge scale PSI only with flow direction Z and/or only with pressure output BC, BD, BE<br/>Not with mounting type WP, WPB.<br/>In combination with mounting type WR, WPM, WB, WBM not with flow direction Z.<br/>Not with pressure gauge alternative RG.<br/>In combination with pressure gauge alternatives A8, A4, AD1, AD2, AD3, AD4 only with flow direction Z.</p> <p>12 <b>WR, WPM, WB, WBM</b><br/>In combination with flow direction Z not with alternative mounting position KD</p> <p>13 <b>WR</b><br/>Only with flow direction Z.<br/>Not with rotary knob alternative LD</p> <p>14 <b>WP, WPM, WPB</b><br/>Only with connecting plate AGA, AGB, AGC, AGD, AGE</p> <p>15 <b>WP</b><br/>Only with flow direction Z and/or only with pressure output BC, BD, BE</p> <p>16 <b>WPB</b><br/>Not with flow direction Z.<br/>Not with pressure output BC, BD, BE</p> |
|---|--|

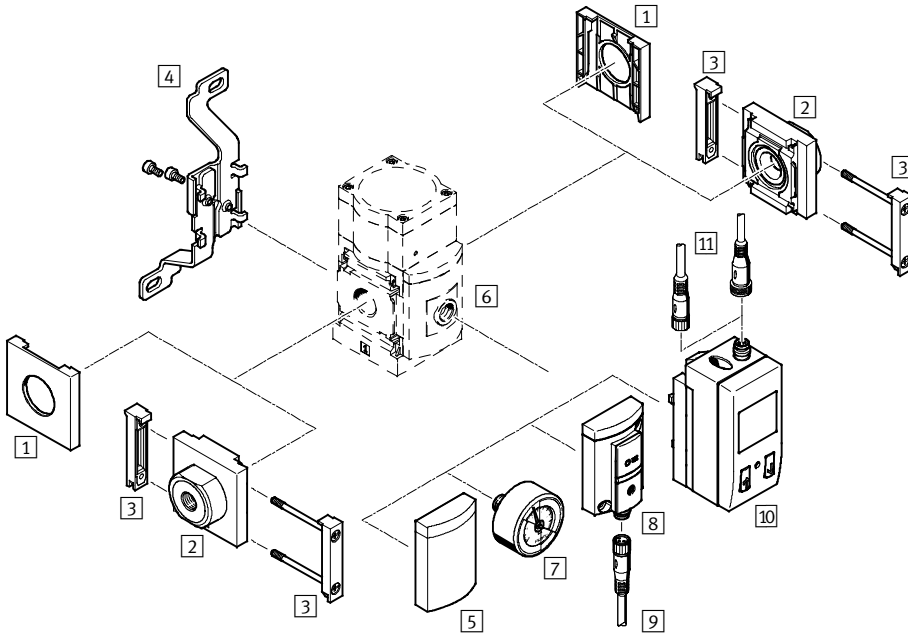
Transfer order code

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## Precision pressure regulators MS6-LRP, MS series

Peripherals overview

### Precision pressure regulator MS6-LRP



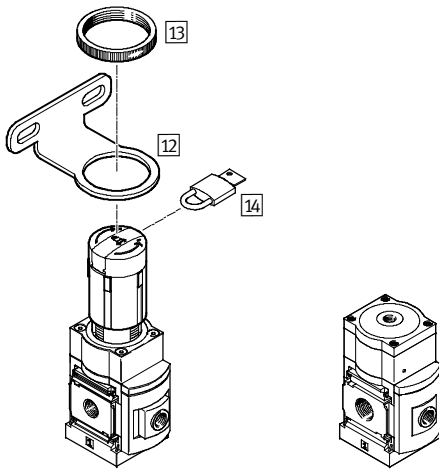
Note

Additional accessories:

- Module connector for combination with size MS4/MS6 or size MS9 → Internet: amv, rmv, armv
- Adapter plate for mounting on profiles → Internet: ipm-80, ipm-40-80, ipm-80-80

Manually operated

Pneumatically actuated



## Precision pressure regulators MS6-LRP, MS series

Peripherals overview

Mounting attachments and accessories						
		Individual device		Combination		→ Page/Internet
		Without connecting plate	With connecting plate	Without connecting plate	With connecting plate	
1	Cover cap MS6-END	■	-	■	-	ms6-end
2	Connecting plate MS6-AG...	-	■	-	■	ms6-ag
3	Module connector MS6-MV	-	■	■	■	ms6-mv
4	Mounting bracket MS6-WB	■	■	-	-	ms6-wb
5	Cover plate VS	■	■	■	■	48
6	Adapter plate for EN pressure gauge 1/8/1/4 A8/A4	■	■	■	■	48
7	Precision pressure gauge A8M/MAP	■	■	■	■	48, 98
8	Pressure sensor without display AD7 ... AD10	■	■	■	■	48
9	Connecting cable NEBU-M8...-LE3	■	■	■	■	98
10	Pressure sensor with display AD1 ... AD4	■	■	■	■	48
11	Connecting cable NEBU-M8...-LE3/NEBU-M12...-LE4	■	■	■	■	98
12	Mounting bracket MS6-WR	■	■	-	-	ms6-wr
13	Knurled nut (included in scope of delivery) MS-LR	■	■	-	-	-
14	Padlock LRVS-D	■	■	■	■	98
-	Mounting bracket MS6-WP/WPB/WPE/WPM	-	■	■	■	ms6-wp

## Precision pressure regulators MS6-LRP, MS series

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Type codes

		MS	6	-	LRP	-	1/2	-	D7	-	A8
<b>Series</b>											
MS	Standard service unit										
<b>Size</b>											
6	Grid dimension 62 mm										
<b>Service function</b>											
LRP	Precision pressure regulator										
<b>Connection size</b>											
1/4	G1/4 thread										
3/8	G3/8 thread										
1/2	G1/2 thread										
<b>Pressure regulation range/operation</b>											
D2	0.05 ... 0.7 bar, manually operated										
D4	0.05 ... 2.5 bar, manually operated										
D5	0.1 ... 4 bar, manually operated										
D7	0.1 ... 12 bar, manually operated										
<b>Pressure gauge alternatives</b>											
A8	Adapter plate for EN pressure gauge 1/8, without pressure gauge										

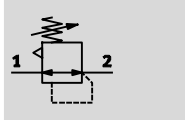
Further variants can be ordered using the modular system → 48

- Connecting plates
- Pressure regulation range/operation
- Pressure gauge alternatives
- Rotary knob alternatives
- Alternative mounting position
- Security
- Type of mounting
- EU certification
- UL certification
- Alternative flow direction

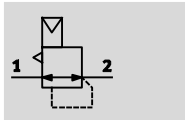
## Precision pressure regulators MS6-LRP, MS series





Technical data

Pressure regulation range/operation manually operated D2/D4/D5/D7



pneumatically actuated PO



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




The precision pressure regulator is suitable for sensitive applications with a required hysteresis of 0.02 bar. The output pressure p2 can be set within the pressure regulation range either manually using the rotary knob or pneumatically via a pilot pressure p12

by an external pilot regulator (if possible using a precision pressure regulator). When switching off the input pressure p1, the output pressure p2 is vented via the connection 3 (secondary venting).

- Good regulation characteristics with low hysteresis and primary pressure compensation
- High flow rate with minimal pressure drop
- High secondary venting for fast response times
- Regulator lock for protecting the values against adjustment
- 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
- Optional device variant EX4 for use in potentially explosive areas in zones 1, 2, 21 and 22

General technical data		MS6		
Size		MS6		
Pneumatic connection 1, 2		G $\frac{1}{4}$	G $\frac{3}{8}$	G $\frac{1}{2}$
Pneumatic connection 3 (secondary venting)		G $\frac{1}{4}$		
Pilot air connection 12 with variant PO		G $\frac{1}{8}$		
Constructional design		Piloted precision diaphragm regulator		
Regulating function		Output pressure constant, via 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 <sup>1)</sup>	D2 [bar]	0.05 ... 0.7, manually operated		
	D4 [bar]	0.05 ... 2.5, manually operated		
	D5 [bar]	0.1 ... 4, manually operated		
	D7 [bar]	0.1 ... 12, manually operated (0.1 ... 10 with pressure sensor AD... or with UL certification)		
	PO [bar]	0.1 ... 12, pneumatically actuated (0.1 ... 10 with pressure sensor AD... or with UL certification)		
Max. hysteresis [bar]		0.02		
Pressure indication		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 precision pressure gauge for displaying output pressure		
		G $\frac{1}{8}$ prepared G $\frac{1}{4}$ prepared		

1) Variant D2/D4/D5/D7: Supply pressure p1  $\geq$  output pressure p2 + 1 bar. Variant PO: Output pressure p2 = pilot pressure p12 + max. 0.5 bar.

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

## Precision pressure regulators MS6-LRP, MS series

Technical data

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Flow rates				
Pressure regulation range	D2 (0.05 ... 0.7 bar)	D4 (0.05 ... 2.5 bar)	D5 (0.1 ... 4 bar)	D7/PO (0.1 ... 12 bar)
Standard nominal flow rate $q_{nN}$ [l/min]				
$q_{nN} 1 \rightarrow 2$	G $\frac{1}{4}$	800 <sup>1)</sup>	1,100 <sup>2)</sup>	1,400 <sup>3)</sup>
	G $\frac{3}{8}$	1,100 <sup>1)</sup>	1,400 <sup>2)</sup>	1,700 <sup>3)</sup>
	G $\frac{1}{2}$	1,600 <sup>1)</sup>	2,300 <sup>2)</sup>	3,000 <sup>3)</sup>
Secondary venting flow rate [l/min]				
$q_{n2} 2 \rightarrow 3$	$\geq 220$ <sup>5)</sup>	$\geq 450$ <sup>6)</sup>	$\geq 650$ <sup>7)</sup>	$\geq 900$ <sup>8)</sup>

- 1) Measured at  $p_1 = 10$  bar and  $p_2 = 0.5$  bar,  $\Delta p = 0.1$  bar  
 2) Measured at  $p_1 = 10$  bar and  $p_2 = 1.5$  bar,  $\Delta p = 0.1$  bar  
 3) Measured at  $p_1 = 10$  bar and  $p_2 = 2.5$  bar,  $\Delta p = 0.1$  bar  
 4) Measured at  $p_1 = 10$  bar and  $p_2 = 6.0$  bar,  $\Delta p = 0.1$  bar

- 5) Measured at  $p_1 = 10$  bar and  $p_2 = 0.7$  bar,  $\Delta p_2 = 0.1$  bar  
 6) Measured at  $p_1 = 10$  bar and  $p_2 = 2.5$  bar,  $\Delta p_2 = 0.1$  bar  
 7) Measured at  $p_1 = 10$  bar and  $p_2 = 4.0$  bar,  $\Delta p_2 = 0.1$  bar  
 8) Measured at  $p_1 = 10$  bar and  $p_2 = 6.0$  bar,  $\Delta p_2 = 0.1$  bar

Operating and environmental conditions	
Operating pressure [bar]	1 ... 14 (1 ... 10) <sup>1)</sup>
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 not possible
Ambient temperature [°C]	-10 ... +60 (0 ... +50) <sup>2)</sup>
Temperature of medium [°C]	-10 ... +60 (0 ... +50) <sup>2)</sup>
Storage temperature [°C]	-10 ... +60
Corrosion resistance class CRC <sup>3)</sup>	2
UL certification	cULus recognized (OL)

- 1) Value in brackets applies to MS6-LRP with UL certification.  
 2) Value in brackets applies to MS6-LRP with pressure sensor AD...  
 3) Corrosion resistance class 2 according to Festo standard 940 070

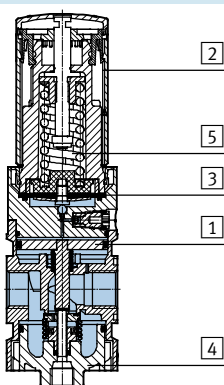
Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

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 $\leq T_a \leq$ +60 °C
CE mark (see declaration of conformity)	To EU Explosion Protection Directive (ATEX)

Weight [g]	
Precision pressure regulator	1,000
Precision pressure regulator with rotary knob with integrated lock E11	1,120

### Materials

Sectional view



Precision pressure regulator		
1	Housing	Die-cast aluminium
2	Rotary knob	PA/POM
	Rotary knob with integrated lock E11	Aluminium
3	Diaphragm	NBR
4	Cap, bottom	PC
5	Springs	Steel
-	Seals	NBR
Note on materials		RoHS-compliant Free of copper and PTFE (not with variant A8M or AD...)



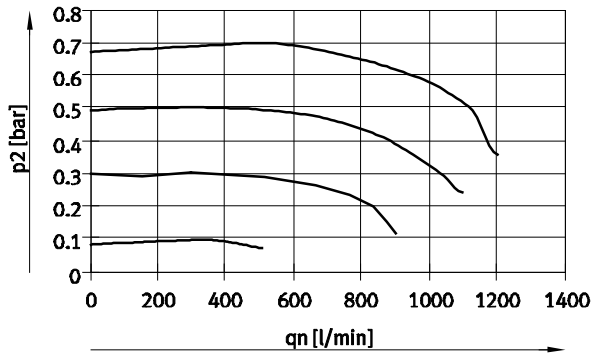
## Precision pressure regulators MS6-LRP, MS series

**FESTO**

Technical data

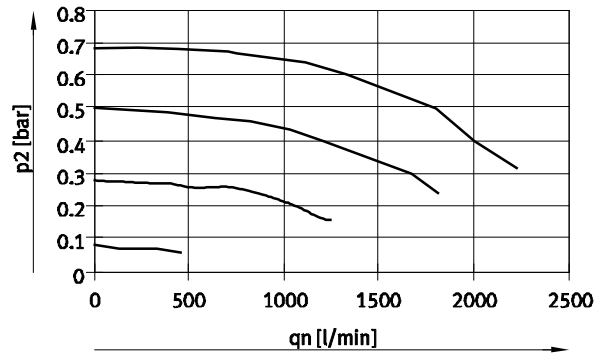
Standard flow rate  $q_n$  as a function of output pressure  $p_2$  ( $p_1 = 10$  bar)

MS6-LRP-1/4-D2



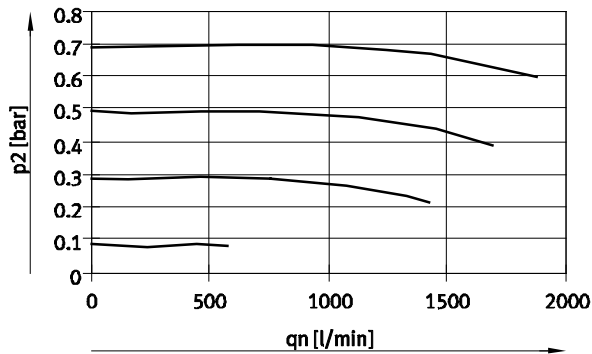
D2: 0.05...0.7 bar

MS6-LRP-3/8-D2



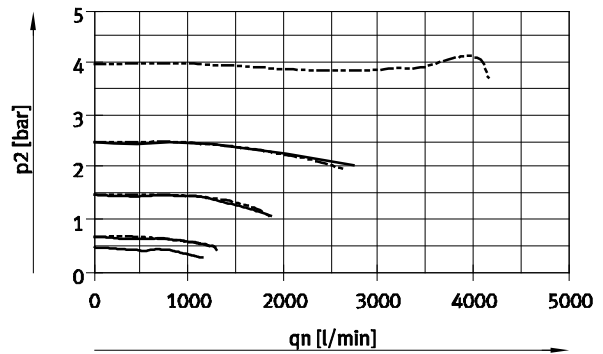
D2: 0.05...0.7 bar

MS6-LRP-1/2-D2



D2: 0.05...0.7 bar

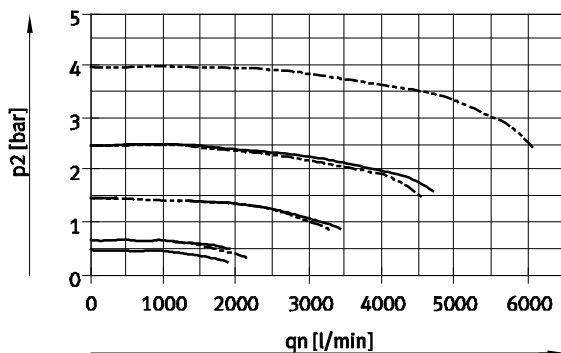
MS6-LRP-1/4-D4/D5



D4: 0.05...2.5 bar

D5: 0.1...4 bar

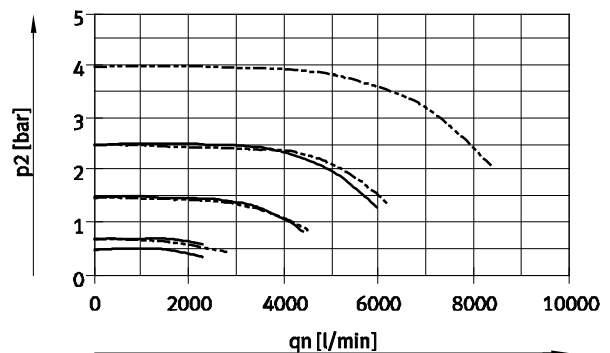
MS6-LRP-3/8-D4/D5



D4: 0.05...2.5 bar

D5: 0.1...4 bar

MS6-LRP-1/2-D4/D5



D4: 0.05...2.5 bar

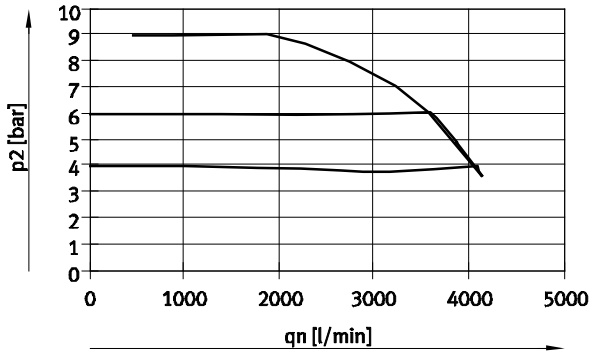
D5: 0.1...4 bar

**Precision pressure regulators MS6-LRP, MS series**

Technical data

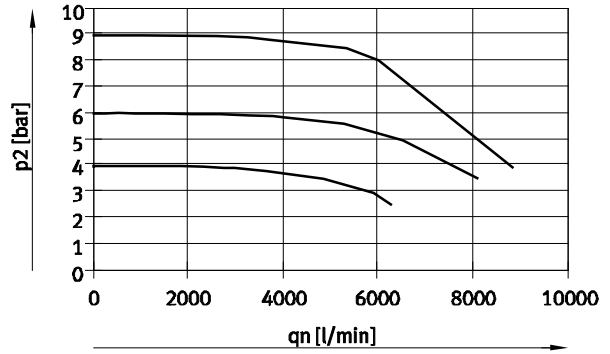
**Standard flow rate  $q_n$  as a function of output pressure  $p_2$  ( $p_1 = 10$  bar)**

MS6-LRP-1/4-D7/PO



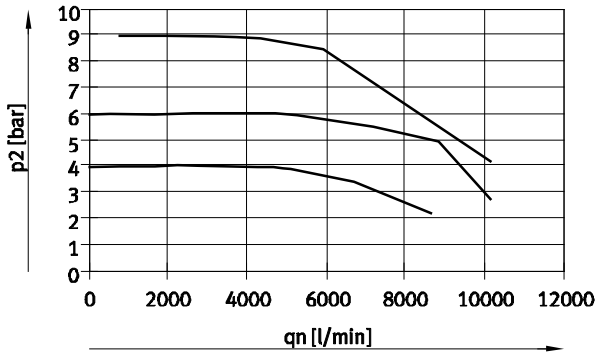
— D7/PO: 0.1...12 bar

MS6-LRP-3/8-D7/PO



— D7/PO: 0.1...12 bar

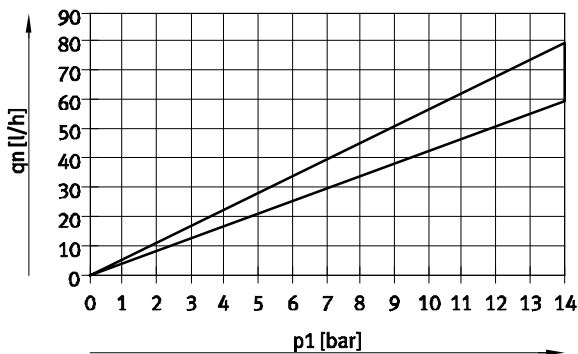
MS6-LRP-1/2-D7/PO



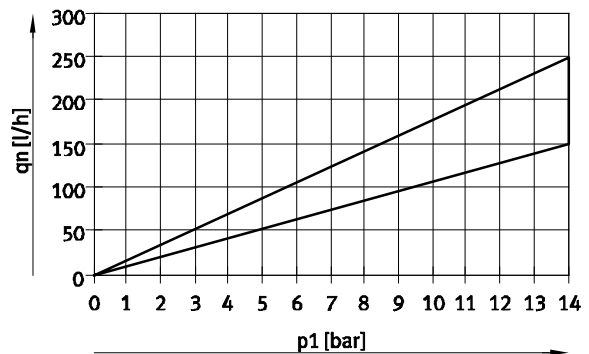
— D7/PO: 0.1...12 bar

**Internal air consumption  $q_n$  as a function of input pressure  $p_1$**

MS6-LRP-...-D2/D4



MS6-LRP-...-D5/D7/PO



## Precision pressure regulators MS6-LRP, MS series

Technical data

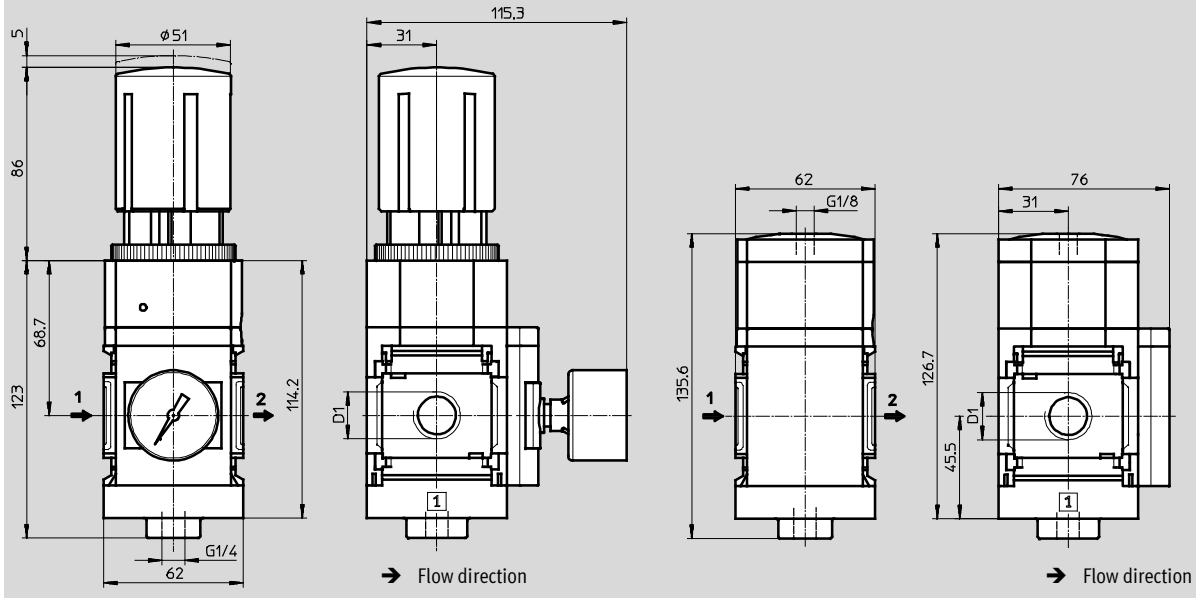
**FESTO**

### Dimensions

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

manually operated D2/D4/D5/D7,  
with adapter plate A8M for EN pressure gauge 1/8 as pressure gauge alternative  
with precision pressure gauge MAP

pneumatically actuated PO,  
with cover plate VS as pressure gauge alternative



Type	D1
MS6-LRP-1/4-D2/D4/D5/D7-A8M	G1/4
MS6-LRP-3/8-D2/D4/D5/D7-A8M	G3/8
MS6-LRP-1/2-D2/D4/D5/D7-A8M	G1/2

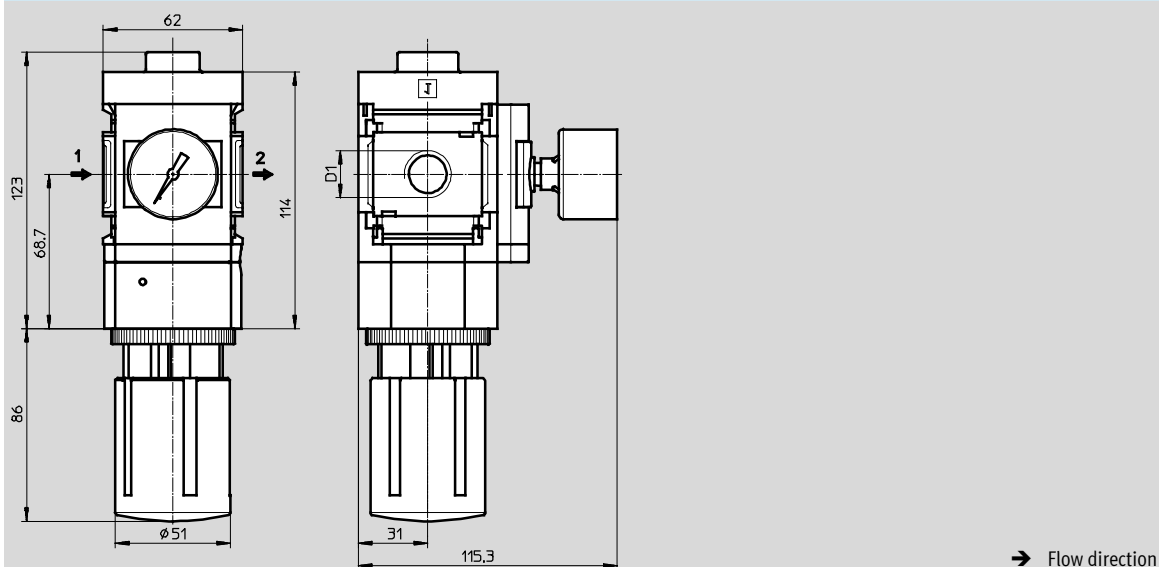
Type	D1
MS6-LRP-1/4-PO-VS	G1/4
MS6-LRP-3/8-PO-VS	G3/8
MS6-LRP-1/2-PO-VS	G1/2

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

### Dimensions – Alternative mounting position

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

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

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

## Precision pressure regulators MS6-LRP, MS series

Technical data

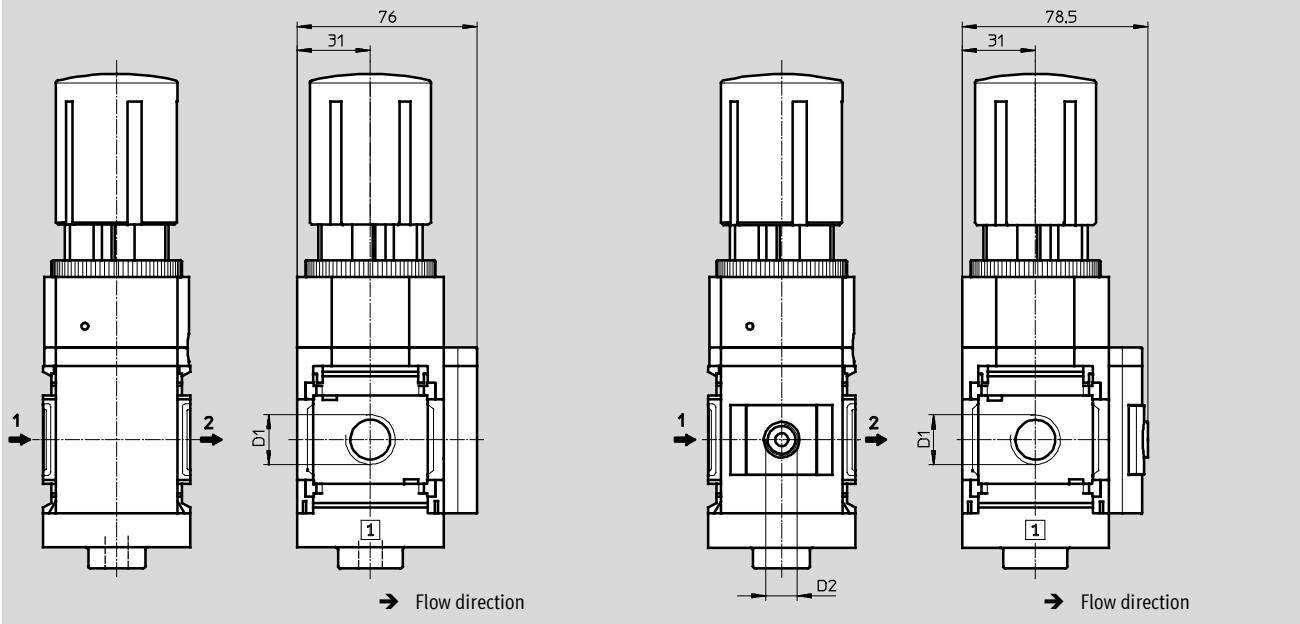
**FESTO**

### Dimensions – Pressure gauge alternatives

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

Cover plate VS

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



Type	D1	D2
MS6-LRP-1/4-...-VS	G1/4	-
MS6-LRP-3/8-...-VS	G3/8	
MS6-LRP-1/2-...-VS	G1/2	
MS6-LRP-1/4-...-A8	G1/4	G1/8
MS6-LRP-3/8-...-A8	G3/8	
MS6-LRP-1/2-...-A8	G1/2	
MS6-LRP-1/4-...-A4	G1/4	G1/4
MS6-LRP-3/8-...-A4	G3/8	
MS6-LRP-1/2-...-A4	G1/2	

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

## Precision pressure regulators MS6-LRP, MS series

Technical data

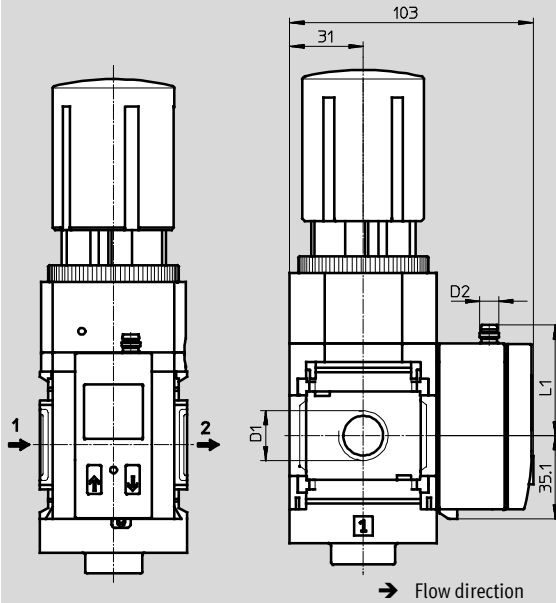
**FESTO**

### Dimensions – Pressure gauge alternatives

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

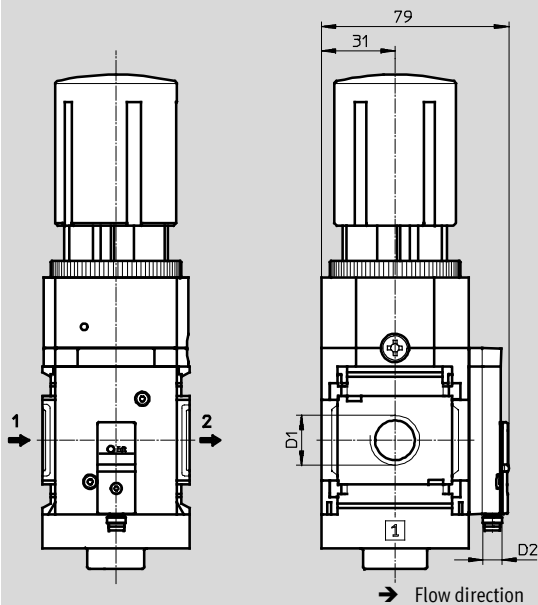
Variant AD3:  
SDE1-D10-G2-MS-L-PI-M12 with  
4-pin plug M12x1, 1 switching out-  
put PNP and 4 ... 20 mA analogue

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 out-  
put 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	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		
MS6-LRP-1/4-...-AD7/AD8/AD9/AD10	G1/4	M8x1	-
MS6-LRP-3/8-...-AD7/AD8/AD9/AD10	G3/8		
MS6-LRP-1/2-...-AD7/AD8/AD9/AD10	G1/2		

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

## Precision pressure regulators MS6-LRP, MS series

Technical data

### Dimensions – Rotary knob

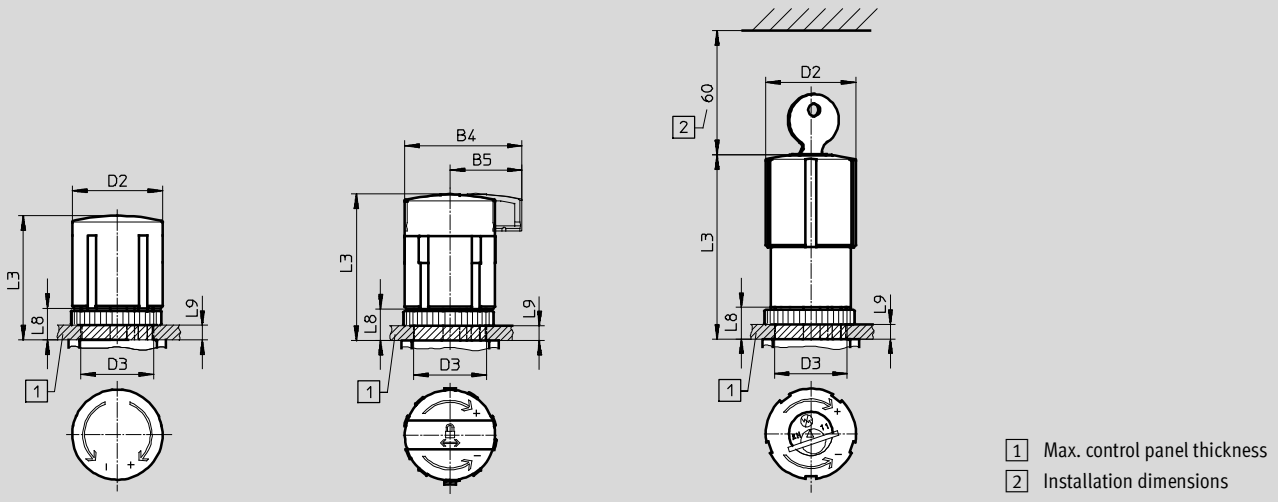
Download CAD data → [www.festo.com](http://www.festo.com)

For installation into control panel

Standard rotary knob with detent

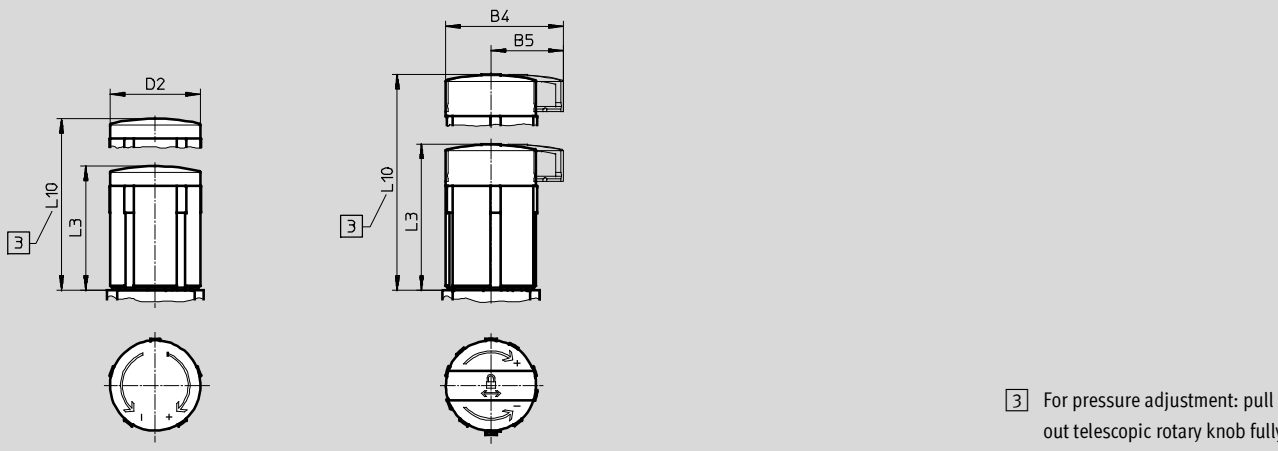
Standard rotary knob with detent,  
lockable via accessories AS

Rotary knob with integrated lock  
E11



Long rotary knob with detent LD

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



Type	B4	B5	D2	D3 +1	L3	L8	L9	L10
MS6-LRP-...	-	-	51	44	86	22	14	-
MS6-LRP-...-AS	64.4	39	51.8		95.5			
MS6-LRP-...-E11	-	-	-		112.1			
MS6-LRP-...-LD	-	-	51	-	86	-	-	139
MS6-LRP-...-LD-AS	64.4	39	-	-	95.5	-	-	148.5

## Precision pressure regulators MS6-LRP, MS series

**FESTO**

Technical data

Ordering data			
Adapter plate for EN pressure gauge 1/8, standard rotary knob with detent			
Size	Connection	Part No.	Type
Pressure regulation range 0.05 ... 0.7 bar, manually operated			
MS6	G1/4	<b>538004</b>	<b>MS6-LRP-1/4-D2-A8<sup>1)</sup></b>
	G3/8	<b>538012</b>	<b>MS6-LRP-3/8-D2-A8<sup>1)</sup></b>
	G1/2	<b>538020</b>	<b>MS6-LRP-1/2-D2-A8<sup>1)</sup></b>
Pressure regulation range 0.05 ... 2.5 bar, manually operated			
MS6	G1/4	<b>538006</b>	<b>MS6-LRP-1/4-D4-A8<sup>1)</sup></b>
	G3/8	<b>538014</b>	<b>MS6-LRP-3/8-D4-A8<sup>1)</sup></b>
	G1/2	<b>538022</b>	<b>MS6-LRP-1/2-D4-A8<sup>1)</sup></b>
Pressure regulation range 0.1 ... 4 bar, manually operated			
MS6	G1/4	<b>538008</b>	<b>MS6-LRP-1/4-D5-A8<sup>1)</sup></b>
	G3/8	<b>538016</b>	<b>MS6-LRP-3/8-D5-A8<sup>1)</sup></b>
	G1/2	<b>538024</b>	<b>MS6-LRP-1/2-D5-A8<sup>1)</sup></b>
Pressure regulation range 0.1 ... 12 bar, manually operated			
MS6	G1/4	<b>538010</b>	<b>MS6-LRP-1/4-D7-A8<sup>1)</sup></b>
	G3/8	<b>538018</b>	<b>MS6-LRP-3/8-D7-A8<sup>1)</sup></b>
	G1/2	<b>538026</b>	<b>MS6-LRP-1/2-D7-A8<sup>1)</sup></b>

1) Free of copper and PTFE

**Precision pressure regulators MS6-LRP, MS series**

Ordering data – Modular products

M Mandatory data →						
Module No.	Series	Size	Function	Connection size	Pressure regulation range/operation	Pressure gauge alternatives
538028	MS	6	LRP	¼, ⅜, ½, AGB, AGC, AGD, AGE	D2, D4, D5, D7, PO	VS, A8, A8M, A4, AD1 ... AD4, AD7 ... AD10
<b>Order example</b>						
<b>538028</b>	<b>MS</b>	<b>6</b>	<b>- LRP</b>	<b>- 1/2</b>	<b>- D4</b>	<b>- A4</b>

Ordering table		Grid dimension	[mm]	62	Condi- tions	Code	Enter code
M	Module No.	538028					
	Series	Standard				<b>MS</b>	MS
	Size	6				<b>6</b>	6
	Function	Precision pressure regulator				<b>-LRP</b>	-LRP
	Connection size	Thread G¼			1	- ¼	
		Thread G⅜			1	- ⅜	
		Thread G½			1	- ½	
		Connecting plate G¼				<b>-AGB</b>	
		Connecting plate G⅜				<b>-AGC</b>	
		Connecting plate G½				<b>-AGD</b>	
		Connecting plate G¾				<b>-AGE</b>	
	Pressure regulation range/ operation	0.05 ... 0.7 bar, manually operated				<b>-D2</b>	
		0.05 ... 2.5 bar, manually operated				<b>-D4</b>	
		0.1 ... 4 bar, manually operated				<b>-D5</b>	
		0.1 ... 12 bar, manually operated				<b>-D7</b>	
		0.1 ... 12 bar, pneumatically actuated (pressure range determined by means of pilot regulator)			1 2	<b>-PO</b>	
	Pressure gauge alternatives	Cover plate				<b>-VS</b>	
		Adapter plate for EN pressure gauge ⅛, without pressure gauge				<b>-A8</b>	
		Adapter plate for EN pressure gauge ⅛, with precision pressure gauge				<b>-A8M</b>	
		Adapter plate for EN pressure gauge ¼, without pressure gauge				<b>-A4</b>	
		Pressure sensor with display, plug M8, 1 switching output PNP, 3-pin			1 3	<b>-AD1</b>	
		Pressure sensor with display, plug M8, 1 switching output NPN, 3-pin			1 3	<b>-AD2</b>	
		Pressure sensor with display, plug M12, 1 switching output PNP, 4-pin, analogue output 4 ... 20 mA			1 3	<b>-AD3</b>	
		Pressure sensor with display, plug M12, 1 switching output NPN, 4-pin, analogue output 4 ... 20 mA			1 3	<b>-AD4</b>	
		Pressure sensor without display, plug M8, threshold value comparator, PNP, N/O contact			1 4	<b>-AD7</b>	
		Pressure sensor without display, plug M8, threshold value comparator, PNP, N/C contact			1 4	<b>-AD8</b>	
		Pressure sensor without display, plug M8, window comparator, PNP, N/O contact			1 4	<b>-AD9</b>	
		Pressure sensor without display, plug M8, window comparator, PNP, N/C contact			1 4	<b>-AD10</b>	

1 ¼, ⅜, ½, PO, AD1 ... AD4, AD7 ... AD10, KD, E11, WPM  
Not with EU certification EX4

2 PO Not with rotary knob alternative LD  
Not with security AS, E11  
Not with mounting type WR

**Transfer order code**

538028	MS	6	- LRP	-	-	-	-
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## Precision pressure regulators MS6-LRP, MS series

**FESTO**

Ordering data – Modular products

Options						
Rotary knob alternative	Alternative mounting position	Security	Type of mounting	EU certification	UL certification	Alternative flow direction
LD	KD	AS, E11	WR, WP, WPM, WB	EX4	UL1	Z
- LD	-	- AS	-	-	-	-

Ordering table						
Grid dimension	[mm]	62	Condi- tions	Code	Enter code	
0	Rotary knob alternative	Long rotary knob	5	-LD		
	Alternative mounting position	Rotary knob underneath	1 6	-KD		
	Security	Lockable via accessories		-AS		
		With integrated lock	1	-E11		
	Type of mounting	Mounting bracket with knurled nut for regulator head	7	-WR		
		Mounting bracket	8	-WP		
		Mounting bracket	1 8	-WPM		
		Mounting bracket		-WB		
	EU certification	II 2GD to EU Directive 94/9/EG		-EX4		
	UL certification	cULus, ordinary location for Canada and USA		-UL1		
	Alternative flow direction	Flow direction from right to left (without pressure output, no pressure gauge)		-Z		

- 3 **AD1 ... AD4** Measuring range max. 10 bar.  
Not with pressure regulation range/operation D2, D4
- 4 **AD7 ... AD10** Measuring range max. 10 bar.  
Not with pressure regulation range/operation D2
- 5 **LD** Not with integrated lock E11

- 6 **KD** Not with mounting type WP
- 7 **WR** Not with rotary knob alternative LD
- 8 **WP, WPM** Only with connecting plate AGB, AGC, AGD or AGE

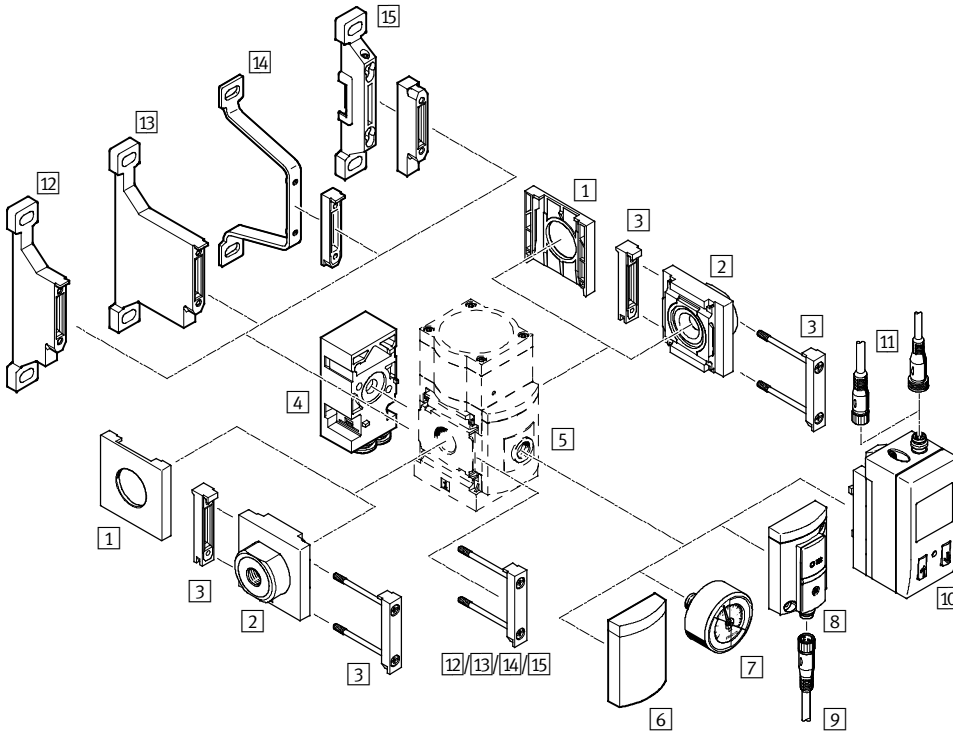
Transfer order code

-  -  -  -  -  -  -

## Precision pressure regulators MS6-LRPB, MS series

Peripherals overview

### Precision pressure regulator MS6-LRPB with pressure output to the rear



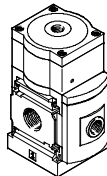
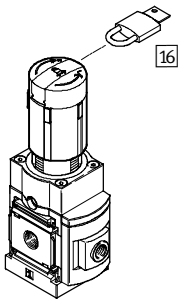
Note

Additional accessories:

- Module connector for combination with size MS4/MS6 or size MS9 → Internet: amv, rmv, armv
- Adapter plate for mounting on profiles → Internet: ipm-80, ipm-40-80, ipm-80-80

Manually operated

Pneumatically actuated



## Precision pressure regulators MS6-LRPB, MS series

Peripherals overview

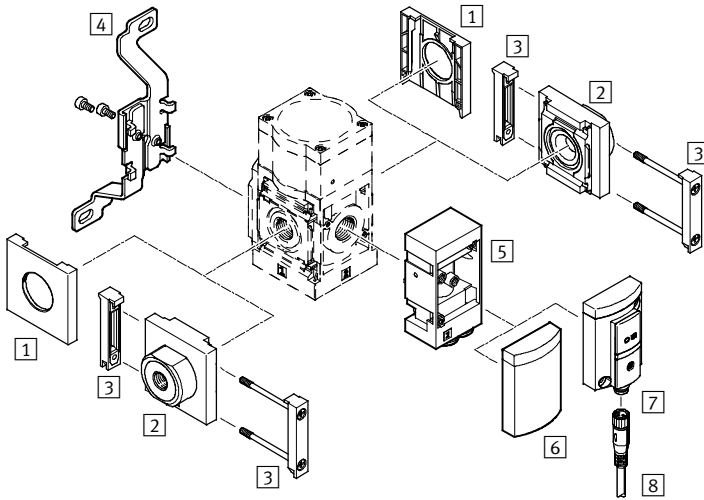
**FESTO**

Mounting attachments and accessories						
		Individual device		Combination		→ Page/Internet
		Without connecting plate	With connecting plate	Without connecting plate	With connecting plate	
1	Cover cap MS6-END	■	-	■	-	ms6-end
2	Connecting plate MS6-AG...	-	■	-	■	ms6-ag
3	Module connector MS6-MV	-	■	■	■	ms6-mv
4	Angled outlet block B...	■	■	■	■	64
5	Adapter plate for EN pressure gauge 1/8/1/4 A8/A4	■	■	■	■	64
6	Cover plate VS	■	■	■	■	64
7	Precision pressure gauge A8M/MAP	■	■	■	■	64, 98
8	Pressure sensor without display AD7 ... AD10	■	■	■	■	64
9	Connecting cable NEBU-M8...-LE3	■	■	■	■	98
10	Pressure sensor with display AD1 ... AD4	■	■	■	■	64
11	Connecting cable NEBU-M8...-LE3/NEBU-M12...-LE4	■	■	■	■	98
12	Mounting bracket MS6-WP	-	■	■	■	ms6-wp
13	Mounting bracket MS6-WPB	-	■	■	■	ms6-wp
14	Mounting bracket MS6-WPE	-	■	■	■	ms6-wp
15	Mounting bracket MS6-WPM	-	■	■	■	ms6-wp
16	Padlock LRVS-D	■	■	■	■	98

## Precision pressure regulators MS6-LRPB, MS series

Peripherals overview

### Precision pressure regulator MS6-LRPB with pressure output to the front



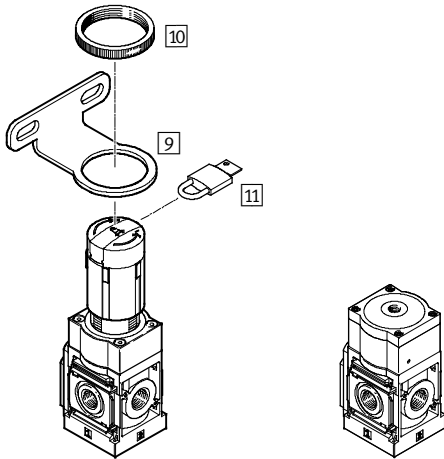
 Note

Additional accessories:

- Module connector for combination with size MS4/MS6 or size MS9 → Internet: amv, rmv, armv
- Adapter plate for mounting on profiles → Internet: ipm-80, ipm-40-80, ipm-80-80

### Manually operated

### Pneumatically actuated



## Precision pressure regulators MS6-LRPB, MS series

Peripherals overview

Mounting attachments and accessories						
		Individual device		Combination		→ Page/Internet
		Without connecting plate	With connecting plate	Without connecting plate	With connecting plate	
1	Cover cap MS6-END	■	-	■	-	ms6-end
2	Connecting plate MS6-AG...	-	■	-	■	ms6-ag
3	Module connector MS6-MV	-	■	■	■	ms6-mv
4	Mounting bracket MS6-WB	■	■	-	-	ms6-wb
5	Angled outlet block B...	■	■	■	■	64
6	Cover plate VS	■	■	■	■	64
7	Pressure sensor without display AD7 ... AD10	■	■	■	■	64
8	Connecting cable NEBU-M8...-LE3	■	■	■	■	98
9	Mounting bracket MS6-WR	■	■	-	-	ms6-wr
10	Knurled nut (included in scope of delivery) MS-LR	■	■	-	-	-
11	Padlock LRVS-D	■	■	■	■	98

**New**  
**Variant EX4, UL1**

**Precision pressure regulators MS6-LRPB, MS series**

**FESTO**

Type codes

		MS	6	-	LRPB	-	1/2	-	D7	-	A8	-	BD
<b>Series</b>													
MS	Standard service unit												
<b>Size</b>													
6	Grid dimension 62 mm												
<b>Service function</b>													
LRPB	Precision pressure regulator for manifold assembly												
<b>Connection size</b>													
1/2	G1/2 thread												
<b>Pressure regulation range/operation</b>													
D2	0.05 ... 0.7 bar, manually operated												
D4	0.05 ... 2.5 bar, manually operated												
D5	0.1 ... 4 bar, manually operated												
D7	0.1 ... 12 bar, manually operated												
<b>Pressure gauge alternatives</b>													
A8	Adapter plate for EN pressure gauge 1/8, without pressure gauge												
<b>Pressure output</b>													
	Without angled outlet block												
BD	Angled outlet block QS-8												

**Further variants can be ordered using the modular system → 64**

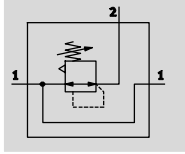
- Connecting plates
- Pressure regulation range/operation
- Pressure gauge alternatives
- Rotary knob alternatives
- Alternative mounting position
- Security
- Alternative pressure output
- Type of mounting
- EU certification
- UL certification
- Alternative flow direction

## Precision pressure regulators MS6-LRPB, MS series

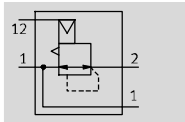
**FESTO**





Technical data

Pressure regulation range/operation manually operated D2/D4/D5/D7



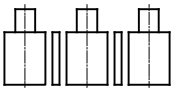
pneumatically actuated PO



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



Precision pressure regulator for manifold assembly:




The precision pressure regulator is suitable for sensitive applications requiring a hysteresis of 0.02 bar. The output pressure p2 can be set within

the pressure regulation range either manually using the rotary knob or pneumatically via a pilot pressure p12 by an external pilot regulator (if possible using a precision pressure regulator). When switching off the input pressure p1, the output pressure p2 is vented via connection 3 (secondary venting).

- Good regulation characteristics with low hysteresis and primary pressure compensation
- Manifold assembly with through air supply
- For configuring a regulator manifold with independent pressure regulation ranges
- Regulator lock for protecting the values against adjustment
- 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
- Optional device variant EX4 for use in potentially explosive areas in zones 1, 2, 21 and 22

General technical data		MS6
Size		MS6
Pneumatic connection 1		G½
Pneumatic connection 2		G½ QS-8 with angled outlet block BD QS-10 with angled outlet block BE
Pneumatic connection 3		G¼
Pilot air connection 12 with variant PO		G⅜
Constructional design		Piloted precision diaphragm regulator with through pressure supply
Regulating function		Output pressure constant, via 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 <sup>1)</sup>	D2 [bar]	0.05 ... 0.7, manually operated
	D4 [bar]	0.05 ... 2.5, manually operated
	D5 [bar]	0.1 ... 4, manually operated
	D7 [bar]	0.1 ... 12, manually operated (0.1 ... 10 with pressure sensor AD... or with UL certification)
	PO [bar]	0.1 ... 12, pneumatically actuated (0.1 ... 10 with pressure sensor AD... or with UL certification)
Max. hysteresis [bar]		0.02
Pressure indication		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 G⅜ prepared G¼ prepared

1) Variant D2/D4/D5/D7: Supply pressure p1 ≥ output pressure p2 + 1 bar. Variant PO: Output pressure p2 = pilot pressure p12 + max. 0.5 bar.  
-  - Note: This product conforms to ISO 1179-1 and to ISO 228-1

## Precision pressure regulators MS6-LRPB, MS series

**FESTO**

Technical data

Flow rates				
Pressure regulation range	D2 (0.05 ... 0.7 bar)	D4 (0.05 ... 2.5 bar)	D5 (0.1 ... 4 bar)	D7/PO (0.1 ... 12 bar)
Standard nominal flow rate $q_{nN}$ [l/min]				
$q_{nN} 1 \rightarrow 2$	G $\frac{1}{2}$	1,600 <sup>1)</sup>	2,300 <sup>2)</sup>	3,000 <sup>3)</sup>
Secondary venting flow rate [l/min]				
$q_n 2 \rightarrow 3$		$\geq 220$ <sup>5)</sup>	$\geq 450$ <sup>6)</sup>	$\geq 650$ <sup>7)</sup>

- 1) Measured at  $p_1 = 10$  bar and  $p_2 = 0.5$  bar,  $\Delta p = 0.1$  bar
- 2) Measured at  $p_1 = 10$  bar and  $p_2 = 1.5$  bar,  $\Delta p = 0.1$  bar
- 3) Measured at  $p_1 = 10$  bar and  $p_2 = 2.5$  bar,  $\Delta p = 0.1$  bar
- 4) Measured at  $p_1 = 10$  bar and  $p_2 = 6.0$  bar,  $\Delta p = 0.1$  bar

- 5) Measured at  $p_1 = 10$  bar and  $p_2 = 0.7$  bar,  $\Delta p_2 = 0.1$  bar
- 6) Measured at  $p_1 = 10$  bar and  $p_2 = 2.5$  bar,  $\Delta p_2 = 0.1$  bar
- 7) Measured at  $p_1 = 10$  bar and  $p_2 = 4.0$  bar,  $\Delta p_2 = 0.1$  bar
- 8) Measured at  $p_1 = 10$  bar and  $p_2 = 6.0$  bar,  $\Delta p_2 = 0.1$  bar

Operating and environmental conditions	
Operating pressure [bar]	1 ... 14 (1 ... 10) <sup>1)</sup>
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 not possible
Ambient temperature [°C]	-10 ... +60 (0 ... +50) <sup>2)</sup>
Temperature of medium [°C]	-10 ... +60 (0 ... +50) <sup>2)</sup>
Storage temperature [°C]	-10 ... +60
Corrosion resistance class CRC <sup>3)</sup>	2
UL certification	cULus recognized (OL)

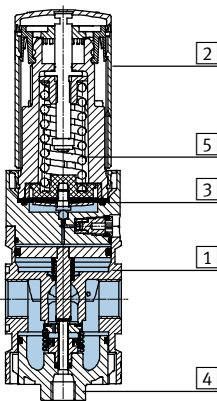
- 1) Value in brackets applies to MS6-LRPB with UL certification.
- 2) Value in brackets applies to MS6-LRPB with pressure sensor AD...
- 3) Corrosion resistance class 2 according to Festo standard 940 070  
Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

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 $\leq$ Ta $\leq$ +60 °C
CE mark (see declaration of conformity)	To EU Explosion Protection Directive (ATEX)

Weight [g]	
Precision pressure regulator	1,000
Precision pressure regulator with rotary knob with integrated lock E11	1,120

### Materials

Sectional view



Precision pressure regulator (manifold assembly)		
1	Housing	Die-cast aluminium
2	Rotary knob	PA/POM
	Rotary knob with integrated lock E11	Aluminium
3	Diaphragm	NBR
4	Cap, bottom	PC
5	Springs	Steel
-	Seals	NBR
Note on materials		RoHS-compliant Free of copper and PTFE (not with variant A8M or AD...)

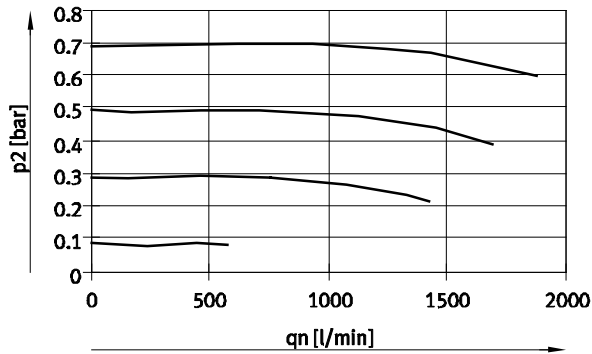


# Precision pressure regulators MS6-LRPB, MS series

Technical data

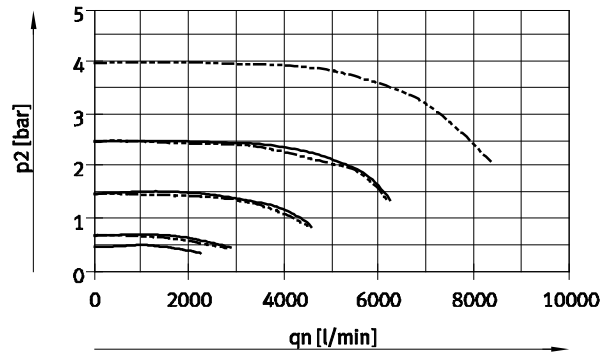
## Standard flow rate $q_n$ as a function of output pressure $p_2$ ( $p_1 = 10$ bar)

MS6-LRPB-1/2-D2



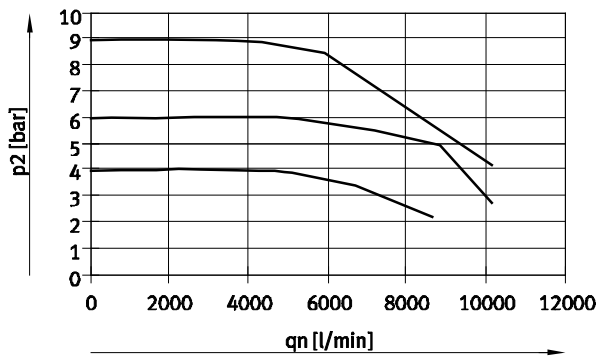
— D2: 0.05...0.7 bar

MS6-LRPB-1/2-D4/D5



— D4: 0.05...2.5 bar  
- - - D5: 0.1...4 bar

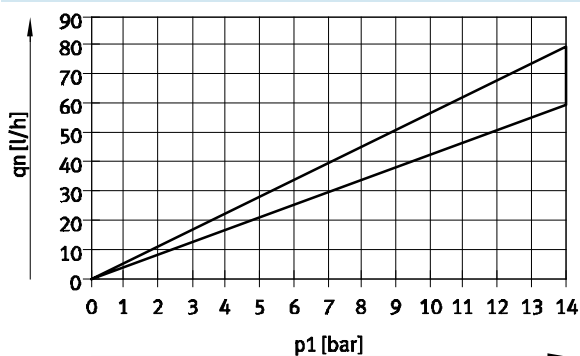
MS6-LRPB-1/2-D7/PO



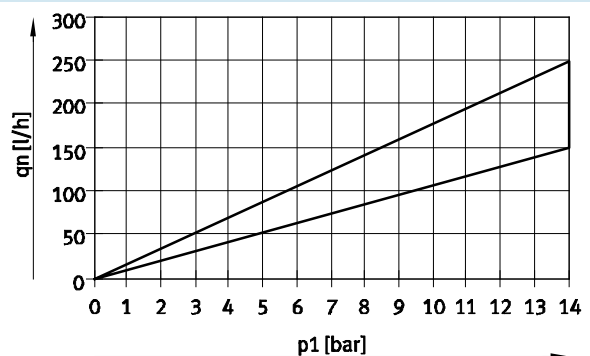
— D7/PO: 0.1...12 bar

## Internal air consumption $q_n$ as a function of input pressure $p_1$

MS6-LRPB-...-D2/D4



MS6-LRPB-...-D5/D7/PO



**New**  
**Variant EX4, UL1**

**Precision pressure regulators MS6-LRPB, MS series**

Technical data

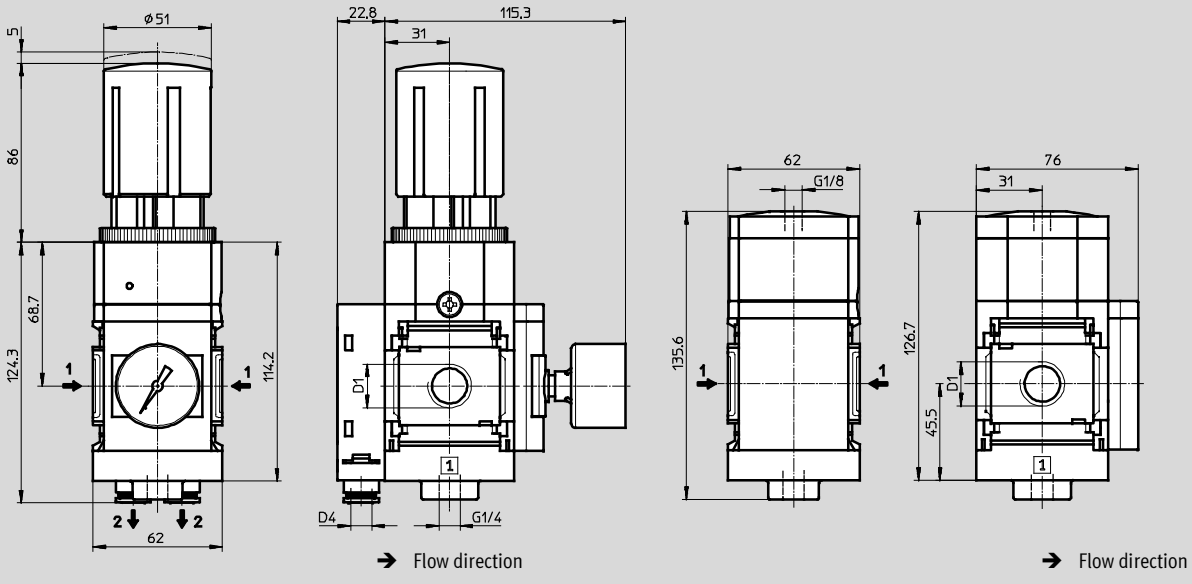
**FESTO**

**Dimensions**

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

manually operated D2/D4/D5/D7,  
with adapter plate A8M for EN pressure gauge 1/8 as pressure gauge alternative,  
with precision pressure gauge MAP, with angled outlet block BD/BE

pneumatically actuated PO,  
with cover plate VS as pressure gauge alternative



Type	D1	D4
MS6-LRPB-1/2-D2/D4/D5/D7-A8M-BD	G1/2	QS-8
MS6-LRPB-1/2-D2/D4/D5/D7-A8M-BE		QS-10

Type	D1
MS6-LRPB-1/2-PO-VS	G1/2

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

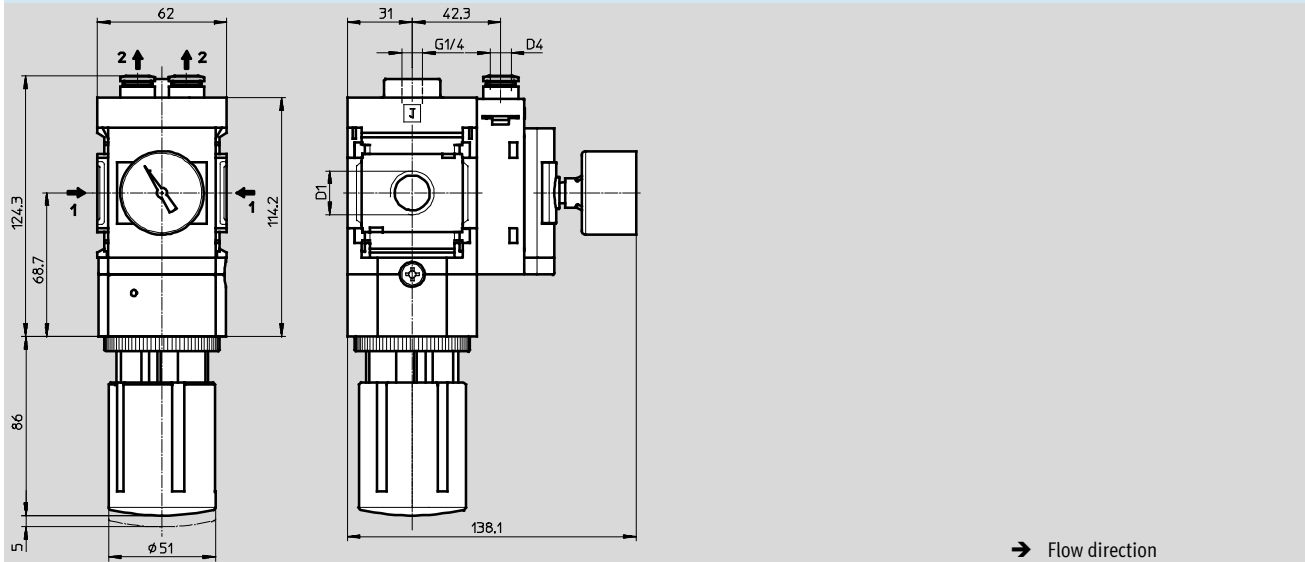
## Precision pressure regulators MS6-LRPB, MS series

Technical data

### Dimensions – Alternative mounting position

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

Rotary knob underneath KD, angled outlet block BD/BE



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

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

**New**  
**Variant EX4, UL1**

**Precision pressure regulators MS6-LRPB, MS series**

Technical data

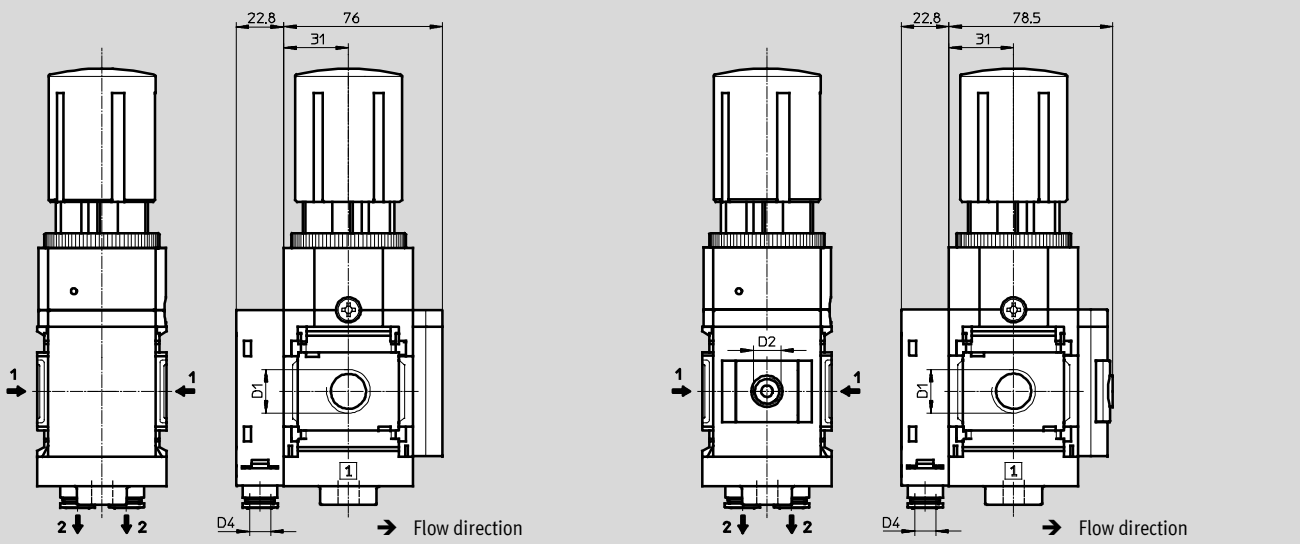
**FESTO**

**Dimensions – Pressure gauge alternatives**

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

Cover plate VS, angled outlet block BD/BE

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	G1/2	-	QS-8
MS6-LRPB-1/2-...-VS-BE			QS-10
MS6-LRPB-1/2-...-A8-BD	G1/2	G1/8	QS-8
MS6-LRPB-1/2-...-A8-BE			QS-10
MS6-LRPB-1/2-...-A4-BD	G1/2	G1/4	QS-8
MS6-LRPB-1/2-...-A4-BE			QS-10

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

## Precision pressure regulators MS6-LRPB, MS series

Technical data

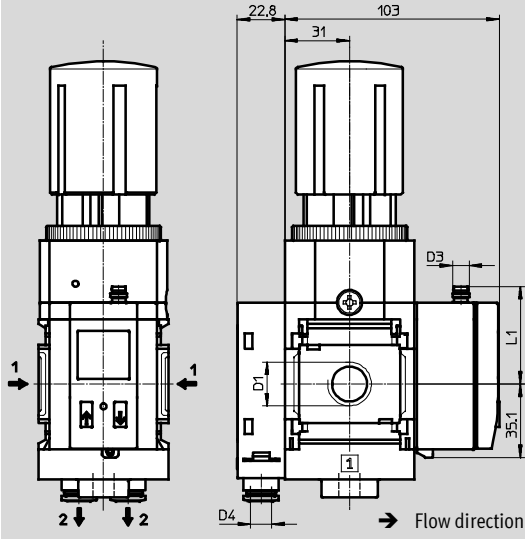
**FESTO**

### Dimensions – Pressure gauge alternatives

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

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

Technical data → Internet: [sde1](#)



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

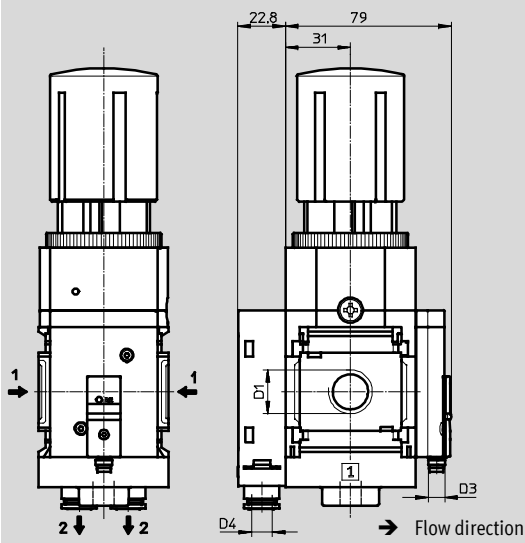
Variant AD3:  
SDE1-D10-G2-MS-L-PI-M12 with  
4-pin plug M12x1, 1 switching out-  
put PNP and 4 ... 20 mA analogue

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 out-  
put NPN and 4 ... 20 mA analogue

Pressure sensor without LCD display (operational status indicator only) AD7 ... AD10, angled outlet block BD/BE

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	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	
MS6-LRPB-1/2-...-AD7/AD8/AD9/AD10-BD	G1/2	M8x1	QS-8	-
MS6-LRPB-1/2-...-AD7/AD8/AD9/AD10-BE			QS-10	

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

## Precision pressure regulators MS6-LRPB, MS series

Technical data

### Dimensions – Rotary knob

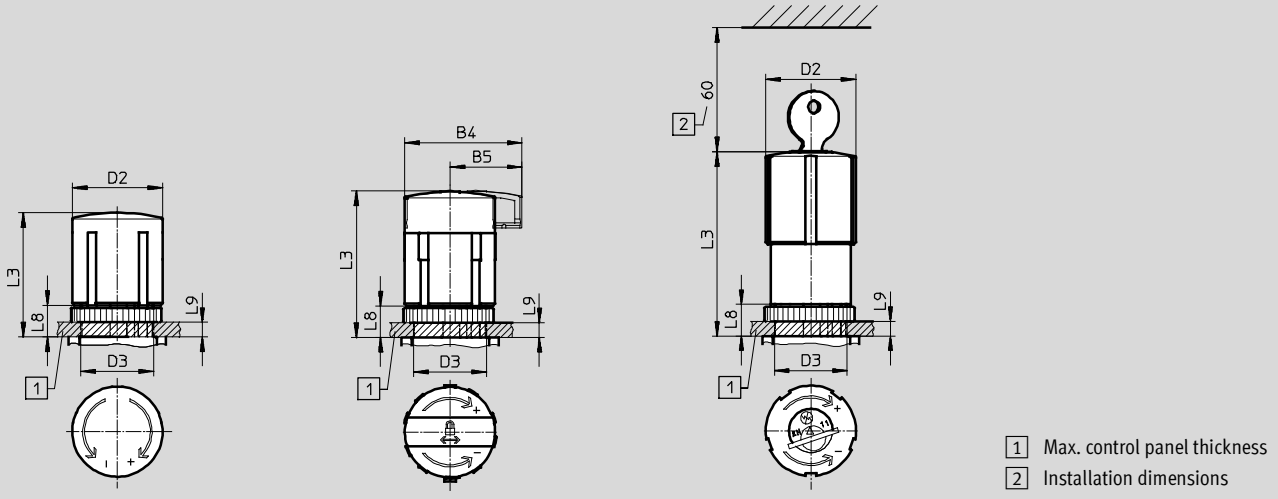
Download CAD data → [www.festo.com](http://www.festo.com)

For installation into control panel

Standard rotary knob with detent

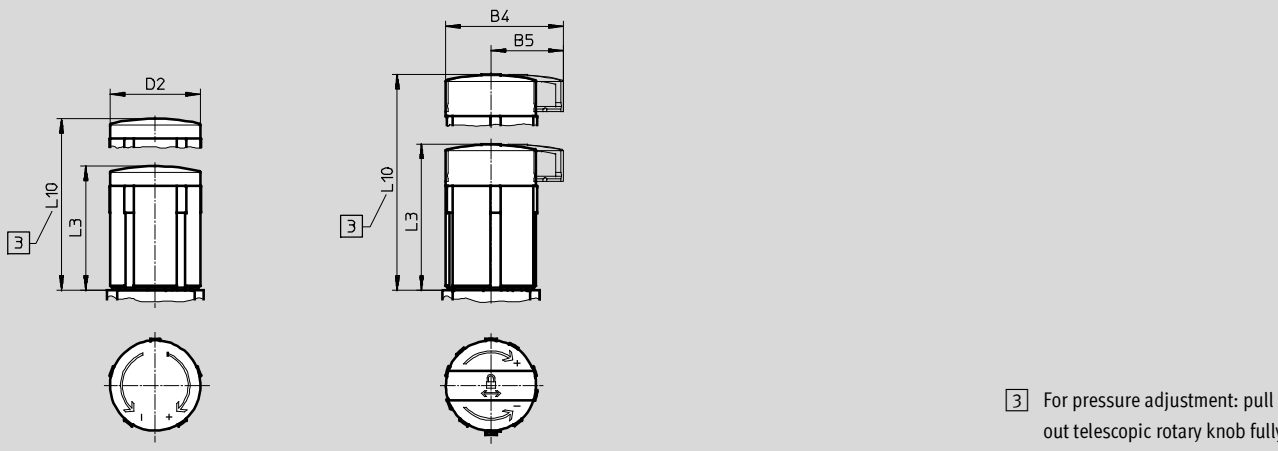
Standard rotary knob with detent,  
lockable via accessories AS

Rotary knob with integrated lock  
E11



Long rotary knob with detent LD

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



Type	B4	B5	D2	D3 +1	L3	L8	L9	L10
MS6-LRPB-...	-	-	51	44	86	22	14	-
MS6-LRPB-...-AS	64.4	39			95.5			
MS6-LRPB-...-E11	-	-	51.8	-	112.1	-	-	-
MS6-LRPB-...-LD	-	-	51	-	86	-	-	139
MS6-LRPB-...-LD-AS	64.4	39			95.5			148.5

## Precision pressure regulators MS6-LRPB, MS series

**FESTO**

Technical data

Ordering data			
Adapter plate A8 for EN pressure gauge 1/8, standard rotary knob with detent, pressure output to rear without angled outlet block			
Size	Connection	Part No.	Type
Pressure regulation range 0.05 ... 2.5 bar, manually operated			
MS6	G1/2	<b>534914</b>	<b>MS6-LRPB-1/2-D4-A8<sup>1)</sup></b>
Pressure regulation range 0.1 ... 4 bar, manually operated			
MS6	G1/2	<b>534917</b>	<b>MS6-LRPB-1/2-D5-A8<sup>1)</sup></b>

1) Free of copper and PTFE

Ordering data			
Adapter plate A8 for EN pressure gauge 1/8, standard rotary knob with detent, pressure output to rear with angled outlet block QS-8			
Size	Connection	Part No.	Type
Pressure regulation range 0.05 ... 0.7 bar, manually operated			
MS6	G1/2	<b>534865</b>	<b>MS6-LRPB-1/2-D2-A8-BD<sup>1)</sup></b>
Pressure regulation range 0.1 ... 12 bar, manually operated			
MS6	G1/2	<b>534874</b>	<b>MS6-LRPB-1/2-D7-A8-BD<sup>1)</sup></b>

1) Free of copper and PTFE

## Precision pressure regulators MS6-LRPB, MS series

Ordering data – Modular products

M Mandatory data →						
Module No.	Series	Size	Function	Connection size	Pressure regulation range/operation	Pressure gauge alternatives
535007	MS	6	LRPB	½, AGB, AGC, AGD, AGE	D2, D4, D5, D7, PO	VS, A8, A8M, A4, AD1 ... AD4, AD7 ... AD10
<b>Order example</b>						
<b>535007</b>	<b>MS</b>	<b>6</b>	<b>- LRPB</b>	<b>- AGD</b>	<b>- D5</b>	<b>- VS</b>

Ordering table		Grid dimension	[mm]	62	Condi- tions	Code	Enter code
M	Module No.	535007					
	Series	Standard				<b>MS</b>	MS
	Size	6				<b>6</b>	6
	Function	Precision pressure regulator for manifold assembly				<b>-LRPB</b>	-LRPB
	Connection size	Thread G½			1	- ½	
		Connecting plate G¼				<b>-AGB</b>	
		Connecting plate G⅜				<b>-AGC</b>	
		Connecting plate G½				<b>-AGD</b>	
		Connecting plate G¾				<b>-AGE</b>	
	Pressure regulation range/ operation	0.05 ... 0.7 bar, manually operated				<b>-D2</b>	
		0.05 ... 2.5 bar, manually operated				<b>-D4</b>	
		0.1 ... 4 bar, manually operated				<b>-D5</b>	
		0.1 ... 12 bar, manually operated				<b>-D7</b>	
		0.1 ... 12 bar, pneumatically actuated (pressure range determined by means of pilot regulator)			1 2	<b>-PO</b>	
	Pressure gauge alternatives	Cover plate			3	<b>-VS</b>	
		Adapter plate for EN pressure gauge ⅛, without pressure gauge			4	<b>-A8</b>	
		Adapter plate for EN pressure gauge ⅛, with precision pressure gauge			4	<b>-A8M</b>	
		Adapter plate for EN pressure gauge ¼, without pressure gauge			4	<b>-A4</b>	
		Pressure sensor with display, plug M8, 1 switching output PNP, 3-pin			1 4 5	<b>-AD1</b>	
		Pressure sensor with display, plug M8, 1 switching output NPN, 3-pin			1 4 5	<b>-AD2</b>	
		Pressure sensor with display, plug M12, 1 switching output PNP, 4-pin, analogue output 4 ... 20 mA			1 4 5	<b>-AD3</b>	
		Pressure sensor with display, plug M12, 1 switching output NPN, 4-pin, analogue output 4 ... 20 mA			1 4 5	<b>-AD4</b>	
		Pressure sensor without display, plug M8, threshold value comparator, PNP, N/O contact			1 5 6	<b>-AD7</b>	
		Pressure sensor without display, plug M8, threshold value comparator, PNP, N/C contact			1 5 6	<b>-AD8</b>	
		Pressure sensor without display, plug M8, window comparator, PNP, N/O contact			1 5 6	<b>-AD9</b>	
		Pressure sensor without display, plug M8, window comparator, PNP, N/C contact			1 5 6	<b>-AD10</b>	

1 ½, PO, AD1 ... AD4, AD7 ... AD10, KD, E11, WPM

2 PO  
Not with EU certification EX4  
Not with long rotary knob LD  
Not with security AS, E11  
Not with mounting type WR

3 VS  
Must be selected with flow direction Z without alternative mounting position KD or without alternative pressure output BD, BE  
Must be selected with alternative mounting position KD without flow direction Z or without alternative pressure output BD, BE

4 A8, A8M, A4, AD1 ... AD4

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

5 AD1 ... AD4, AD7 ... AD10

Measuring range max. 10 bar  
Not with pressure regulation range/operation D2, D4

6 AD7 ... AD10 In combination with flow direction Z only with alternative pressure output BD, BE or  
In combination with flow direction Z only with alternative mounting position KD

### Transfer order code

535007	MS	6	-	LRPB	-		-		-	
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## Precision pressure regulators MS6-LRPB, MS series

**FESTO**

Ordering data – Modular products

Options							
Rotary knob alternative	Alternative mounting position	Security	Alternative pressure output	Type of mounting	EU certification	UL certification	Flow direction
LD	KD	AS, E11	BD, BE	WR, WP, WPM, WPB, WB	EX4	UL1	Z
- LD	-	- AS	- BE	-	-	-	-

Ordering table			
Grid dimension	[mm]	62	
			Conditions Code Enter code
0	Rotary knob alternative	Long rotary knob	7 -LD
	Alternative mounting position	Rotary knob underneath	1 8 -KD
	Security	Lockable via accessories	-AS
		With integrated lock	1 -E11
	Alternative pressure output (p max = 10 bar)	Angled outlet block QS-8	-BD
		Angled outlet block QS-10	-BE
	Type of mounting	Mounting bracket with knurled nut for regulator head	9 10 -WR
		Mounting bracket	11 12 -WP
		Mounting bracket	1 9 11 -WPM
		Mounting bracket for large wall gap	11 13 -WPB
		Mounting bracket	9 -WB
	EU certification	II 2GD to EU Directive 94/9/EG	-EX4
	UL certification	cULus, ordinary location for Canada and USA	-UL1
	Flow direction	Pressure output to front (without pressure output, no pressure gauge)	-Z

- 7 **LD** Not with integrated lock E11
- 8 **KD** In combination with pressure gauge alternatives A8, A4, AD1 ... AD4, AD7 ... AD10 only with flow direction Z
- 9 **WR, WB, WPM** Only with flow direction Z  
Not with alternative mounting position KD
- 10 **WR** Only with flow direction Z  
Not with long rotary knob LD

- 11 **WP, WPM, WPB** Only with connecting plate AGB, AGC, AGD or AGE
- 12 **WP** Not with alternative mounting position KD  
Either only with flow direction Z  
or only with alternative pressure output BD, BE
- 13 **WPB** Not with alternative mounting position KD  
Not with alternative pressure output BD, BE  
Not with flow direction Z

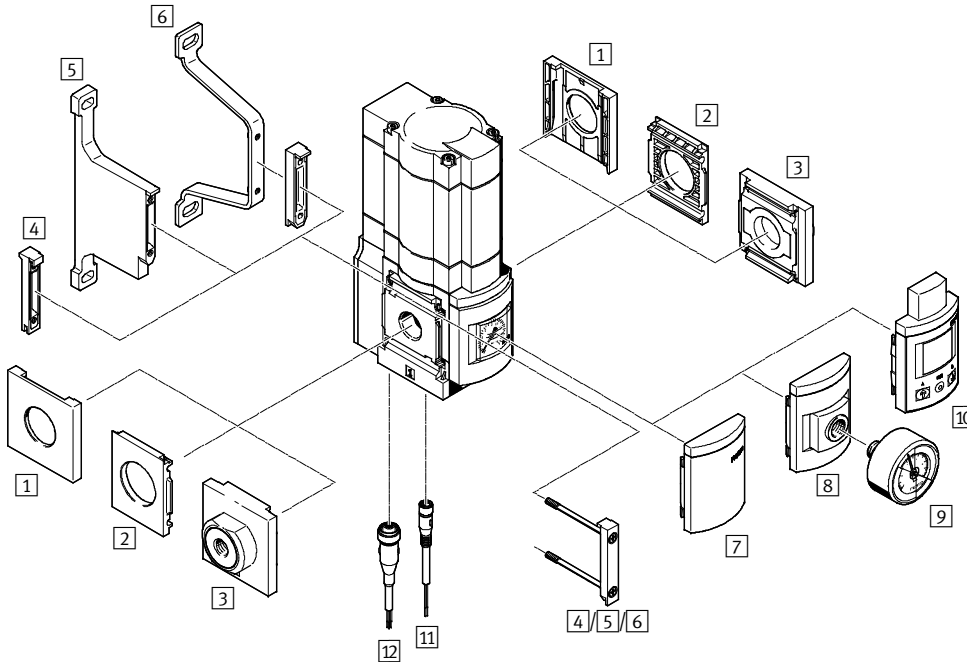
Transfer order code

-  -  -  -  -  -  -  -

# Electrical pressure regulators MS6-LRE, MS series

Peripherals overview

## Electrical pressure regulators MS6-LRE



Note

Additional accessories:

- Module connector for combination with sizes MS4/MS6 or size MS9 → Internet: amv, rmv, armv
- Adapter plate for mounting on profiles → Internet: ipm-80, ipm-40-80, ipm-80-80

### Mounting attachments and accessories

		Individual unit		Combination		→ Page/Internet
		Without connecting plate	With connecting plate	Without connecting plate	With connecting plate	
1	Cover cap MS6-END	–	–	■	–	ms6-end
2	Mounting plate MS6-AEND	■ <sup>1)</sup>	–	■ <sup>2)</sup>	–	ms6-aend
3	Connecting plate MS6-AG...	–	■ <sup>1)</sup>	–	■ <sup>2)</sup>	ms6-ag
4	Module connector MS6-MV	–	–	■	■	ms6-mv
5	Mounting bracket MS6-WPB	■	■	■	■	ms6-wpb
6	Mounting bracket MS6-WPE	■	■	■	■	ms6-wpe
7	Cover plate VS	■	■	■	■	74
8	Adapter plate for EN pressure gauge 1/4 A4	■	■	■	■	74
9	Pressure gauge MA	■	■	■	■	98
10	Control unit with display OP	■	■	■	■	74
11	Connecting cable NEBU-M8...-LE3	■	■	■	■	98
12	Connecting cable NEBU-M12...-LE5	■	■	■	■	98

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

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

## Electrical pressure regulators MS6-LRE, MS series

**FESTO**

Type codes

		MS	6	-	LRE	-	1/4	-	D6	-	PU
<b>Series</b>											
MS	Standard service unit										
<b>Size</b>											
6	Grid dimension 62 mm										
<b>Service function</b>											
LRE	Electrical pressure regulator										
<b>Pneumatic connection</b>											
1/4	Thread G1/4										
1/2	Thread G1/2										
<b>Pressure regulation range</b>											
D6	Pressure regulation range 0.3 ... 7 bar										
D7	Pressure regulation range 0.5 ... 12 bar										
<b>Electrically controlled pressure output (integrated pressure sensor with electrical output)</b>											
	None										
PU	Plug, M8, 3-pin, V out										

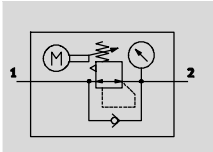
### Further variants can be ordered using the modular system → 74

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

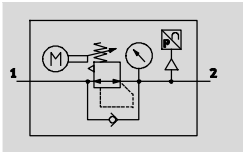
## Electrical pressure regulators MS6-LRE, MS series




Technical data

with pressure gauge



with pressure gauge and integrated pressure sensor



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



-  - Note

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

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	Output pressure constant, with primary pressure compensation, with/without secondary venting		
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		

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

## Electrical pressure regulators MS6-LRE, MS series

**FESTO**

Technical data

Standard nominal flow rate $q_{nN}^{1)}$ [l/min]				
Pneumatic connection		G $\frac{1}{4}$	G $\frac{3}{8}$	G $\frac{1}{2}$
Pressure regulation range	D5	2,400 <sup>2)</sup>	5,500 <sup>2)</sup>	7,500 <sup>2)</sup>
	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 <sup>1)</sup>		
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	
Operating pressure	[bar] 0.8 ... 20 (0.8 ... 10) <sup>1)</sup>
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] 0 ... +50
Temperature of medium	[°C] 0 ... +50
Storage temperature	[°C] –10 ... +50
Corrosion resistance class CRC <sup>2)</sup>	2
CE symbol (declaration of conformance)	In accordance with EU EMC Directive <sup>3)</sup>
UL certification	cULus recognized (OL)
Certification	C-Tick

- 1) Value in brackets applies to MS6-LRE with UL certification.  
 2) Corrosion resistance class 2 according 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.  
 3) For information about the applicability of the component see the manufacturer's EC declaration of conformity at: [www.festo.com](http://www.festo.com) → Support → User documentation.  
 If the component is subject to restrictions on usage in residential, office or commercial environments or small businesses, further measures to reduce the emitted interference may be necessary.

## Electrical pressure regulators MS6-LRE, MS series

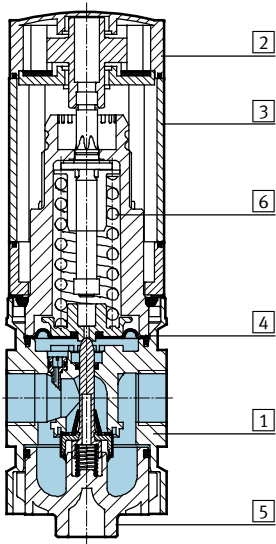
Technical data

### Weights [g]

Electrical pressure regulator	1,280
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### 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

# Electrical pressure regulators MS6-LRE, MS series

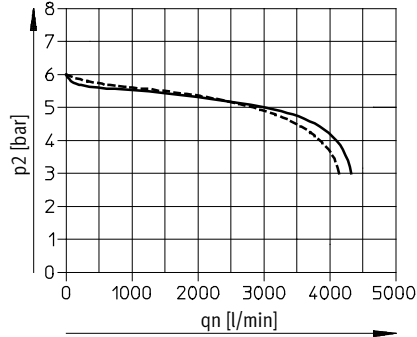
Technical data

**FESTO**

## Standard flow rate $q_n$ as a function of output pressure $p_2$

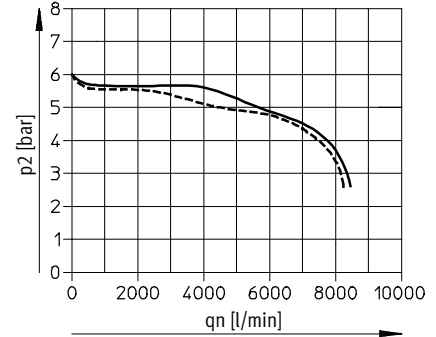
MS6-LRE-1/4

Input pressure  $p_1 = 10$  bar



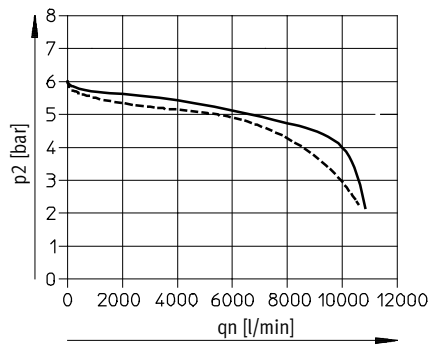
— D6: 0.3 ... 7 bar  
- - - D7: 0.5 ... 12 bar

MS6-LRE-3/8



MS6-LRE-1/2

Input pressure  $p_1 = 10$  bar



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

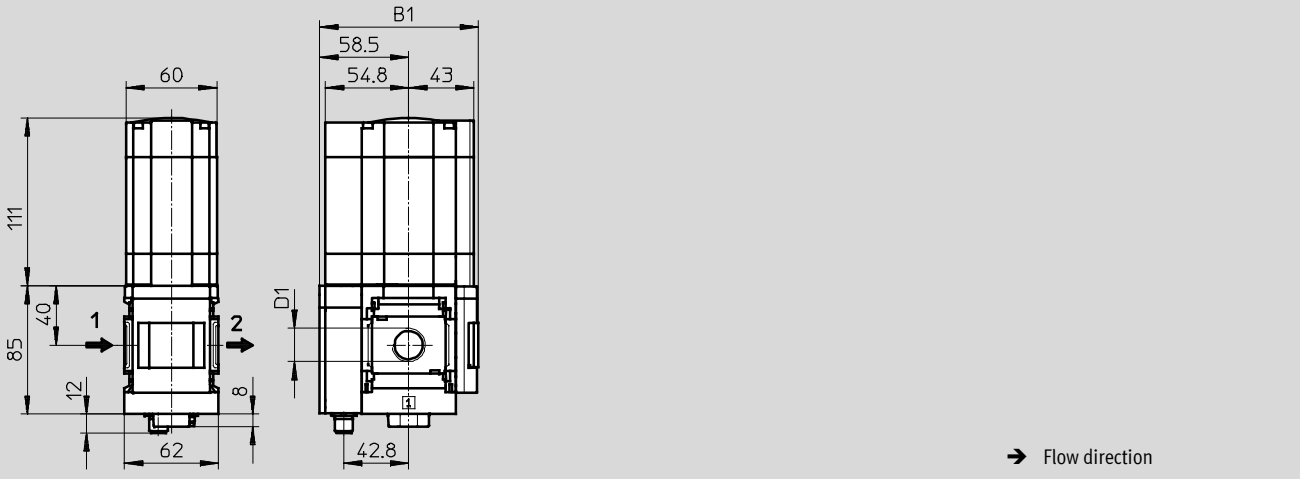
## Electrical pressure regulators MS6-LRE, MS series

Technical data

### Dimensions – Standard

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

With pressure gauge, display unit [bar]



Type	B1 Pressure gauge		D1
	Standard scale	Red-green scale	
MS6-LRE-1/4	104.5	106	G1/4
MS6-LRE-3/8			G3/8
MS6-LRE-1/2			G1/2

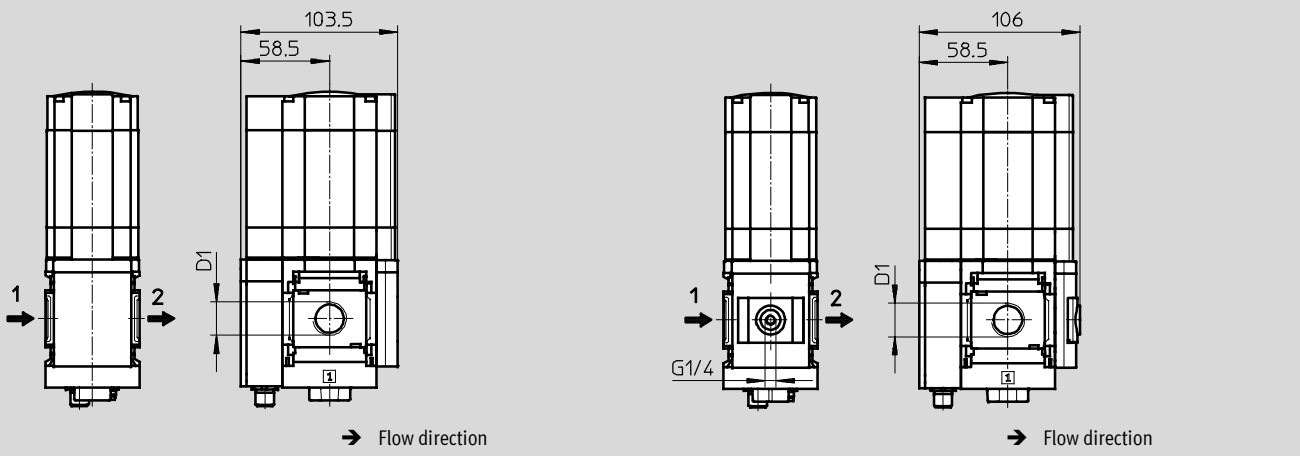
Note: This product conforms to ISO 1179-1 and to ISO 228-1

### Dimensions – Pressure gauge alternatives

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

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

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



## Electrical pressure regulators MS6-LRE, MS series

Technical data

**FESTO**

### Dimensions – Pressure gauge alternatives

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

Control unit with display OP



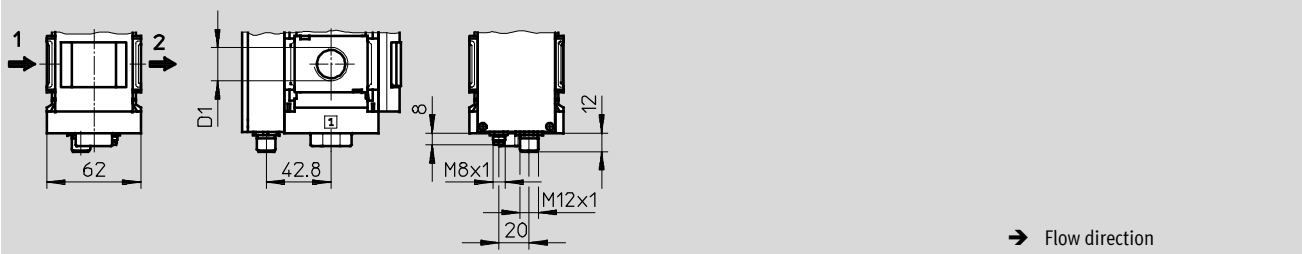
Type	D1
MS6-LRE-1/4	G1/4
MS6-LRE-3/8	G3/8
MS6-LRE-1/2	G1/2

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

### Dimensions – Electrically controlled pressure output

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

Integrated pressure sensor with electrical output PI/PU



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	G1/4	–	–	535364	MS6-LRE-1/4-D7
	G1/2	535348	MS6-LRE-1/2-D6	–	–
Electrically controlled pressure output (integrated pressure sensor with voltage output), M8x1 plug, 3-pin					
MS6	G1/4	535362	MS6-LRE-1/4-D6-PU	–	–

## Electrical pressure regulators MS6-LRE, MS series

Ordering data – Modular products

**M** Mandatory data →

Module No.	Series	Size	Function	Connection sizes	Pressure regulation range
535191	MS	6	LRE	1/4, 3/8, 1/2, AGB, AGC, AGD, AGE	D5, D6, D7, D8
<b>Order example</b>					
<b>535191</b>	<b>MS</b>	<b>6</b>	<b>- LRE</b>	<b>- AGC</b>	<b>- D6</b>

Ordering table		Grid dimension	[mm]	62	Condi- tions	Code	Enter code
<b>M</b>	Module No.	<b>535191</b>					
	Series	Standard				<b>MS</b>	MS
	Size	6				<b>6</b>	6
	Function	Electrical pressure regulator				<b>-LRE</b>	-LRE
	Connection sizes	Thread G1/4				<b>-1/4</b>	
		Thread G3/8				<b>-3/8</b>	
		Thread G1/2				<b>-1/2</b>	
		Connecting plate G1/4				<b>-AGB</b>	
		Connecting plate G3/8				<b>-AGC</b>	
		Connecting plate G1/2				<b>-AGD</b>	
		Connecting plate G3/4				<b>-AGE</b>	
	Pressure regulation range	0.3 ... 4 bar				<b>-D5</b>	
		0.3 ... 7 bar				<b>-D6</b>	
		0.5 ... 12 bar				<b>-D7</b>	
		0.5 ... 16 bar				<b>-D8</b>	

**Transfer order code**

<b>535191</b>	<b>MS</b>	<b>6</b>	<b>- LRE</b>	<b>-</b>	<b>-</b>	<b>-</b>
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## Electrical pressure regulators MS6-LRE, MS series

Ordering data – Modular products

Options								
Pressure gauge alternatives	Alternative pressure gauge scale	Secondary venting	Electrically controlled pressure output	Sensor cables	Supply cable	Type of mounting	UL certification	Flow direction
VS, A4, RG, OP	PSI, MPA	OS	PI, PU	SK2, SK5	VK2, VK5	WBE, WPB	UL1	Z
- OP	-	- OS	- PU	- SK5	-	-	-	-

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	
	Integrated pressure gauge, red-green scale			-RG	
	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	
	Wall mounting plate for large wall gap		4	-WPB	
UL certification	cULus, ordinary location for Canada and USA			-UL1	
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, RG, 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

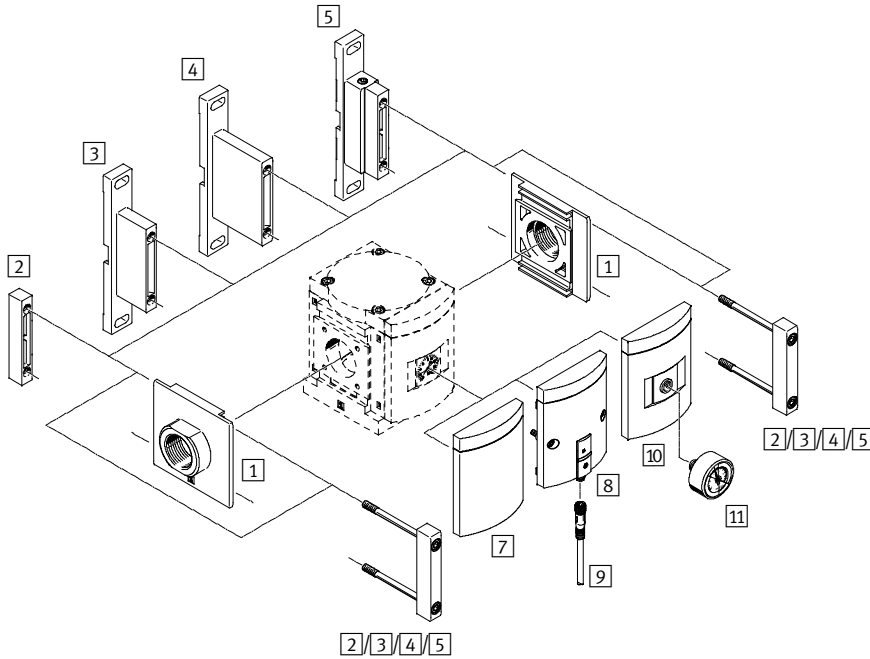
Transfer order code


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**Pressure regulators MS9-LR, MS series**

Peripherals overview

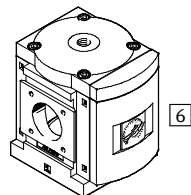
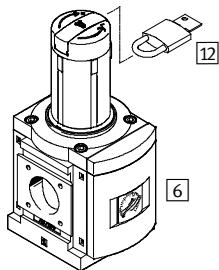
**Pressure regulator MS9-LR**



 Note  
 Additional accessories:  
 – Module connector for combinations with size MS6, MS9 or MS12  
 → Internet: rmv, armv

**manually operated**

**pneumatically actuated**



## Pressure regulators MS9-LR, MS series

Peripherals overview

**FESTO**

Mounting attachments and accessories					
		Individual unit		Combination Module without connect- ing thread, without connecting plate G	→ Page/ Internet
		With female thread ¾ or 1	With connecting plate AG...		
			Without EU certification EX4	With EU certification EX4	
1	Connecting plate MS9-AG...	-	■	■	ms9-ag
2	Module connector MS9-MV	-	-	■	ms9-mv
3	Mounting bracket MS9-WP	■	■	■	ms9-wp
4	Mounting bracket MS9-WPB	■	■	■	ms9-wp
5	Mounting bracket MS9-WPM	■	■	-	ms9-wp
6	MS pressure gauge AG	■	■	■	86
7	Cover plate VS	■	■	■	86
8	Pressure sensor without display AD7 ... AD10	■	■	-	86
9	Connecting cable NEBU-M8...-LE3	■	■	-	98
10	Adapter plate for EN pressure gauge ¼ A4	■	■	■	86
11	Pressure gauge MA	■	■	■	98
12	Padlock LRVS-D	■	■	■	98

**New**  
**Variant EX4, UL1**

**Pressure regulators MS9-LR, MS series**

Type codes

**FESTO**

		MS	9	-	LR	-	G	-	D5	-	DI	-	AG	-	BAR	-	AS	
<b>Series</b>																		
MS	Standard service unit																	
<b>Size</b>																		
9	Grid dimension 90 mm																	
<b>Service function</b>																		
LR	Pressure regulator																	
<b>Connection size</b>																		
G	Module without connecting thread, without connecting plate																	
<b>Pressure regulation range/operation</b>																		
D5	0.5 ... 4 bar, manually operated																	
D6	0.5 ... 7 bar, manually operated																	
D7	0.5 ... 12 bar, manually operated																	
<b>Alternative actuation principle</b>																		
	Piloted																	
DI	Directly actuated (only with pressure regulation range D5/D6)																	
<b>Pressure gauge</b>																		
AG	MS pressure gauge																	
<b>Pressure gauge scale</b>																		
BAR	Bar																	
<b>Security</b>																		
AS	Rotary knob with detent, can be locked using accessories																	

**Additional variants can be ordered using the modular product system → 86**

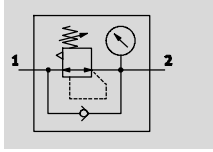
- Connecting plates
- Pressure regulation range/operation
- Pressure gauge alternatives
- Alternative pressure gauge scale
- Secondary venting
- Security lock
- Type of mounting
- EU certification
- UL certification
- Alternative flow direction

## Pressure regulators MS9-LR, MS series

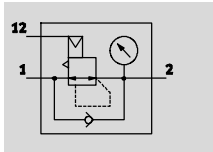
**FESTO**




Technical data

Pressure regulation range/operation  
D5/D6/D7/D8, manually operated



P0, pneumatically actuated



-  - Flow rate  
6,500 ... 33,000 l/min
-  - Temperature range  
-10 ... +60 °C
-  - Operating pressure  
1 ... 20 bar



The pressure regulator maintains an essentially constant output pressure p2 independent of pressure fluctuations in the system and air consumption. The output pressure p2 can be set within the pressure regulation range either manually using the rotary


knob or pneumatically via a pilot pressure p12 by an external pilot regulator. When switching off the operating pressure, the output pressure p2 is vented via connection 3 (secondary venting).

- Good regulation characteristics with low hysteresis and primary pressure compensation
- High flow rate with minimal pressure drop
- Piloted or directly actuated diaphragm regulator
- Four pressure regulation ranges: 0.5 ... 4 bar, 0.5 ... 7 bar, 0.5 ... 12 bar and 0.5 ... 16 bar
- Available with or without secondary venting
- Actuator lock to protect set values against adjustment
- Return flow option for exhausting from output port 2 to output port 1 already integrated
- Optional pressure sensor
- Optional device variant EX4 for use in potentially explosive areas in zones 1, 2, 21 and 22

General technical data				
Pneumatic connection 1, 2	G3/4	G1	G1/2 ... G1 1/2 (with connecting plate AG...)	- (without connecting thread G)
Pilot air connection 12 with pressure regulation range/operation P0	G1/4			
Design	Piloted diaphragm regulator Directly actuated diaphragm regulator			
Regulator type	Piloted	Output pressure constant, with return flow action, with primary pressure compensation, with secondary venting		
	Directly actuated	Output pressure constant, with return flow action, with/without secondary venting		
Type of mounting	Via accessories In-line installation Front panel mounting			
Mounting position	Any <sup>1)</sup>			
Actuation security	Rotary knob with detent Rotary knob with detent, can be locked using accessories Rotary knob with integrated lock			
Pressure regulation range/operation	D5 [bar]	0.5 ... 4, manually operated		
	D6 [bar]	0.5 ... 7, manually operated		
	D7 [bar]	0.5 ... 12, manually operated (0.5 ... 10 with pressure sensor variant AD...)		
	D8 [bar]	0.5 ... 16, manually operated (0.5 ... 10 with pressure sensor variant AD...)		
	P0 [bar]	0.5 ... 16, pneumatically actuated <sup>2)</sup>		
Max. pressure hysteresis [bar]	0.4			
Pressure display	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 G1/4 prepared			

1) The pressure regulator must be mounted vertically when combined with a pressure sensor as condensate must not collect in the pressure sensor.

2) Output pressure p2 corresponds roughly to the applied pilot pressure p12.

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

## Pressure regulators MS9-LR, MS series

**FESTO**

Technical data

Standard nominal flow rate $q_{nN}^{1)}$ [l/min]					
Design		Piloted diaphragm regulator		Directly actuated diaphragm regulator DI	
Pneumatic connection		G $\frac{3}{4}$	G1	G $\frac{3}{4}$	G1
Pressure regulation range	D5	24,000 $\pm 15\%^{2)}$	33,000 $\pm 15\%^{2)}$	6,500 $\pm 15\%^{2)}$	18,500 $\pm 15\%^{2)}$
	D6	24,000 $\pm 15\%$	28,000 $\pm 15\%$	8,000 $\pm 15\%$	9,000 $\pm 15\%$
	D7	24,000 $\pm 15\%$	28,000 $\pm 15\%$	–	–
	D8	20,000 $\pm 15\%$	28,000 $\pm 15\%$	–	–
	PO	23,000 $\pm 15\%$	29,000 $\pm 15\%$	–	–

1) Measured at  $p_1 = 10$  bar and  $p_2 = 6$  bar,  $\Delta p = 1$  bar

2) Measured at  $p_1 = 10$  bar and  $p_2 = 4$  bar,  $\Delta p = 1$  bar

Operating and environmental conditions		
EU certification	–	EX4
Operating pressure [bar]	1 ... 20	
Operating medium	Compressed air in accordance with ISO 8573-1:2010 [7:4:4]	
Note on operating/pilot medium	Operation with lubricated medium possible (in which case lubricated operation will always be required)	Operation with lubricated medium not possible
Ambient temperature [°C]	–10 ... +60 (0 ... +50) <sup>1)</sup>	
Temperature of medium [°C]	–10 ... +60 (0 ... +50) <sup>1)</sup>	
Storage temperature [°C]	–10 ... +60	
Corrosion resistance class CRC <sup>2)</sup>	2	
UL certification	cULus recognized (OL)	

1) Value in brackets applies to MS9-LR with pressure sensor AD...

2) Corrosion resistance class 2 according 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.

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 T60 °C X
ATEX ambient temperature	–10 °C $\leq T_a \leq$ +60 °C
CE mark (see declaration of conformity)	To EU Explosion Protection Directive (ATEX)



## Pressure regulators MS9-LR, MS series

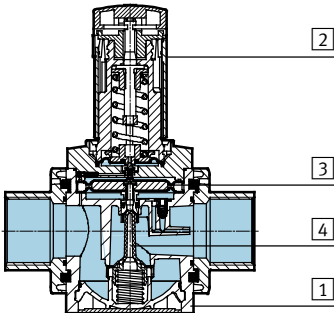
Technical data

**FESTO**

Weight [g]	
Pressure regulator	1,400
Pressure regulator with rotary knob with integrated lock E11	1,700

### Materials

Sectional view



Pressure regulator		
1	Housing	Die-cast aluminium
2	Rotary knob	PA
	Rotary knob with integrated lock E11	Aluminium
3	Diaphragm	NBR
4	Valve stem	Wrought aluminium alloy, NBR, POM
-	Cover	PA, reinforced
-	Connecting plate, module connector, mounting bracket	Die-cast aluminium
-	Seals	NBR
Note on materials		RoHS-compliant

## Pressure regulators MS9-LR, MS series

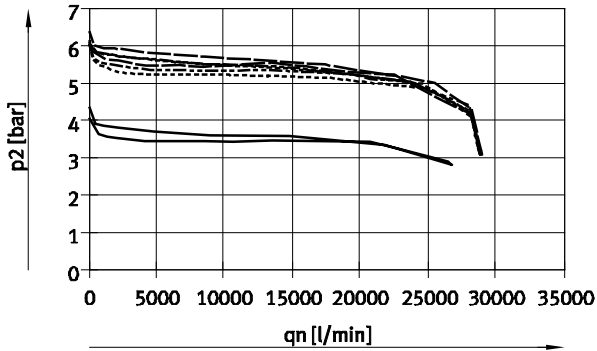
Technical data

**FESTO**

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

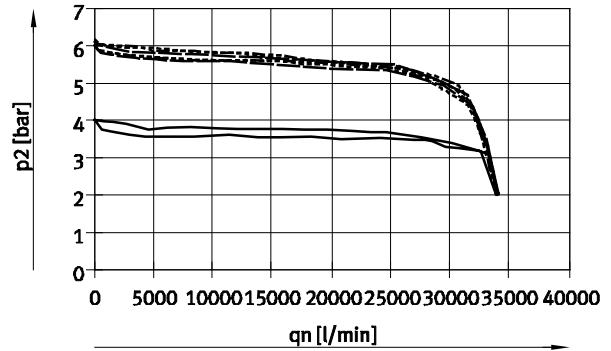
Piloted diaphragm regulator

Pneumatic connection  $G\frac{3}{4}$



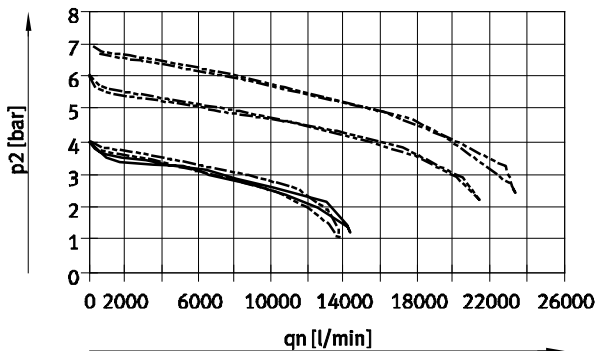
— D5: 0.5 ... 4 bar      - · - · D7: 0.5 ... 12 bar  
- - - D6: 0.5 ... 7 bar      · · · · D8: 0.5 ... 16 bar

Pneumatic connection G1



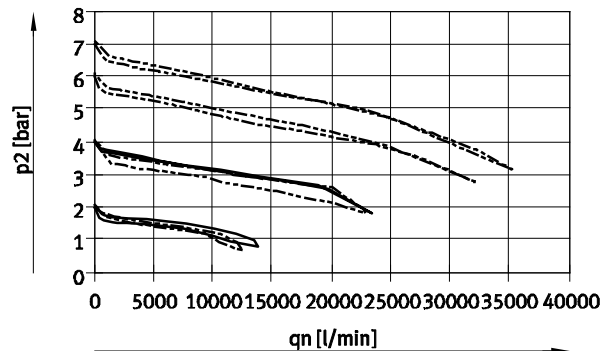
Directly actuated diaphragm regulator DI

Pneumatic connection  $G\frac{3}{4}$



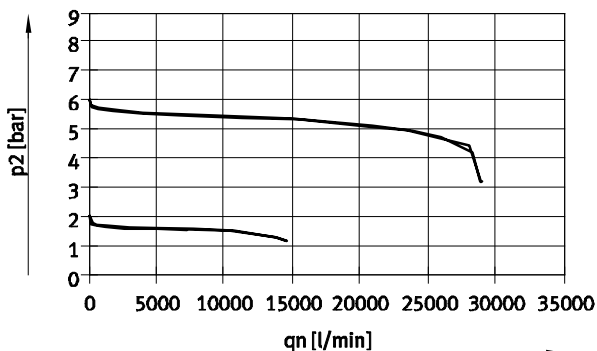
— D5: 0.5 ... 4 bar  
- - - D6: 0.5 ... 7 bar

Pneumatic connection G1

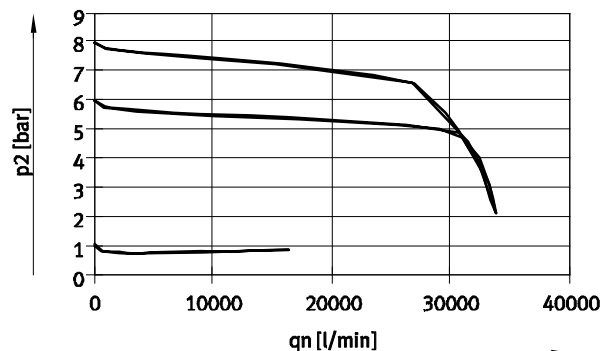


External pilot regulator, pressure regulation range/operation PO

Pneumatic connection  $G\frac{3}{4}$



Pneumatic connection G1



## Pressure regulators MS9-LR, MS series

Technical data

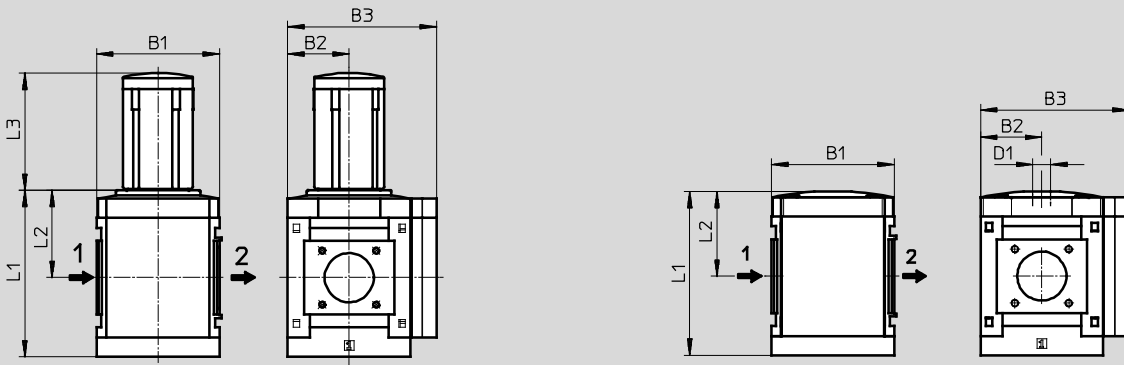
**FESTO**

### Dimensions – Basic version

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

Pressure regulation range/operation D5/D6/D7/D8, manually operated, without connecting thread G, cover plate VS, rotary knob with detent

Pressure regulation range/operation PO, pneumatically actuated, without connecting thread G, cover plate VS



→ Flow direction

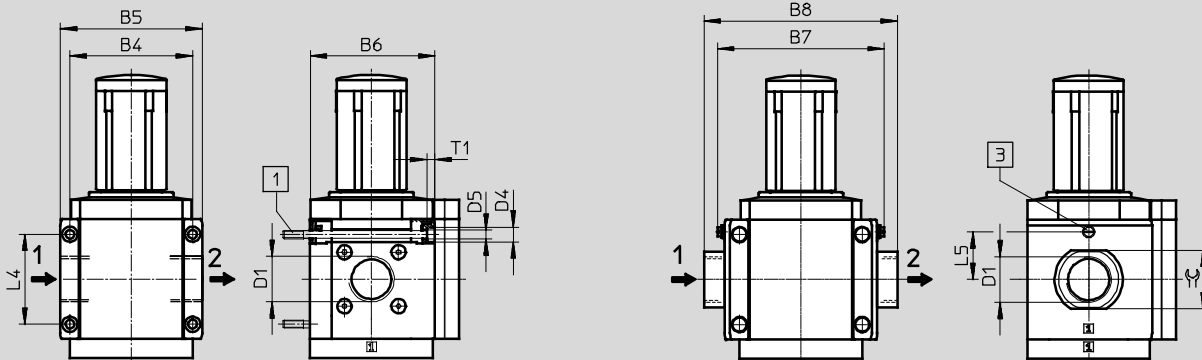
Type	B1	B2	B3	D1	L1		L2		L3
					Piloted	Directly actuated DI	Piloted	Directly actuated DI	
MS9-LR-G-D5/D6/D7/D8	90	45	109	–	129	122	71.4	64	86
MS9-LR-G-PO				G $\frac{1}{4}$	120	–	62	–	–

### Dimensions – Connecting thread/connecting plate

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

With connecting thread  $\frac{3}{4}$  or 1

With connecting plate AG...



1 Mounting screw M6xmin.90 to DIN 912 (not included in the scope of delivery) for wall mounting without mounting bracket

3 Earthing screw M4x8 (only with MS9-...-EX4)

→ Flow direction

Type	B4	B5	B6	B7		B8	D1	D4	D5	L4	L5	T1	⌀
				EX4	EX4								
MS9-LR- $\frac{3}{4}$	90	104	91.5	–	–	–	G $\frac{3}{4}$	11	6.5	66	–	6	–
MS9-LR-1							G1						
MS9-LR-AGD	–	–	–	112	122	132	G $\frac{1}{2}$	–	–	–	35	–	30
MS9-LR-AGE						132	G $\frac{3}{4}$						36
MS9-LR-AGF						142	G1						41
MS9-LR-AGG						162	G $\frac{1}{4}$						50
MS9-LR-AGH						176	G $\frac{1}{2}$						55

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

## Pressure regulators MS9-LR, MS series

Technical data

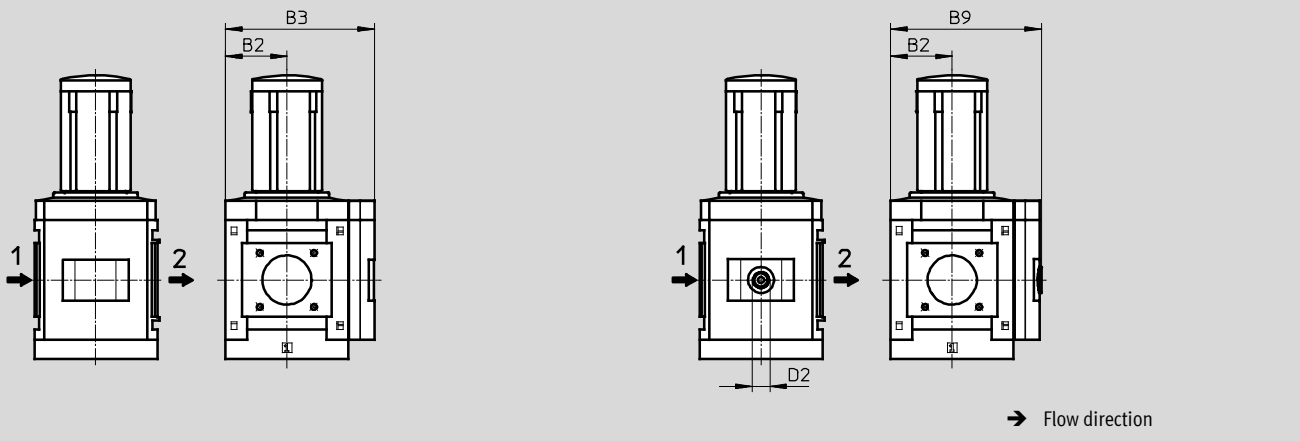
**FESTO**

### Dimensions – Pressure gauge alternatives

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

Integrated MS pressure gauge with standard scale AG or red/green scale RG

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



Type	B2	B3	B9	D2
MS9-LR-...-AG/RG	45	109	–	–
MS9-LR-...-A4		–	110	G1/4

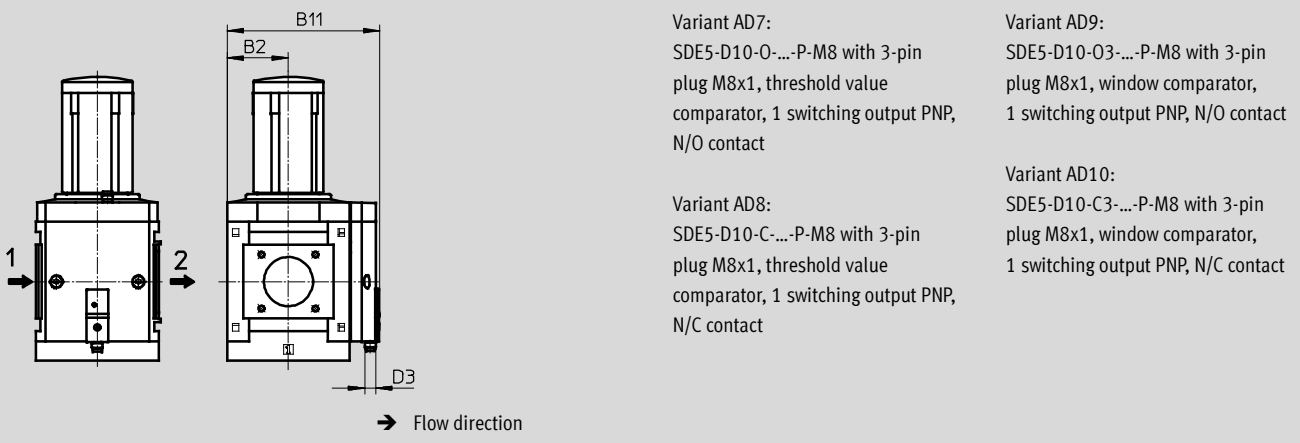
– Note: This product conforms to ISO 1179-1 and to ISO 228-1

### Dimensions – Pressure gauge alternatives

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

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

Technical data → Internet: [sde5](http://sde5)



Variant AD7:  
SDE5-D10-0-...-P-M8 with 3-pin plug M8x1, threshold value 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 AD9:  
SDE5-D10-03-...-P-M8 with 3-pin plug M8x1, window comparator, 1 switching output PNP, N/O contact

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

Type	B2	B11	D3
MS9-LR-...-AD7/AD8/AD9/AD10	45	112	M8

## Pressure regulators MS9-LR, MS series

Technical data

**FESTO**

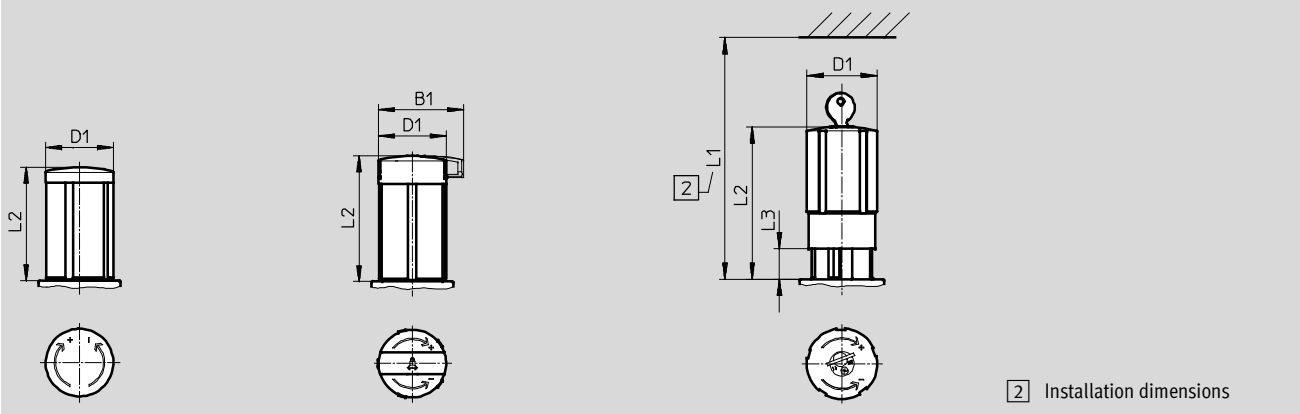
### Dimensions – Rotary knob

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

Rotary knob with detent

Rotary knob with detent,  
can be locked using accessories AS

Rotary knob with integrated lock  
E11



Type	B1	D1	L1	L2	L3
MS9-LR	–	52	–	86	–
MS9-LR-...-AS	65	52	–	96	–
MS9-LR-...-E11	–	52	174	114	25

### Ordering data

Integrated pressure gauge, display unit [bar], rotary knob with detent, can be locked using accessories

Size	Connection	Piloted diaphragm regulator		Directly actuated diaphragm regulator	
		Part No.	Type	Part No.	Type
Pressure regulation range 0.5 ... 4 bar, manually operated					
MS9	–	564134	MS9-LR-G-D5-AG-BAR-AS	564135	MS9-LR-G-D5-DI-AG-BAR-AS
Pressure regulation range 0.5 ... 7 bar, manually operated					
MS9	–	564136	MS9-LR-G-D6-AG-BAR-AS	564137	MS9-LR-G-D6-DI-AG-BAR-AS
Pressure regulation range 0.5 ... 12 bar, manually operated					
MS9	–	564138	MS9-LR-G-D7-AG-BAR-AS	–	–

## Pressure regulators MS9-LR, MS series

Ordering data – Modular products

M Mandatory data						O Options	M
Module No.	Series	Size	Function	Connection size	Pressure range/operation	Regulator type	Pressure gauge/pressure gauge alternatives
562530	MS	9	LR	¾, 1, AGD, AGE, AGF, AGG, AGH, G	D5, D6, D7, D8, PO	DI	AG, VS, A4, RG, AD7 ... AD10
<b>Ordering example</b>							
562530	MS	9	-LR	-G	-D5	-	-AG

Ordering table		Grid dimension [mm]	90	Condi-tions	Code	Enter code
M	Module No.	562530				
	Series	Standard			MS	MS
	Size	9			9	9
	Function	Pressure regulator			-LR	-LR
	Connection size	Thread G¾		1	-¾	
		Thread G1		1	-1	
		Connecting plate G½			-AGD	
		Connecting plate G¾			-AGE	
		Connecting plate G1			-AGF	
		Connecting plate G1¼			-AGG	
		Connecting plate G1½			-AGH	
		Module without connecting thread, without connecting plate		1	-G	
	Pressure range/operation	0.5 ... 4 bar, manually operated			-D5	
		0.5 ... 7 bar, manually operated			-D6	
		0.5 ... 12 bar, manually operated			-D7	
		0.5 ... 16 bar, manually operated		1	-D8	
		Max. 16 bar, pneumatically actuated (pressure range defined by means of pilot regulator)		2	-PO	
O	Regulator type	Directly actuated		3	-DI	
M	Pressure gauge/pressure gauge alternatives	MS pressure gauge			-AG	
		Cover plate			-VS	
		Adapter plate for EN pressure gauge ¼, without pressure gauge			-A4	
		Integrated pressure gauge, red/green scale		4	-RG	
		Pressure sensor without display, plug M8, threshold value comparator, PNP, N/O contact		1 5	-AD7	
		Pressure sensor without display, plug M8, threshold value comparator, PNP, N/C contact		1 5	-AD8	
		Pressure sensor without display, plug M8, window comparator, PNP, N/O contact		1 5	-AD9	
		Pressure sensor without display, plug M8, window comparator, PNP, N/C contact		1 5	-AD10	

- 1 ¾, 1, G, D8, AD7, AD8, AD9, AD10, E11, WPM  
Not with EU certification EX4
- 2 PO  
Not with regulator type DI  
Not with security AS, E11

- 3 DI  
Not with pressure range D7, D8
- 4 RG  
Not with alternative pressure gauge scale PSI,  
PSI scale serves only as an auxiliary scale
- 5 AD7 ... AD10  
Measuring range max. 10 bar

### Transfer order code

562530	MS	9	-LR	-	-	-	-	-	-
--------	----	---	-----	---	---	---	---	---	---

## Pressure regulators MS9-LR, MS series

**FESTO**

Ordering data – Modular products

Options							
Alternative pressure gauge scale	Secondary venting	Alternative mounting position	Security	Type of mounting	EU certification	UL certification	Alternative flow direction
PSI, MPA, BAR	OS	KD	AS, E11	WP, WPM, WPB	EX4	UL1	Z
- BAR	-	-	- AS	-	-	-	-

Ordering table					
Grid dimension	[mm]	90	Condi- tions	Code	Enter code
0	Alternative pressure gauge scale	Psi	6	-PSI	
		MPa	6	-MPA	
		Bar	6	-BAR	
	Secondary venting	Without secondary venting	7	-OS	
	Alternative mounting position	Rotary knob underneath (connection underneath with PO)		-KD	
	Security	Can be locked using accessories		-AS	
		With integrated lock	1	-E11	
	Type of mounting	Mounting bracket	8	-WP	
		Mounting bracket	1 8	-WPM	
		Mounting bracket for large wall gap	8	-WPB	
	EU certification	II 2GD to EU Directive 94/9/EG		-EX4	
	UL certification	cULus, ordinary location for Canada and USA		-UL1	
	Alternative flow direction	Flow direction from right to left		-Z	

1 ¾, 1, G, D8, AD7, AD8, AD9, AD10, E11, WPM

Not with EU certification EX4

7 OS

Only with regulator type DI

8 WP, WPM, WPB

Not with module G

6 PSI, MPA, BAR

Not with pressure gauge alternatives VS, A4, AD7, AD8, AD9, AD10

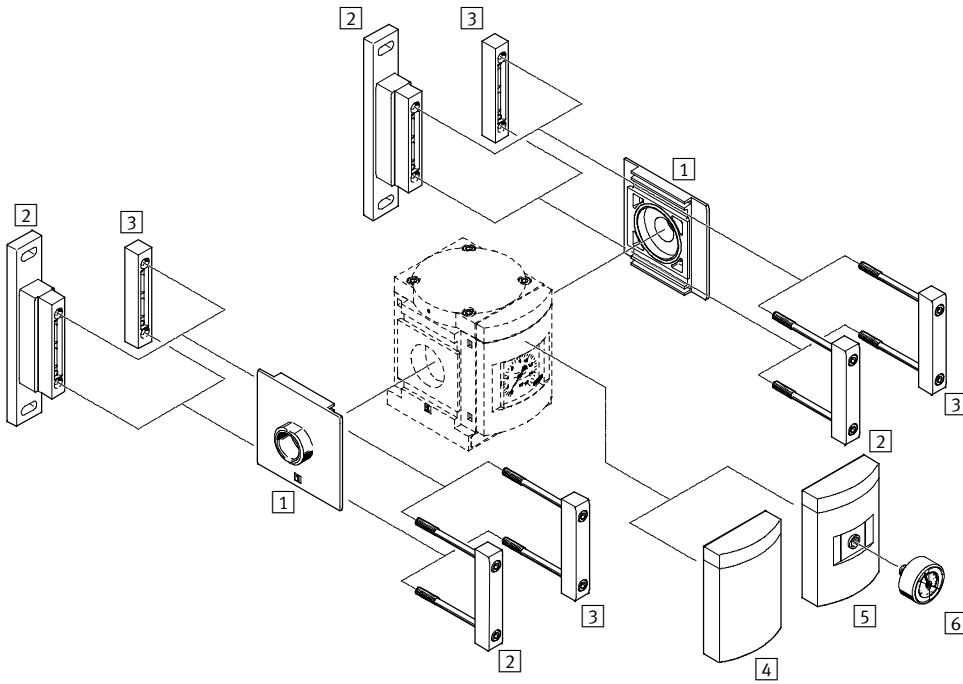
Transfer order code


-  -  -  -  -  -  -  -

# Pressure regulators MS12-LR, MS series

Peripherals overview

## Pressure regulator MS12-LR

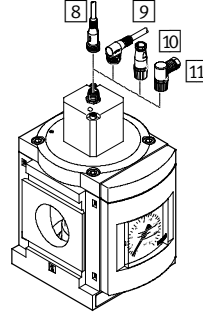
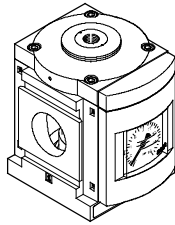
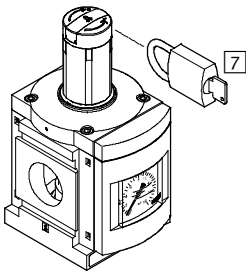


-  - Note  
 Additional accessories:  
 - Module connector  
 for combination with size MS9  
 → Internet: armv

manually operated

pneumatically actuated

solenoid actuated





## Pressure regulators MS12-LR, MS series

Peripherals overview

FESTO

Mounting attachments and accessories		→ Page/Internet
1	Connecting plate MS12-AG...	ms12-ag
2	Mounting bracket MS12-WP	ms12-wp
3	Module connector MS12-MV	ms12-mv
4	Cover plate VS	96
5	Adapter plate for EN pressure gauge 1/4 A4	96
6	Pressure gauge MA	98
7	Padlock LRVS-D	98
8	Connecting cable NEBU-M12G...-LE4	98
9	Connecting cable NEBU-M12W...-LE4	98
10	Sensor socket SIE-GD	98
11	Angled plug socket SIE-WD	98

# Pressure regulators MS12-LR, MS series

Type codes

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/actuation mode	
D7	0.5 ... 12 bar, manually operated
PO	0.5 ... 16 bar, pneumatically actuated
PE6	0.15 ... 6 bar, solenoid actuated
Rotary knob	
Pressure regulation range/actuation mode D7	
LD	Long rotary knob
Pressure regulation range/actuation mode PO/PE6	
	No rotary knob
Security	
Pressure regulation range/actuation mode D7	
AS	Rotary knob with detent, lockable via accessories
Pressure regulation range/actuation mode PO/PE6	
	No rotary knob

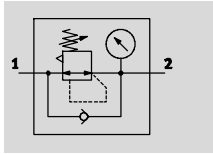
**Further variants can be ordered using the modular system → 96**

- Connecting plates
- Pressure regulation range/actuation mode
- Pressure gauge alternatives
- Alternative pressure gauge scale
- Security
- Type of mounting
- Alternative flow direction

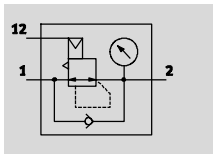
# Pressure regulators MS12-LR, MS series

Technical data

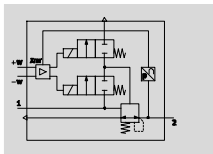
Pressure regulation range/actuation mode  
D6/D7/D8, manually operated







PO, pneumatically actuated



PE6, solenoid actuated



-  Flow rate  
12,000 ... 22,000 l/min
-  Temperature range  
-10 ... +60 °C
-  Operating pressure  
0.8 ... 21 bar
-  www.festo.com

Wearing parts kits  
→ 95



The pressure regulator maintains an essentially constant output pressure p2 independent of pressure fluctuations in the system and air consumption. The output pressure p2 can be set within the pressure regulation range either manually using the rotary knob, pneumatically via a pilot

pressure p12 by an external pilot regulator or electrically via setpoint signals. When the operating pressure or the voltage for the setpoint signals is switched off, the output pressure p2 is vented via connection 3 (secondary venting).

- Good regulation characteristics with low hysteresis and primary pressure compensation
- High flow rate with minimal pressure drop
- Regulator lock for protecting the values against adjustment
- With secondary venting
- Pressure gauge connection for different fitting options

General technical data					
Pneumatic connection 1, 2	G1 (with sub-base AGF) <sup>1)</sup>	G1 ¼ (with sub-base AGG) <sup>1)</sup>	G1 ½ (with sub-base AGH) <sup>1)</sup>	G2 (with sub-base AGI) <sup>1)</sup>	- (without connecting thread G)
Pilot air connection 12 with pressure regulation range/actuation mode PO	G ¼				
Constructional design	Pressure regulator with/without pressure gauge				
	Pilot actuated diaphragm regulator (except pressure regulation range/actuation mode PO)				
	Diaphragm regulator (with pressure regulation range/actuation mode PO)				
Regulating function	Output pressure constant, via primary pressure compensation, via return flow function, via secondary venting				
Type of mounting	Via accessories				
	In-line installation				
Mounting position	Any				
Regulator lock	Rotary knob with detent				
	Rotary knob with detent, lockable via accessories				
	Rotary knob with integrated lock				
Pressure regulation range/actuation mode	D6 [bar]	0.3 ... 7, manually operated			
	D7 [bar]	0.5 ... 12, manually operated			
	D8 [bar]	0.5 ... 16, manually operated			
	PO [bar]	0.5 ... 16, pneumatically actuated <sup>2)</sup>			
	PE6 [bar]	0.15 ... 6, solenoid actuated			
Max. hysteresis	[bar]	0.4 with pressure regulation range/actuation mode D6/D7/D8/PO			
	[bar]	0.04 with pressure regulation range/actuation mode PE6			
Pressure display	Via pressure gauge				

1) Connecting plate must be ordered separately as an accessory → Internet: ms12-ag

2) Output pressure p2 corresponds roughly to the applied pilot pressure p12.

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

# Pressure regulators MS12-LR, MS series

FESTO

Technical data

Flow rates		
Pressure regulation range/ actuation mode	D6/D7/D8/PO <sup>1)</sup>	PE6 <sup>2)</sup>
Standard nominal flow rate $q_{nN}^{3)}$ [l/min]		
$q_{nN} 1 \rightarrow 2$	G1	13,000
	G1 $\frac{1}{4}$	13,500
	G1 $\frac{1}{2}$	16,000
	G2	22,000
Secondary venting flow rate [l/min]		
$q_{n} 2 \rightarrow 3$	$\leq 600$	$\leq 600$

1) Measured at  $p_1 = 10$  bar and  $p_2 = 6$  bar,  $\Delta p = 0.5$  bar

2) Measured at  $p_1 = 7$  bar and  $p_2 = 6$  bar,  $\Delta p = 0.5$  bar

3) Dependent on connecting plate selected, must be ordered separately as an accessory → Internet: ms12-ag

Electrical data (pressure regulation range/actuation mode PE6 only)		
Operating voltage range	[V DC]	21.6 ... 26.4
Nominal operating voltage	[V DC]	24
Residual ripple	[%]	10
Analogue input signal range	[V]	0 ... 10
Max. current consumption	[A]	0.15
Max. electrical power consumption	[W]	3.6
Protection class		IP65

Operating and environmental conditions		
Pressure regulation range/ actuation mode	D6/D7/D8/PO	PE6
Operating pressure	[bar]	0.8 ... 21
Operating medium		Compressed air in accordance with ISO 8573-1:2010 [7:4:4]
Ambient temperature	[°C]	-10 ... +60
Temperature of medium	[°C]	-10 ... +60
Storage temperature	[°C]	-10 ... +60
Corrosion resistance class	CRC <sup>1)</sup>	2
CE mark (see declaration of conformity)	-	To EU EMC Directive

1) Corrosion resistance class 2 as per 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.

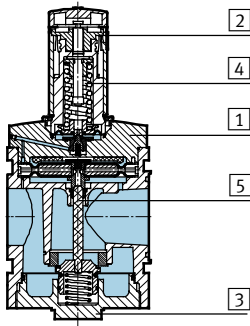
Weight [g]	
Pressure regulator	4,000
Pressure regulator with rotary knob with integrated lock E11	4,300

# Pressure regulators MS12-LR, MS series

Technical data

## Materials

Sectional view

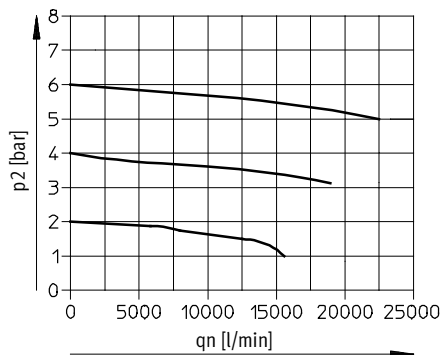


Pressure regulator		
1	Housing	Die-cast aluminium
2	Rotary knob	PA-reinforced, POM
	Rotary knob with integrated lock E11	Wrought aluminium alloy
3	Cap (bottom)	Wrought aluminium alloy
4	Spring	Spring steel
5	Valve stem	Wrought aluminium alloy, NBR, high alloy steel non-corrosive
-	Seals, diaphragm	NBR
Note on materials		RoHS-compliant
		Free of copper and PTFE only with cover plate VS

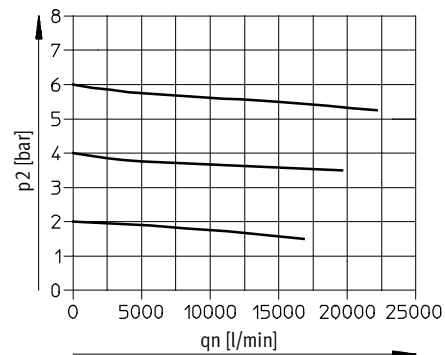
## Standard flow rate $q_n$ as a function of output pressure $p_2$ (MS12-LR-...-D6/D7/D8/PO only)

With connecting plate MS12-AGF  
Pneumatic connection G1

Input pressure  $p_1 = 10$  bar

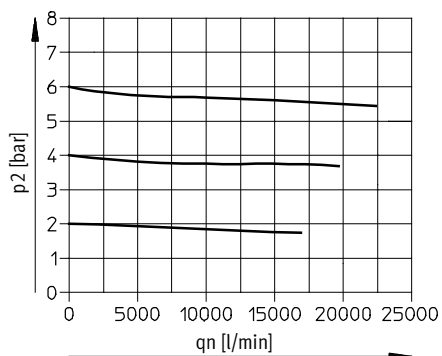


With connecting plate MS12-AGG  
Pneumatic connection G1¼

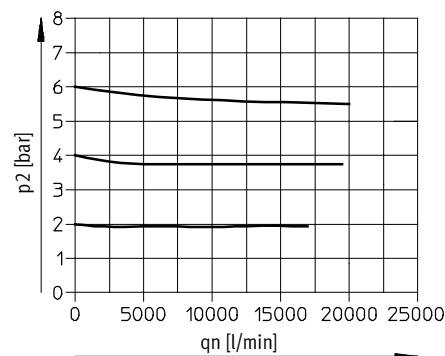


With connecting plate MS12-AGH  
Pneumatic connection G1½

Input pressure  $p_1 = 10$  bar



With connecting plate MS12-AGI  
Pneumatic connection G2



# Pressure regulators MS12-LR, MS series

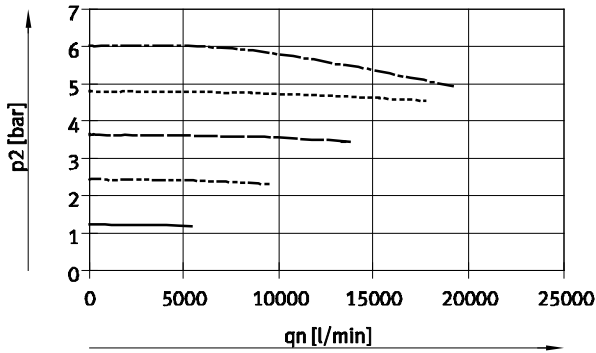
Technical data



## Standard flow rate $q_n$ as a function of output pressure $p_2$ (MS12-LR...-PE6 only)

With connecting plate MS12-AGH

Pneumatic connection G1½



Input pressure  $p_1 = 7$  bar

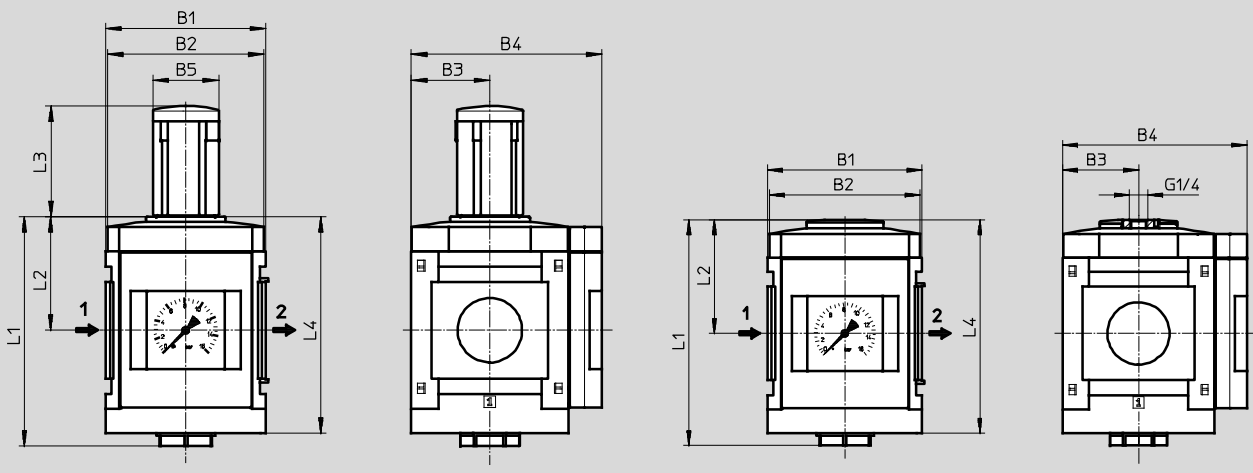
- 2 volts
- - - 4 volts
- · - 6 volts
- · · 8 volts
- - - - 10 volts

## Dimensions

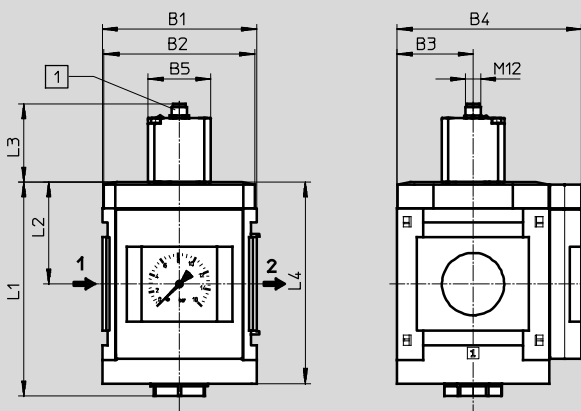
Download CAD data → [www.festo.com](http://www.festo.com)

Pressure regulation range/actuation mode D6/D7/D8, manually operated, integrated pressure gauge, display unit [bar], long rotary knob

Pressure regulation range/actuation mode PO, pneumatically actuated, integrated pressure gauge, display unit [bar]



Pressure regulation range/actuation mode PE6, solenoid actuated, integrated pressure gauge, display unit [bar]



- 1 Suitable for
- Connecting cable NEBU-M12G...-LE4/NEBU-M12W...-LE4
  - Sensor socket SIE-GD
  - Angled plug socket SIE-WD-TR

→ Flow direction

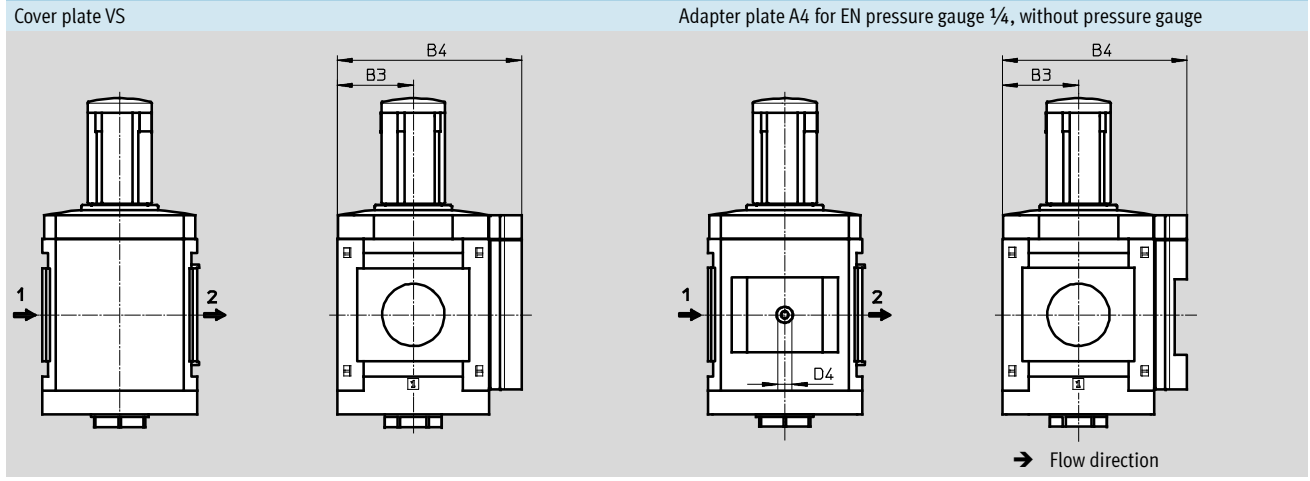
Type	B1	B2	B3	B4	B5	L1	L2	L3	L4
MS12-LR...-D6/D7/D8					52	178	88	86	168
MS12-LR...-PO	124	122	61	148	-	181	91	-	171
MS12-LR...-PE6					50	172	82	62.7	162

# Pressure regulators MS12-LR, MS series

Technical data

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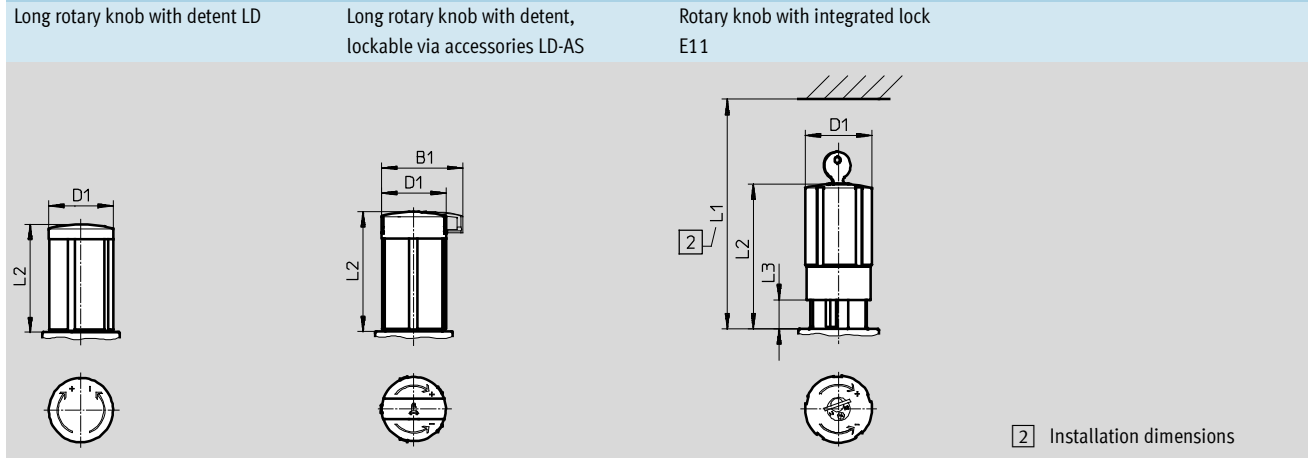
## Dimensions – Pressure gauge alternatives Download CAD data → [www.festo.com](http://www.festo.com)



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

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

## Dimensions – Rotary knob Download CAD data → [www.festo.com](http://www.festo.com)



Type	B1	D1	L1	L2	L3
MS12-LR-...-LD	–	52	–	86	–
MS12-LR-...-LD-AS	65	52	–	96	–
MS12-LR-...-E11	–	52	174	114	25

## Ordering data

Integrated pressure gauge, display unit [bar]							
Size	Connection	Pressure regulation range 0.5 ... 12 bar, manually actuated, long rotary knob with detent, lockable via accessories		Pressure regulation range 0.5 ... 16 bar, pneumatically actuated		Pressure regulation range 0.15 ... 6 bar, solenoid actuated	
		Part No.	Type	Part No.	Type	Part No.	Type
MS12	G1 ... G2 <sup>1)</sup>	537148	MS12-LR-G-D7-LD-AS	541680	MS12-LR-G-PO	564888	MS12-LR-G-PE6

1) Connecting plate must be ordered separately as an accessory → Internet: ms12-ag

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

## Ordering data – Wearing parts kits

Size	Part No.	Type
MS12	673586	MS12-LR/LFR

# Pressure regulators MS12-LR, MS series

Ordering data – Modular products

**M** Mandatory data →

Module No.	Series	Size	Function	Connection size	Pressure regulation range/ actuation mode
535021	MS	12	LR	AGF AGG AGH AGI G	D6 D7 D8 PO PE6
<b>Order example</b>					
535021	MS	12	- LR	- G	- D8

**Ordering table**

Grid dimension	[mm]	124	Condi- tions	Code	Enter code
<b>M</b> Module No.	535021				
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/ actuation mode	0.3 ... 7 bar, manually operated			-D6	
	0.5 ... 12 bar, manually operated			-D7	
	0.5 ... 16 bar, manually operated			-D8	
	Max. 16 bar, pneumatically actuated (pressure range defined by means of pilot regulator)		3 4	-PO	
	0.15 ... 6 bar, solenoid actuated (pilot control via proportional pressure regulator)		3 4	-PE6	

3 LD, PO, PE6 Not with integrated lock E11

4 PO, PE6 Not with rotary knob alternative LD  
Not with integrated lock AS

Transfer order code

535021	MS	12	- LR	-		-	
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# Pressure regulators MS12-LR, MS series

Ordering data – Modular products

→ **0 Options**

Pressure gauge alternatives	Alternative pressure gauge scale	Rotary knob alternative	Security	Type of mounting	Alternative flow direction
VS A4	PSI MPA	LD	AS E11	WP	Z
- VS	-	- LD	- AS	-	- 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 alternative	Long rotary knob		2 3	-LD	
Security	Lockable via accessories			-AS	
	With integrated lock		2	-E11	
Type of mounting	Mounting bracket		5	-WP	
Alternative flow direction	Flow direction from right to left			-Z	

1 **PSI, MPA** Not with pressure gauge alternatives VS, A4

2 **LD, E11** When selecting D6/D7/D8, rotary knob alternative LD or integrated lock E11 must be selected

3 **LD, PO, PE6** Not with integrated lock E11

5 **WP** Only with sub-base AGF, AGG, AGH or AGI


Transfer order code


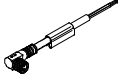
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# Pressure regulators MS-LR/LRB/LRP/LRPB/LRE, MS series

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Accessories

Ordering data – Pressure gauge MA					
	Nominal size	Pneumatic connection	Indicating range		Part No. Type
			[bar]	[psi]	
	Pressure gauge MA, EN 837-1				Technical data → Internet: ma
	40	R $\frac{1}{4}$	0 ... 16	0 ... 232	187080 MA-40-16-R $\frac{1}{4}$ -EN
			0 ... 25	0 ... 360	187081 MA-40-25-R $\frac{1}{4}$ -EN
		G $\frac{1}{4}$	0 ... 16	0 ... 232	183901 MA-40-16-G $\frac{1}{4}$ -EN
	Pressure gauge MA, EN 837-1, with red/green range				Technical data → Internet: ma
	40	R $\frac{1}{8}$	0 ... 16	–	525726 MA-40-16-R $\frac{1}{8}$ -E-RG
	50	R $\frac{1}{4}$	0 ... 16	–	525729 MA-50-16-R $\frac{1}{4}$ -E-RG
	Precision pressure gauge MAP, EN 837-1				Technical data → Internet: map
	40	R $\frac{1}{8}$	0 ... 1	0 ... 15	161126 MAP-40-1- $\frac{1}{8}$ -EN
			0 ... 4	0 ... 58	162842 MAP-40-4- $\frac{1}{8}$ -EN
0 ... 6			0 ... 87	161127 MAP-40-6- $\frac{1}{8}$ -EN	
0 ... 16			0 ... 232	161128 MAP-40-16- $\frac{1}{8}$ -EN	

Ordering data – Connecting cable NEBU-M8					Technical data → Internet: nebu
	Electrical connection	Number of wires	Cable length [m]	Part No.	Type
	M8x1, straight socket	3	2.5	541333	NEBU-M8G3-K-2.5-LE3
			5	541334	NEBU-M8G3-K-5-LE3
	M8x1, angled socket	3	2.5	541338	NEBU-M8W3-K-2.5-LE3
			5	541341	NEBU-M8W3-K-5-LE3

Ordering data – Connecting cable NEBU-M12					Technical data → Internet: nebu
	Electrical connection	Number of wires	Cable length [m]	Part No.	Type
	M12x1, straight socket	4	2.5	550326	NEBU-M12G5-K-2.5-LE4
			5	541328	NEBU-M12G5-K-5-LE4
		5	2.5	541330	NEBU-M12G5-K-2.5-LE5
			5	541331	NEBU-M12G5-K-5-LE5
	M12x1, angled socket	4	2.5	550325	NEBU-M12W5-K-2.5-LE4
			5	541329	NEBU-M12W5-K-5-LE4

Ordering data – Sensor socket SIE-GD			Technical data → Internet: sie-gd
	Electrical connection	Part No.	Type
	M12x1, 4-pin	18494	SIE-GD

Ordering data – Angled plug socket SIE-WD			Technical data → Internet: sie-wd
	Electrical connection	Part No.	Type
	M12x1, 4-pin	12956	SIE-WD-TR

Ordering data – Padlock LRVS-D		
	Weight [g]	Part No. Type
	120	193786 LRVS-D