

Pressure regulator MS4N-LR

FESTO



Characteristics

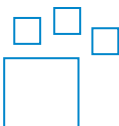
At a glance

Very compact series for use close to the process directly on the machine

- Grid dimension: 40 mm
- Good control characteristics with minimal pressure hysteresis and primary pressure compensation
- Return flow option for exhausting from output 2 to input 1 already integrated
- High flow rate with minimal pressure drop
- Optional pressure sensor

Ordering data - modular system

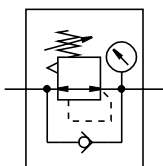
Link [ms4n-lr](#)



Configurable product

This product and all its product options can be ordered online via the configurator.

Function



- For stepless, precise adjustment of the required operating pressure
- The pressure regulator keeps the working pressure largely constant, irrespective of compressed air fluctuations in the network and due to air consumption

Pneumatic connection

By installing connecting plates it is easier to replace the module if necessary (e.g. when using piping).

Pressure regulation range

Three pressure regulation ranges:

- 0.3 ... 4 bar
- 0.3 ... 7 bar
- 0.5 ... 12 bar

Pressure gauge alternatives

Two pressure gauge connections for variable installation

Alternative pressure gauge scale

The scaling of the built-in pressure gauge can be selected. The unit options available are [MPa], [bar] / [psi].

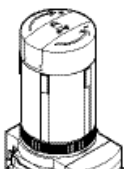
Secondary exhausting

The regulated working pressure can also be reduced without a consuming device via the optional secondary exhausting.

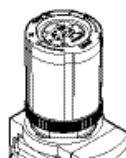
Rotary knob alternative

Optionally with longer rotary knob or with pressure gauge integrated in the rotary knob.

[LD] Long rotary knob

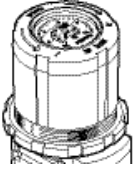


[DM1] Rotary knob pressure gauge, small



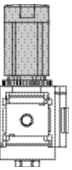
Characteristics

[DM2] Rotary knob pressure gauge, large



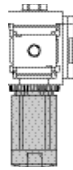
Alternative mounting position

[] None



Rotary knob positioned above the appliance as standard.

[KD] Rotary knob underneath

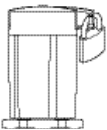


Optionally with rotary knob positioned below the device.

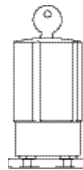
Lockability

Various options for locking the rotary knob to protect the settings from being changed.

[AS] Can be locked using accessories



[E11] With integrated lock



Type of mounting

[WR] Mounting bracket with knurled nut on regulator knob



- For wall mounting an individual device

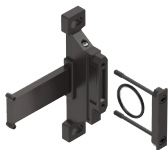
[WP] Mounting bracket basic design



- For connecting the modules for wall mounting
- In combination with connecting plate MS4-AG... for mounting an individual device on a wall
- In conjunction with mounting plate MS4-AEND for wall mounting of a single device
- Same wall distance when used in combination with series MS4 and MS6

Characteristics

[WPM] Mounting bracket for hooking in service unit components



- For connecting the modules for wall mounting
- In combination with connecting plate MS4-AG... for mounting an individual device on a wall
- In conjunction with mounting plate MS4-AEND for wall mounting of a single device
- For installing modules with the regulator knob pointing downwards

[WBM] Mounting centrally at rear (wall mounting top), connecting plates not required



- For wall mounting an individual device

[WB] Mounting centrally at rear (wall mounting top and bottom), connecting plates not required



- For wall mounting an individual device

Flow direction

Available with flow in the opposite direction.

Type code

001	Series	
MS	MS series	

002	Size	
4	Grid dimension 40 mm	

003	Thread type	
N	NPT thread	

004	Function	
LR	Pressure regulator	

005	Pneumatic connection, inch	
1/8	Female thread NPT 1/8	
1/4	Female thread NPT 1/4	
AQK	Sub-base NPT1/8	
AQN	Sub-base NPT1/4	
AQP	Sub-base NPT3/8	

006	Pressure regulation range	
D5	0.3 ... 4 bar	
D6	0.3 ... 7 bar	
D7	0.5 ... 12 bar	

007	Pressure gauge alternatives	
	None	
A4	Adapter for EN pressure gauge 1/4, without pressure gauge	
A8	Adapter for EN pressure gauge 1/8, without pressure gauge	
AD1	Pressure sensor with LCD display, M8 plug, PNP, 3-pin	
AD2	Pressure sensor with LCD display, M8 plug, NPN, 3-pin	
AD3	Pressure sensor with LCD display, M12 plug, PNP, 4-pin, analogue output 4 ... 20 mA	
AD4	Pressure sensor with LCD display, M12 plug, NPN, 4-pin, analogue output 4 ... 20 mA	
AD7	Pressure sensor with switching display, M8 plug, threshold value comparator, PNP, N/O	
AD8	Pressure sensor with switching display, M8 plug, threshold value comparator, PNP, N/C	
AD9	Pressure sensor with switching display, M8 plug, window comparator, PNP, N/O	
AD10	Pressure sensor with operational status indicator, M8 plug, window comparator, PNP, N/C	
RG	Integrated pressure gauge, red/green scale	
VS	Cover plate	

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

009	Secondary exhausting	
	With secondary exhausting	
OS	Without secondary exhaust	

010	Rotary knob alternative	
	None	
LD	Long rotary knob	
DM1	Rotary knob pressure gauge, small	
DM2	Rotary knob pressure gauge, large	

011	Alternative mounting position	
	None	
KD	Rotary knob underneath	

012	Lockability	
	None	
AS	Can be locked using accessories	
E11	With integrated lock	

013	Type of mounting	
	Without mounting bracket	
WB	Mounting centrally at rear (wall mounting top and bottom), connecting plates not required	
WBM	Mounting centrally at rear (wall mounting top), connecting plates not required	
WP	Mounting bracket basic design	
WPM	Mounting bracket for hooking in service unit components	
WR	Mounting bracket with knurled nut on regulator knob	

014	Flow direction	
	Flow direction from left to right	
Z	Flow direction from right to left	

Datasheet

General technical data

Pressure regulation range	0.5 ... 12 bar		0.3 ... 4 bar		0.3 ... 7 bar	
Pneumatic connection, port 1	1/8 NPT	1/4 NPT	1/8 NPT	1/4 NPT	1/8 NPT	1/4 NPT
Pneumatic connection, port 2	1/8 NPT	1/4 NPT	1/8 NPT	1/4 NPT	1/8 NPT	1/4 NPT
Size	4					
Design	Directly actuated diaphragm regulator					
Controller function	Output pressure constant, With secondary venting, With return flow function					
Type of mounting	Either: Front panel mounting In-line installation With accessories					
Mounting position	optional					
Actuator lock	Rotary knob with detent, can be closed with accessories					
Max. pressure hysteresis	0.025 MPa					
Max. pressure hysteresis	0.25 bar					
Max. pressure hysteresis	3.625 psi					
Pressure gauge (ANALOG) or Pressure display (DIGITAL)	With pressure gauge					

Standard nominal flow rate q_N

Pressure range/actuation	0.3 ... 4 bar, manually actuated [D5]		0.3 ... 7 bar, manually actuated [D6]		0.5 ... 12 bar, manually actuated [D7]	
Pneumatic connection, port 1	1/8 NPT	1/4 NPT	1/8 NPT	1/4 NPT	1/8 NPT	1/4 NPT
Standard nominal flow rate (standardised to DIN 1343)	1,200 l/min	2,100 l/min	1,150 l/min	1,800 l/min	1,000 l/min	1,700 l/min

Operating and environmental conditions

Operating pressure	0.08 ... 1.4 MPa
Operating pressure	0.8 ... 14 bar
Operating pressure	11.6 ... 203 psi
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4], Inert gas
Note on operating and pilot medium	Lubricated operation possible (in which case lubricated operation will always be required)
Ambient temperature	-10 ... 60°C
Media temperature	-10 ... 60°C
Storage temperature	-10 ... 60°C
Corrosion resistance class CRC ¹⁾	2 - Moderate corrosion stress
Suitable for use with food ²⁾	See supplementary material information

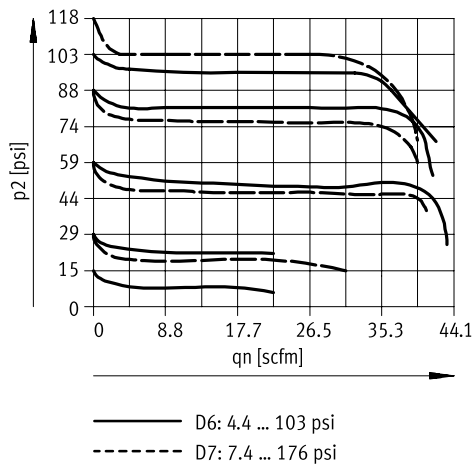
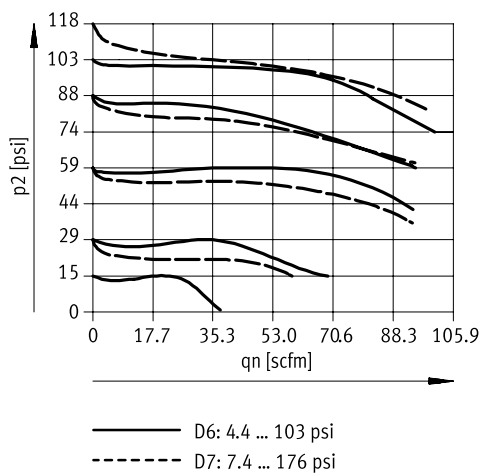
1) More information www.festo.com/x/topic/crc

2) More information www.festo.com/catalogue/ms-lr → Support/Downloads.

Materials

Material housing	Die-cast aluminium
Material membrane	NBR
Material sub-base	Die-cast aluminium
Material seals	NBR
Note on materials	RoHS-compliant
LABS (PWS) conformity	VDMA24364-B1/B2-L

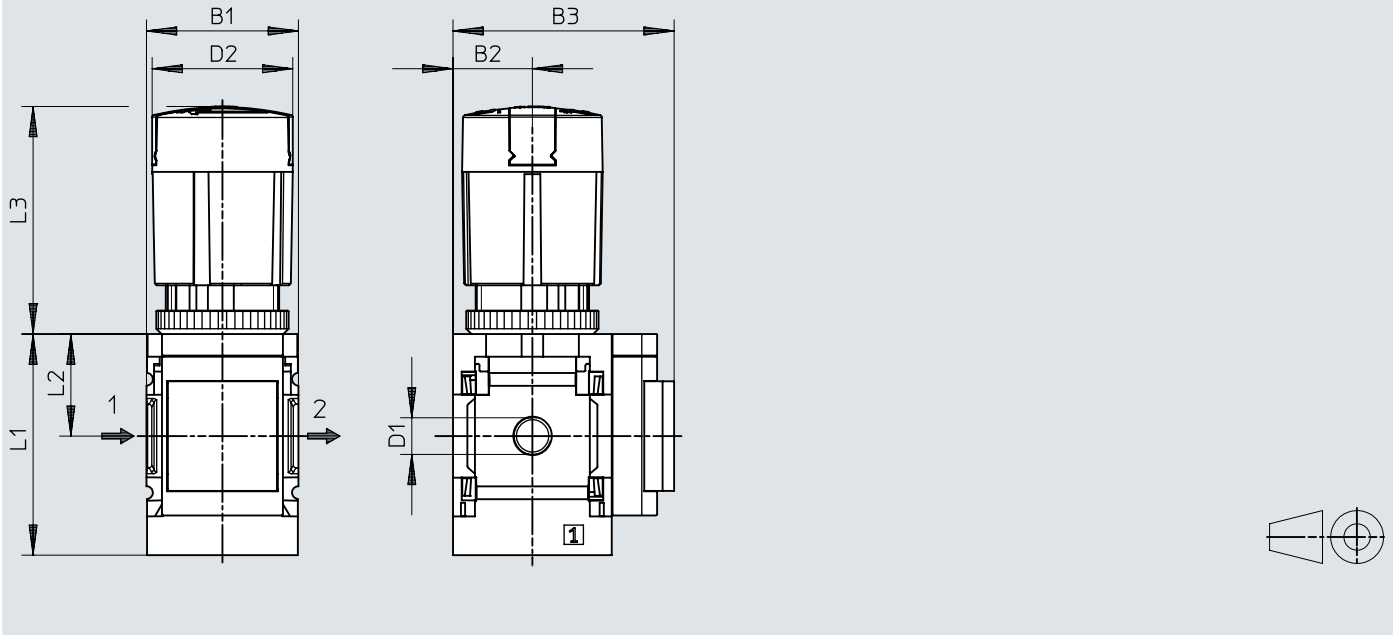
Datasheet

Normal flow rate q_n as a function of output pressure p_2 ($p_1 = 147 \text{ psi}$) – MS4N-LR-1/8Link [7102](#)Standard flow rate q_n as a function of output pressure p_2 ($p_1 = 10 \text{ bar}$) – MS4-LR-1/8-D7-.. (0.5 ... 12 bar)Link [2267](#)

Dimensions

Dimensions – Basic type Integrated MS pressure gauge with standard scale / with red/green scale

Download CAD data www.festo.com

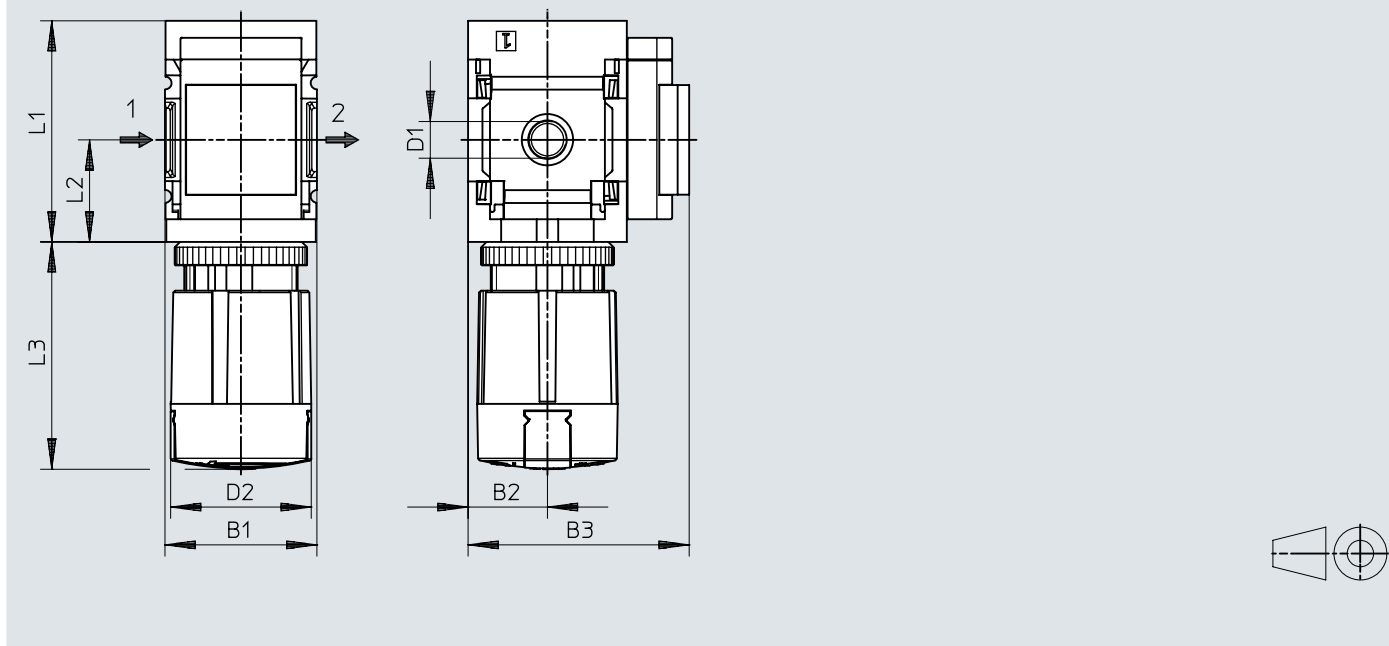


	B1	B2	B3		D1	D2	L1	L2	L3
	[inch]	[inch]	1) [inch]	RG [inch]		[inch]	[inch]	[inch]	[inch]
MS4N-LR-1/8	1,57	0,83	2,24	2,30	1/8 NPT	1,46	2,32	1,06	2,37
MS4N-LR-1/4					1/4 NPT				

1) Standard scale

Dimensions

Dimensions – Alternative mounting position, rotary knob underneath

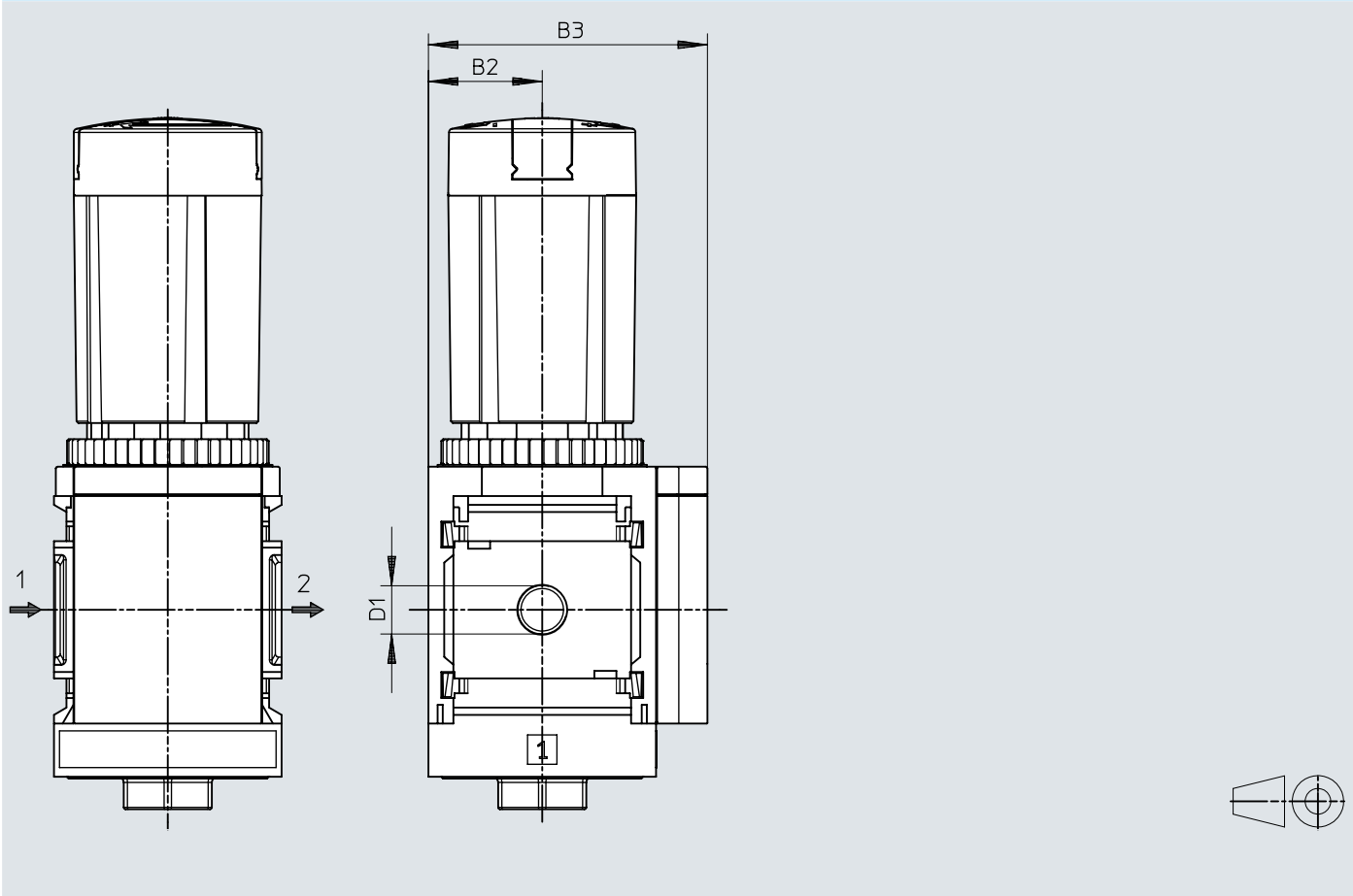
[Download CAD data](#) www.festo.com


	B1	B2	B3		D1	D2	L1	L2	L3
	[inch]	[inch]	1) [inch]	RG [inch]		[inch]	[inch]	[inch]	[inch]
MS4N-LR-1/8-...-KD	1,57	0,83	2,24	2,30	1/8 NPT	1,46	2,32	1,06	2,37
MS4N-LR-1/4-...-KD					1/4 NPT				

1) Standard scale

Dimensions

Dimensions – Pressure gauge alternatives, cover plate Download CAD data www.festo.com

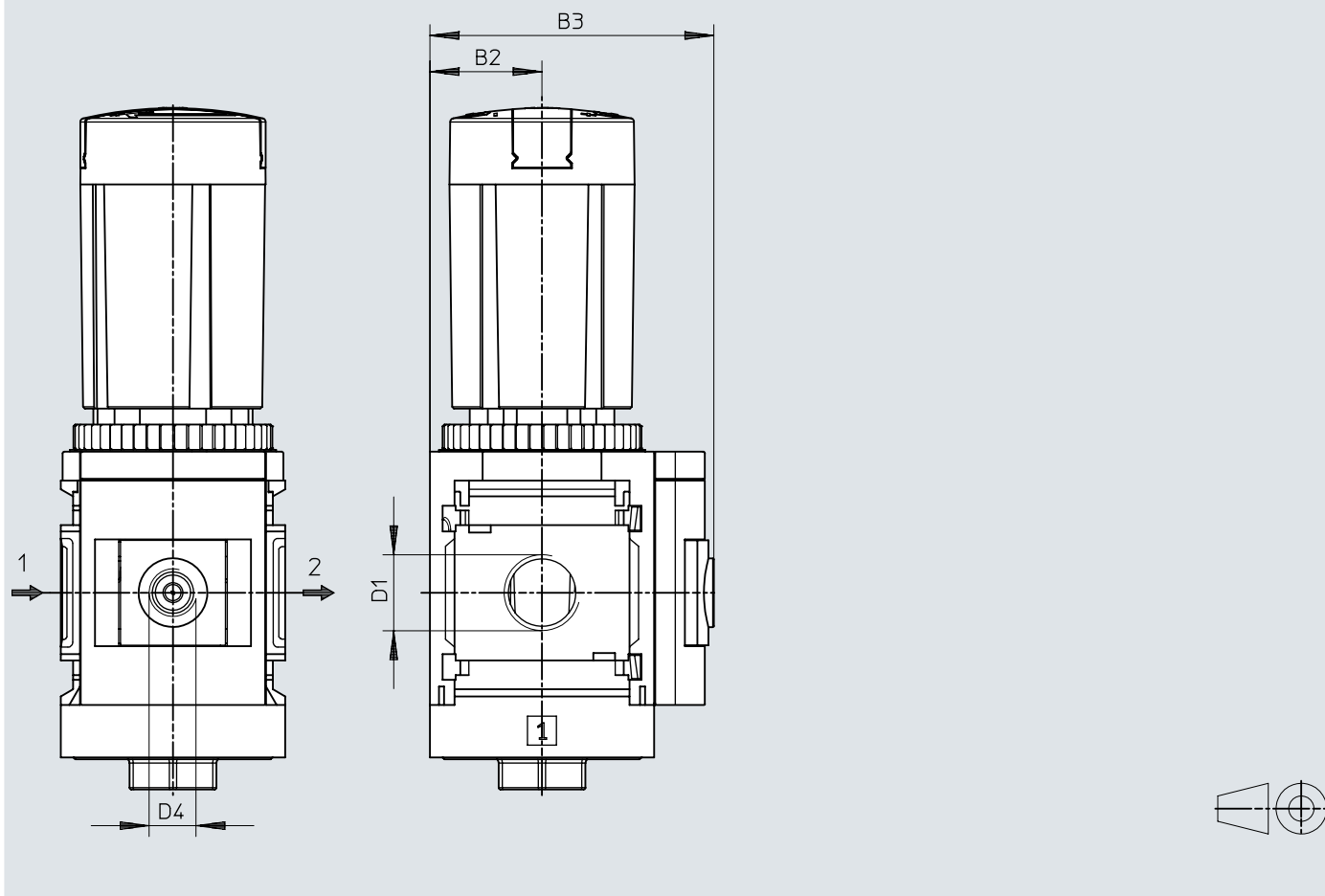


	B2 [inch]	B3 [inch]	D1
MS4N-LR-1/8-...-VS	0,83	2,13	1/8 NPT
MS4N-LR-1/4-...-VS			1/4 NPT

Dimensions

Dimensions – Pressure gauge alternatives, adapter for EN pressure gauges

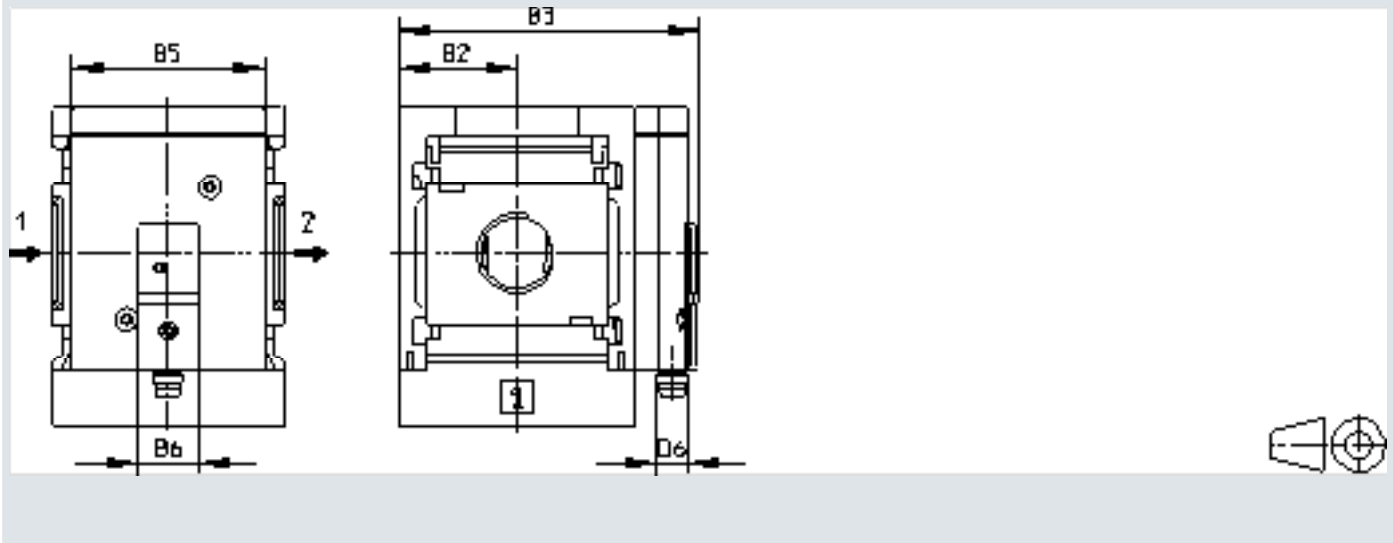
Download CAD data www.festo.com



	B2 [inch]	B3 [inch]	D1	D4
MS4N-LR-1/8-...-A8	0,83	2,30	1/8 NPT	1/8 NPT
MS4N-LR-1/4-...-A8			1/4 NPT	
MS4N-LR-1/8-...-A4			1/8 NPT	1/4 NPT
MS4N-LR-1/4-...-A4			1/4 NPT	

Dimensions

Dimensions – Pressure gauge alternatives, AD7 ... 10 pressure sensor without LCD display (only switching indicator) www.festo.com

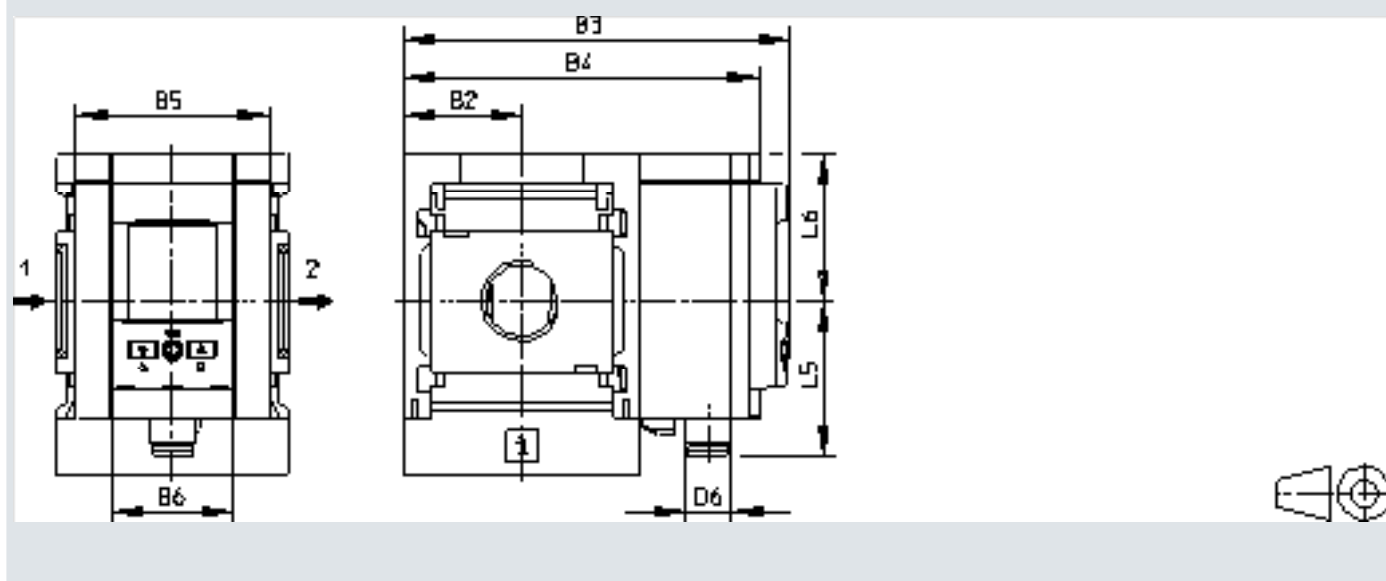


	B2 [inch]	B3 [inch]	B5 [inch]	B6 [inch]	D6
MS4N-LR-....AD7/AD8/AD9/AD10	0,83	2,33	1,26	0,63	M8x1

Dimensions

Dimensions – Pressure gauge alternatives, AD11/AD12 pressure sensor with LCD display

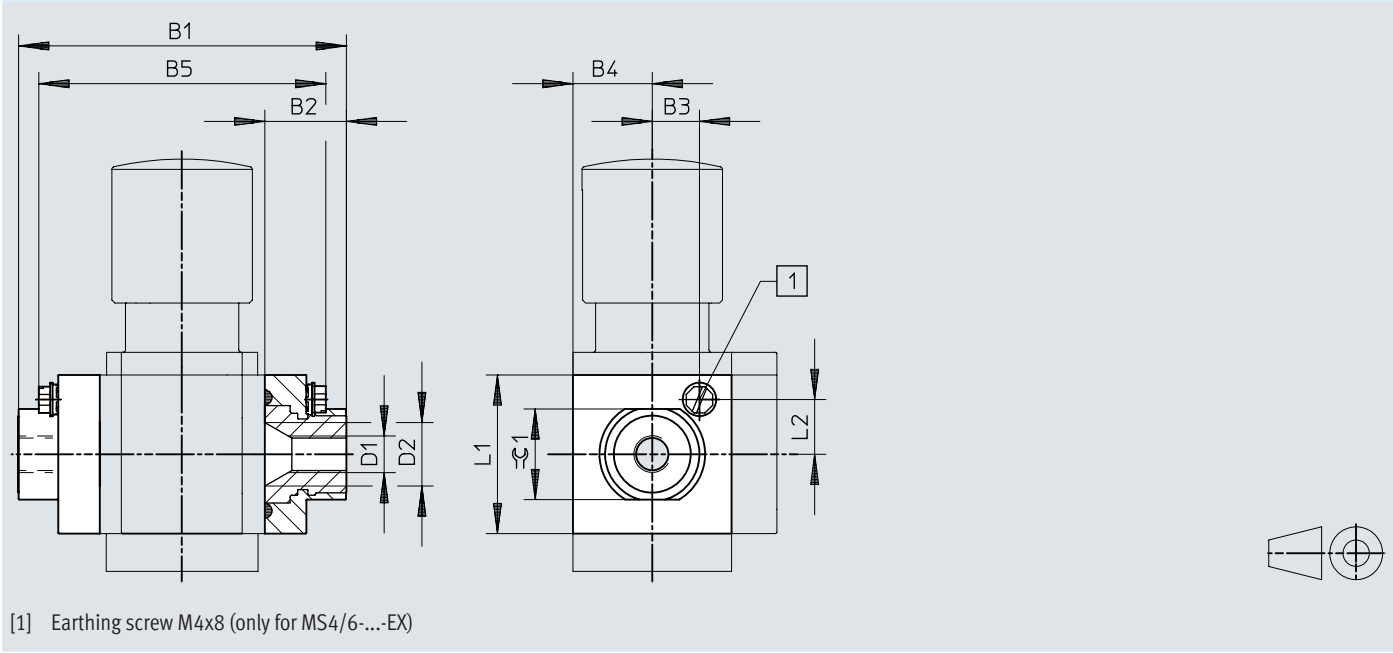
Download CAD data www.festo.com



	B2 [inch]	B3 [inch]	B4 [inch]	B5 [inch]	B6 [inch]	D6	L5 [inch]	L6 [inch]
MS4N-LR-...-AD11	0,83	3,20	2,89	1,26	1,26	M12x1	1,62	1,53
MS4N-LR-...-AD12						M8x1	1,49	

Dimensions

Dimensions – Pneumatic connection, AQ... Sub-base Download CAD data www.festo.com

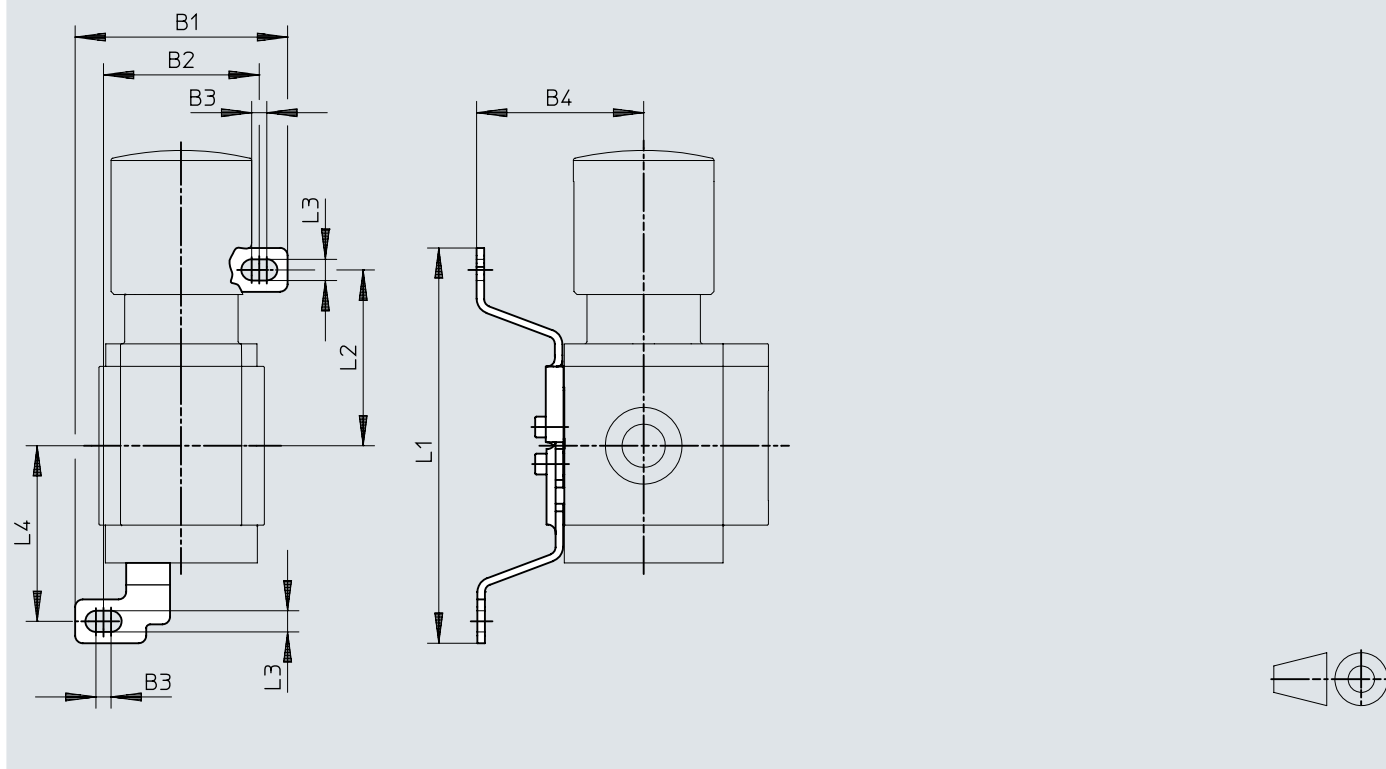


	B1 [inch]	B2 [inch]	B3 [inch]	B4 [inch]	B5 [inch]	D1	D2 [inch]	L1 [inch]	L2 [inch]	≈ 1 [inch]
MS4N-LR-...-AQK	3,28	0,85	0,49	0,83	2,85	1/8-27 NPT	0,66	1,65	0,57	0,94
MS4N-LR-...-AQN						1/4-18 NPT				
MS4N-LR-...-AQP						3/8-18 NPT				

Dimensions

Dimensions – Type of mounting, WB mounting bracket

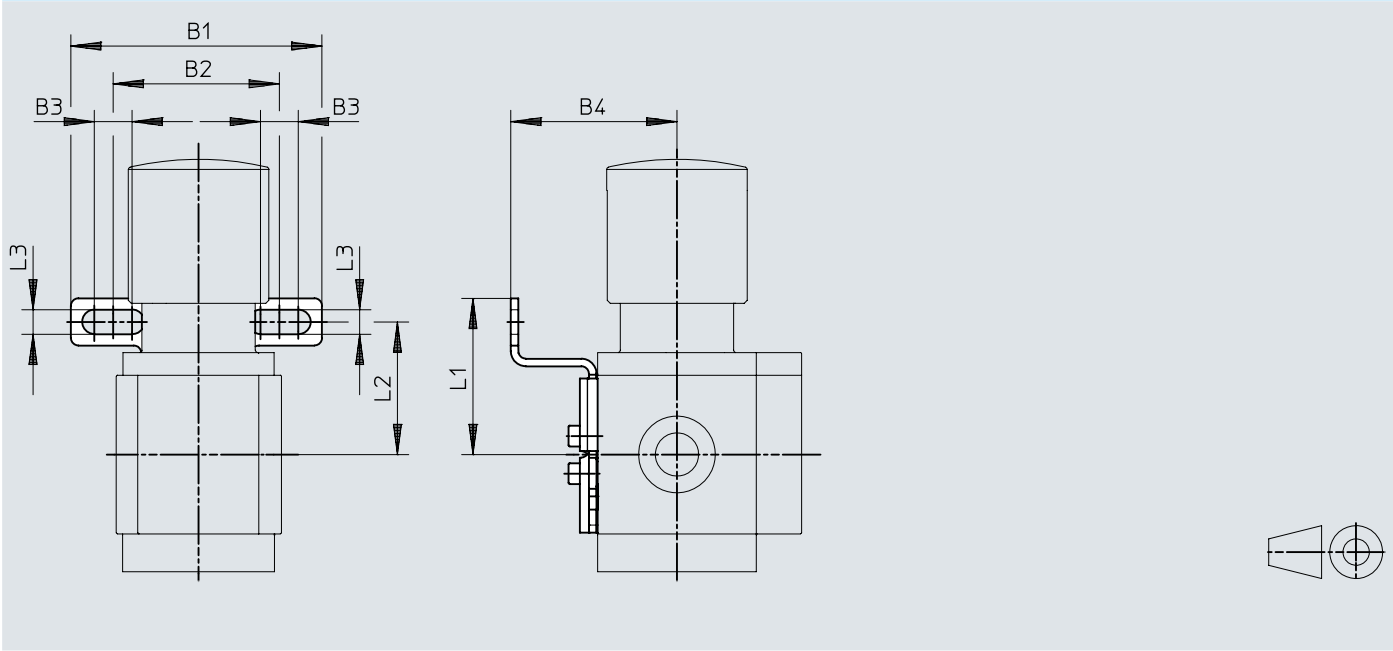
Download CAD data www.festo.com



	B1 [inch]	B2 [inch]	B3 [inch]	B4 [inch]	L1 [inch]	L2 [inch]	L3 [inch]	L4 [inch]
MS4-WB	2,20	1,61	0,16	1,74	4,12	1,83	0,22	1,83

Dimensions

Dimensions – Type of mounting, WBM mounting bracket Download CAD data www.festo.com

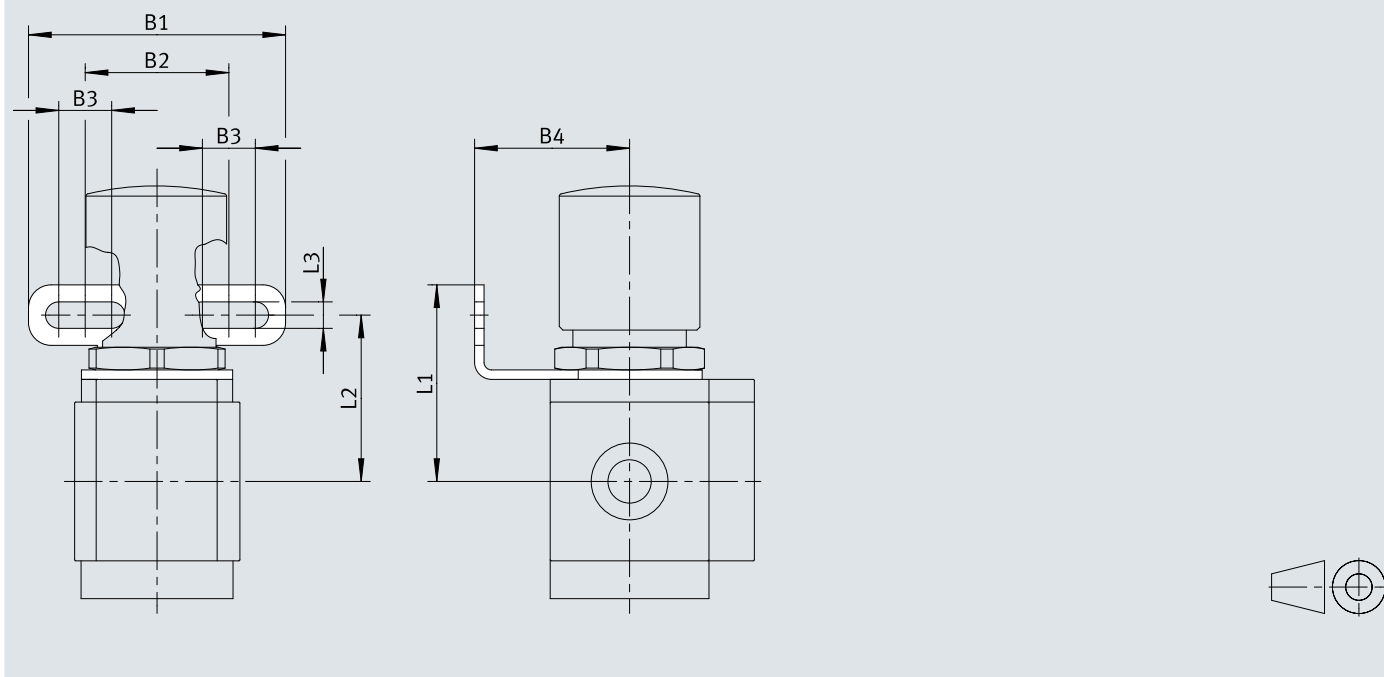


	B1 [inch]	B2 [inch]	B3 [inch]	B4 [inch]	L1 [inch]	L2 [inch]	L3 [inch]
MS4-WBM	2,62	1,73	0,39	1,73	1,63	1,38	0,26

Dimensions

Dimensions – Type of mounting, WR mounting bracket

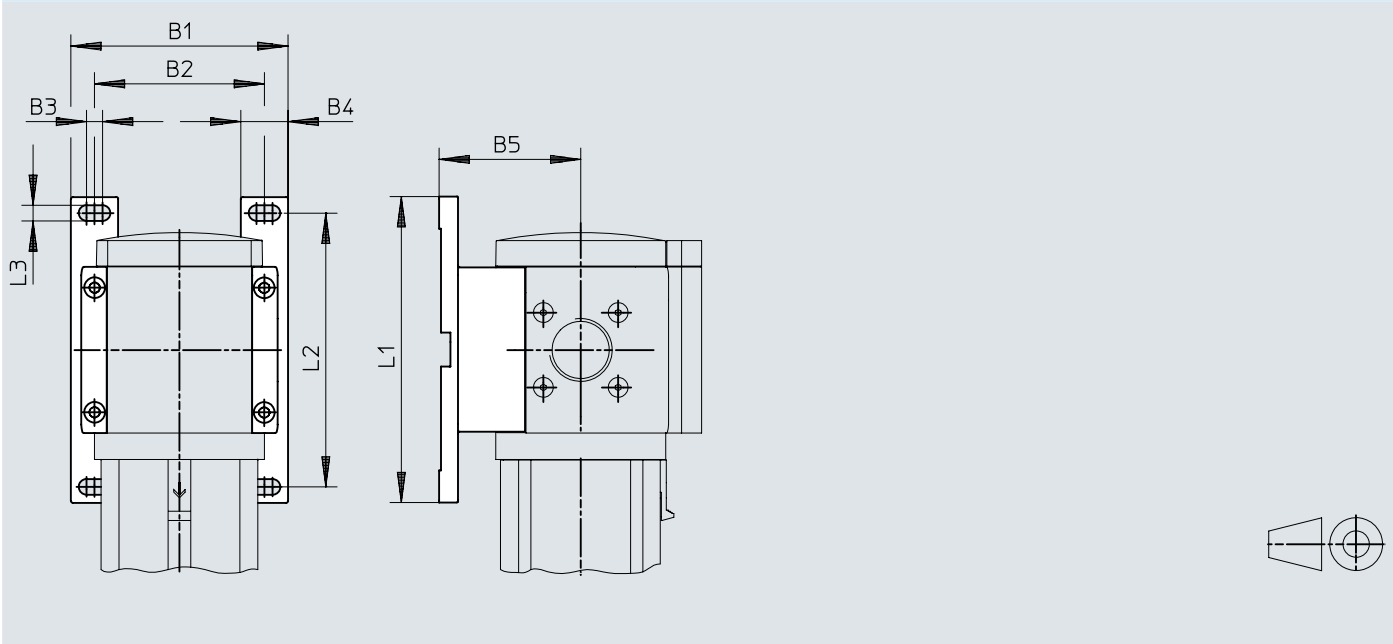
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	B1 [inch]	B2 [inch]	B3 [inch]	B4 [inch]	L1 [inch]	L2 [inch]	L3 [inch]
MS4-WR	2,68	1,73	0,31	1,61	2,05	1,73	0,28

Dimensions

Dimensions – Type of mounting, WP mounting bracket Download CAD data www.festo.com

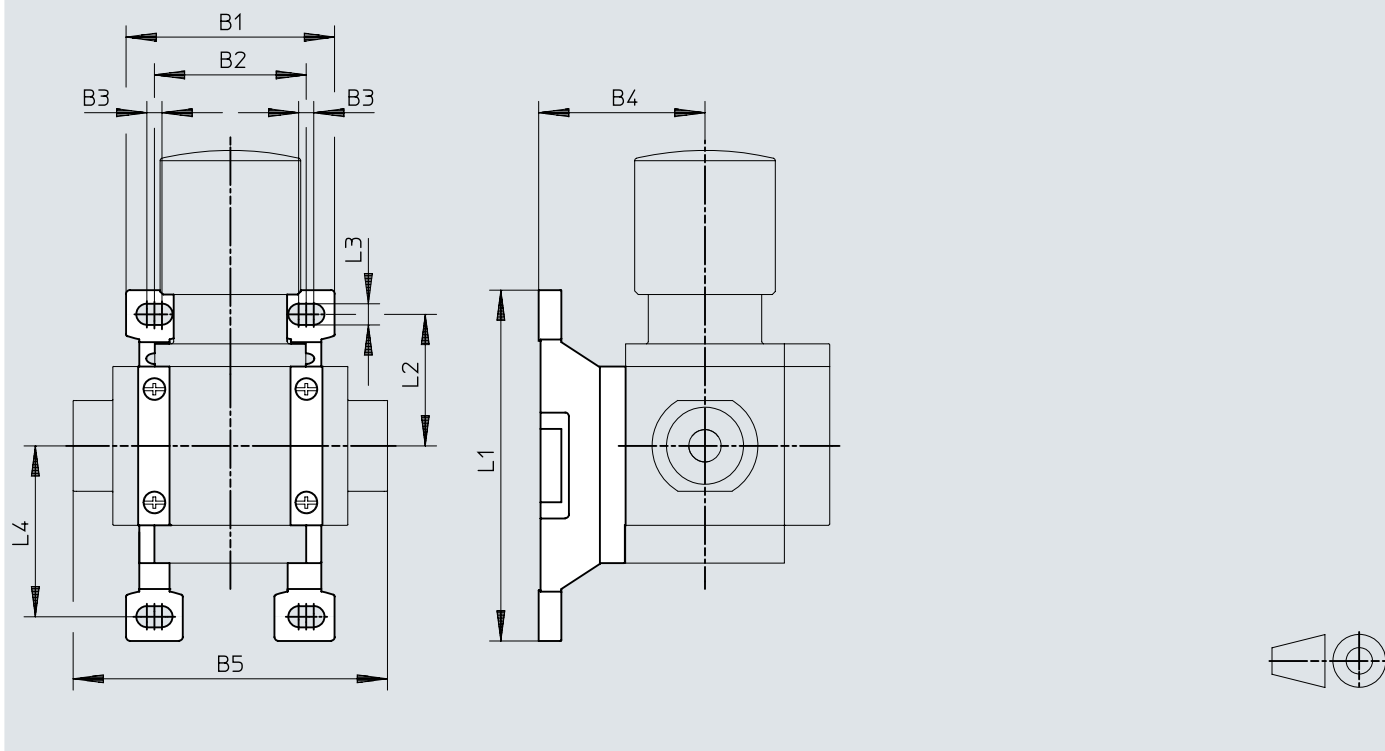


	B1 [inch]	B2 [inch]	B3 [inch]	B4 [inch]	B5 [inch]	L1 [inch]	L2 [inch]	L3 [inch]	L4 [inch]
MS4-WP	2,17	1,58	0,16	1,73	3,28	4,17	1,83	0,22	1,84

Dimensions

Dimensions – Type of mounting, WPM mounting bracket

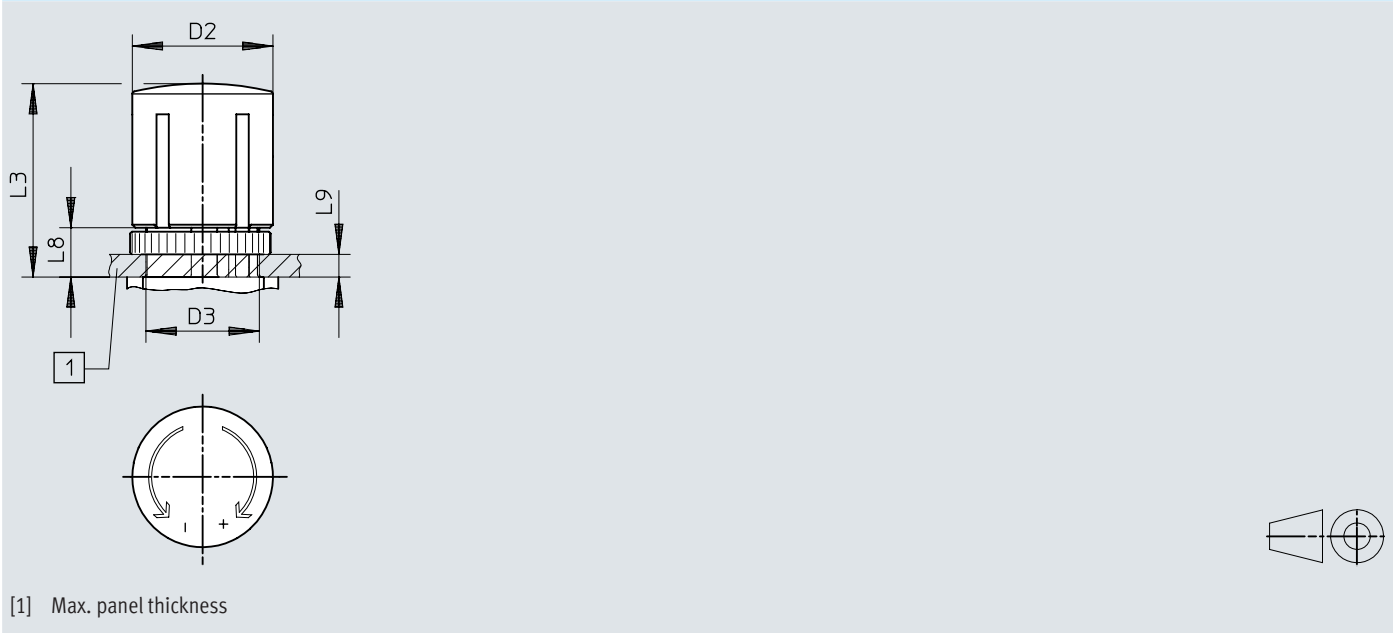
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	B1 [inch]	B2 [inch]	B3 [inch]	B4 [inch]	B5 [inch]	L1 [inch]	L2 [inch]	L3 [inch]	L4 [inch]
MS4-WPM	2,17	1,58	0,16	1,73	3,28	3,65	1,37	0,22	1,78

Dimensions

Dimensions – Rotary knob with latch Download CAD data www.festo.com

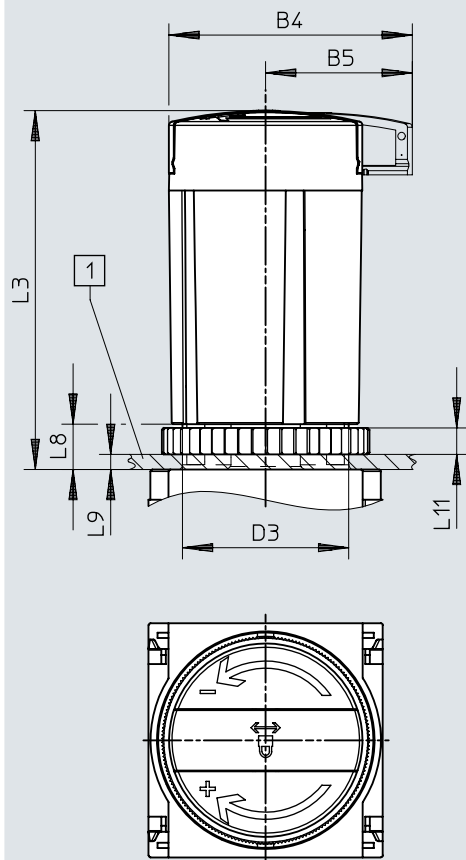


	D2 [inch]	D3	L3 [inch]	L8 [inch]	L9 [inch]
MS4N-LR...	1,46	M30x1,5	2,01	0,51	0,24

Dimensions

Dimensions – Rotary knob with latch, can be locked using accessories

Download CAD data www.festo.com

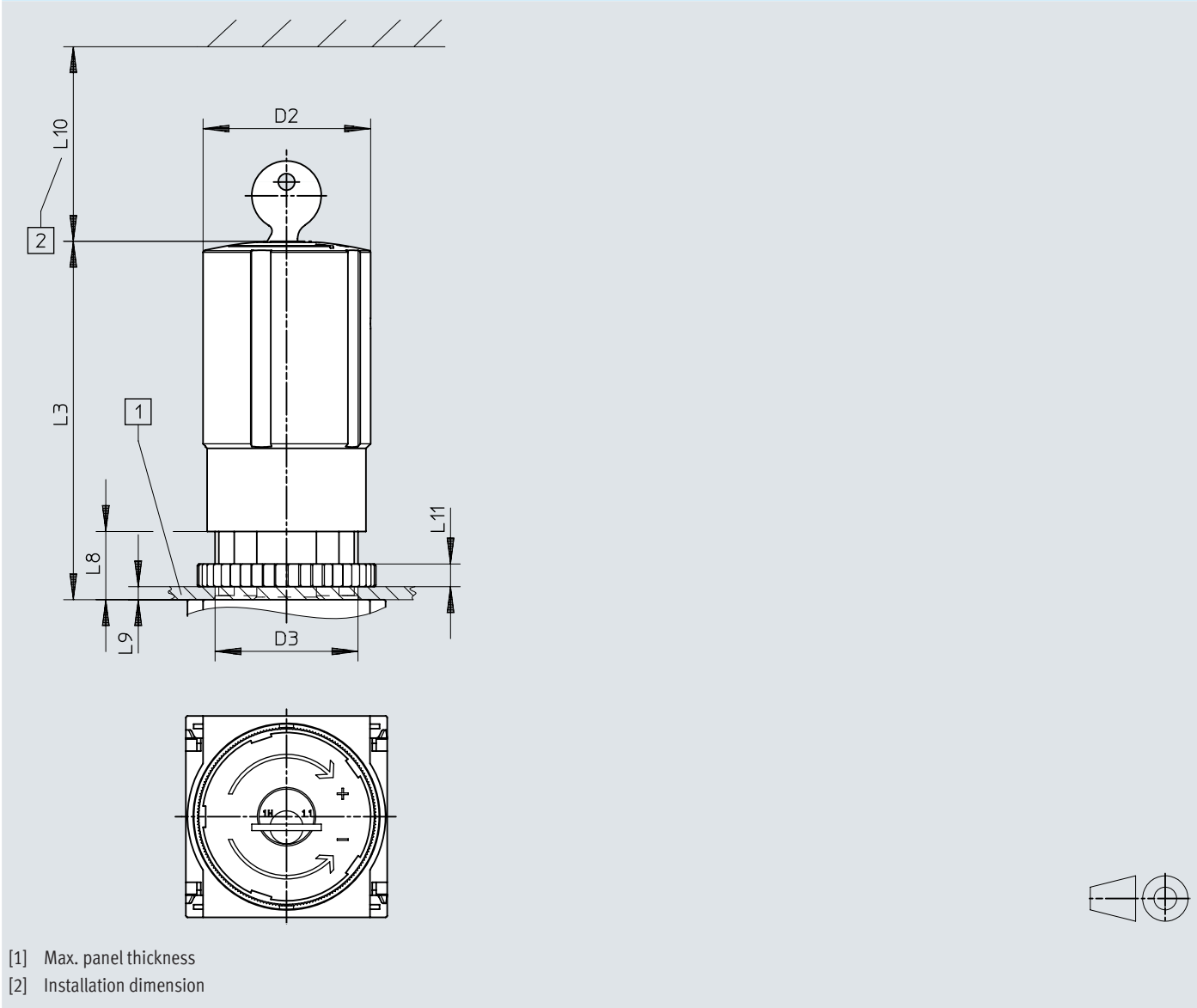


[1] Max. panel thickness

	B4 [inch]	B5 [inch]	D2 [inch]	D3	L3 [inch]	L8 [inch]	L9 [inch]
MS4N-LR-...-AS	1,91	1,18	1,46	M30x1,5	2,37	0,51	0,20

Dimensions

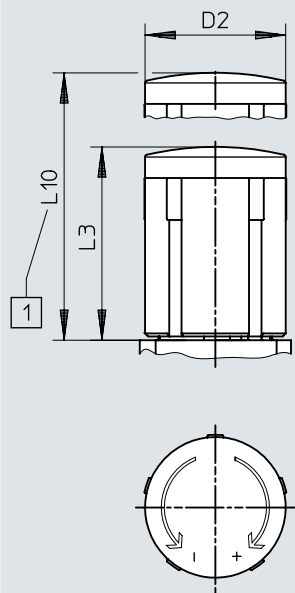
Dimensions – Rotary knob with integrated lock Download CAD data www.festo.com



	D2 [inch]	D3	L3 [inch]	L8 [inch]	L9 [inch]	L10 [inch]
MS4N-LR-...-E11	1,46	M30x1,5	2,99	0,55	0,24	2,36

Dimensions

Dimensions – Rotary knob, long, with latch

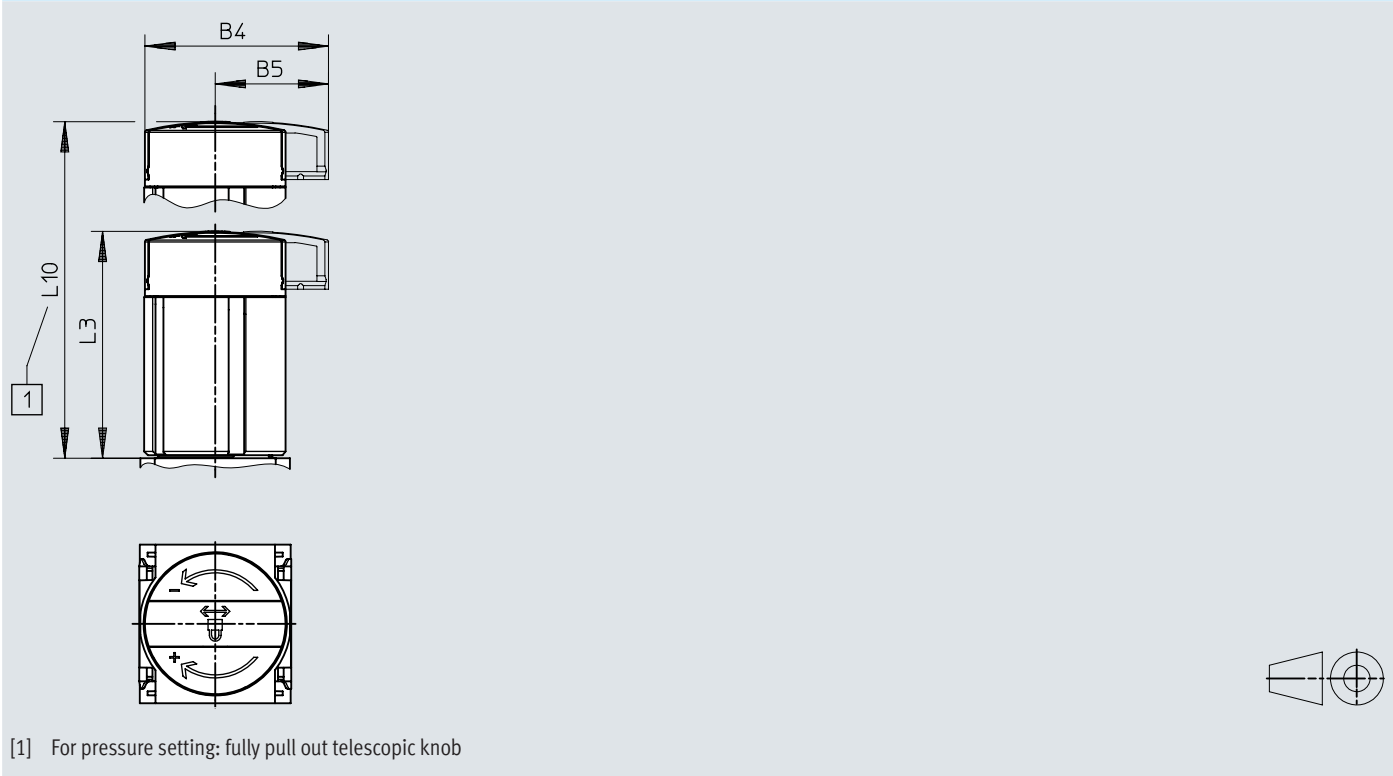
[Download CAD data](#) www.festo.com


[1] For pressure setting: fully pull out telescopic knob

	D2 [inch]	L3 [inch]	L10 [inch]
MS4N-LR-...-LD	1,46	2,01	3,02

Dimensions

Dimensions – Rotary knob, long, with latch, can be locked using accessories [Download CAD data](#) www.festo.com

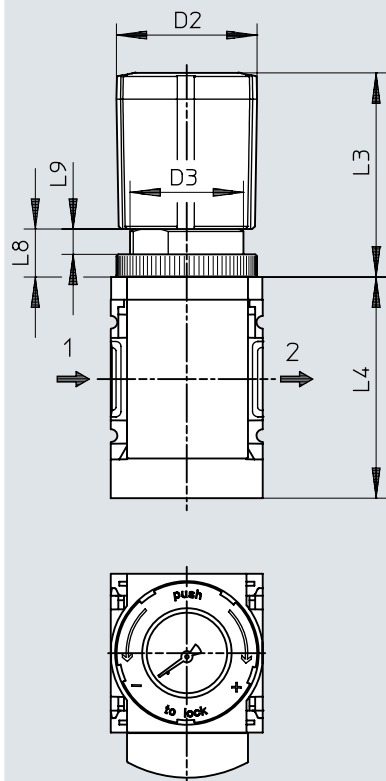


	B4 [inch]	B5 [inch]	D2 [inch]	L3 [inch]	L10 [inch]
MS4N-LR-...-LD-AS	1,91	1,18	1,46	2,36	3,37

Dimensions

Dimensions – Rotary knob pressure gauge, small

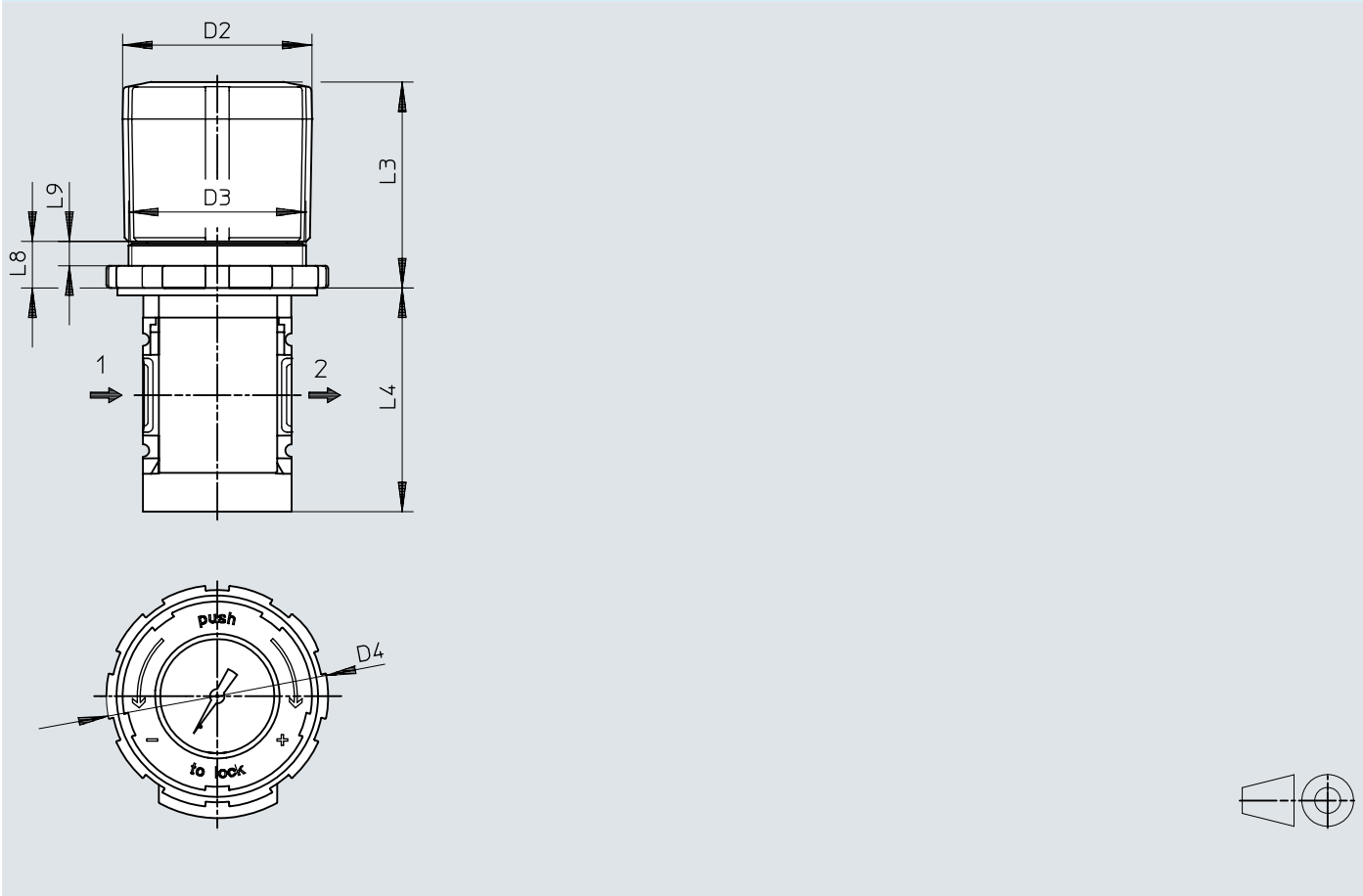
Download CAD data www.festo.com



	D2 [inch]	D3	L3 [inch]	L4 [inch]	L8 [inch]	L9 [inch]
MS4N-LR-...-DM1	1,46	M30x1,5	2,13	2,30	0,51	0,26

Dimensions

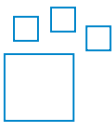
Dimensions – Rotary knob pressure gauge, large Download CAD data www.festo.com



	D2 [inch]	D3	L3 [inch]	L4 [inch]	L8 [inch]	L9 [inch]
MS4N-LR-...-DM2	2,01	M48x1,5	2,19	2,38	0,51	0,26

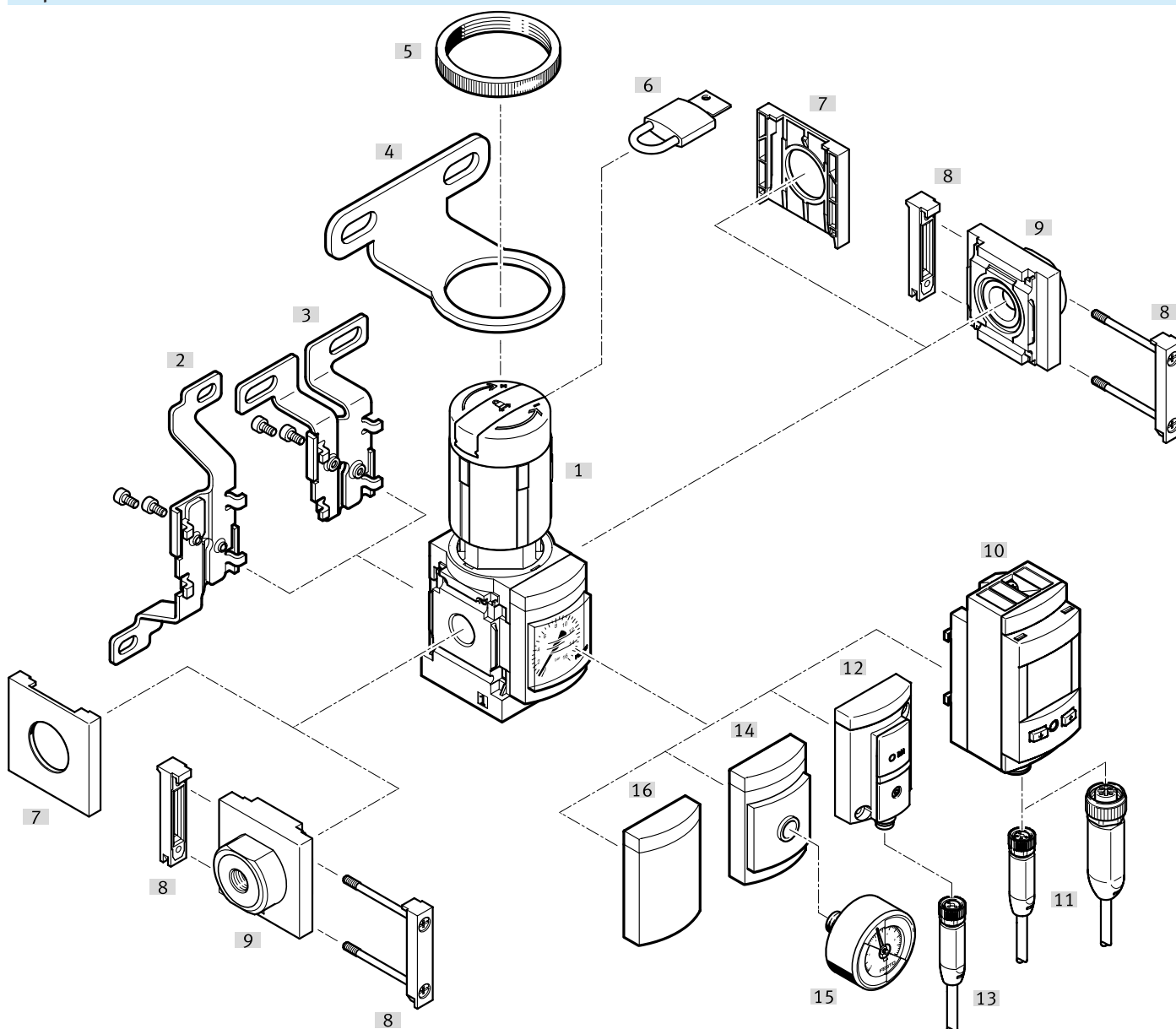
Ordering data

Ordering data					
	Pneumatic connection, port 1	Pressure regulation range	Product weight	Part no.	Type
	1/8 NPT	0.3 ... 4 bar	225 g	531419	MS4N-LR-1/8-D5-AS
		0.3 ... 7 bar		531423	MS4N-LR-1/8-D6-AS
		0.5 ... 12 bar		531427	MS4N-LR-1/8-D7-AS
	1/4 NPT	0.3 ... 4 bar		531418	MS4N-LR-1/4-D5-AS
		0.3 ... 7 bar		531424	MS4N-LR-1/4-D6-AS-Z
				531422	MS4N-LR-1/4-D6-AS
		0.5 ... 12 bar		531428	MS4N-LR-1/4-D7-AS-Z
				531426	MS4N-LR-1/4-D7-AS

Ordering data – Modular product system			
	Short type code	Part no.	Type
	MS4N-LR	527691	MS4N-LR

Peripherals

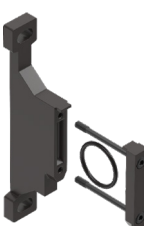
Peripherals overview



Accessories		→ Link
Type/order code	Description	
[1] Pressure regulator MS4N-LR		ms4n-lr
[2] Mounting bracket MS4-WB	Order code [WB]; for single device	29
[3] Mounting bracket MS4-WBM	Order code [WBM]; for single device	29
[4] Mounting bracket MS4-WR	Order code [WR]; for single device	30
[5] Knurled nut MS-LR	For single device (included in the scope of delivery)	ms4n-lr
[6] Padlock LRVS-D		32
[7] Cover cap MS4-END	For devices without connecting plate	31
[8] Module connector MS4-MV	For device combinations and individual devices with connecting plate	29
[9] Connecting plate SET MS4-AQ...	Order code [AQ...]; for device combinations	31
[10] Pressure sensor AD11/AD12	Order code [AD11], [AD12]; pressure sensor SPAU with LCD display	spau
[11] Connecting cable NEBA-M8...-LE4, NEBA-M12...-LE4		30
[12] Pressure sensor AD7 ... AD10	Order code [AD7], [AD8], [AD9], [AD10]; pressure sensor SDE5 with switching indicator	sde5
[13] Connecting cable NEBA-M8...-LE3		30
[14] Adapter for EN pressure gauge 1/8, 1/4	Order code [A8], [A4]	ms4n-lr
[15] Pressure gauge MA		31
[16] Cover plate VS	Order code [VS]	ms4n-lr

Accessories

Module connector MS4-MV1						
	Size	Material module connector	LABS (PWIS) conformity	Product weight	Part no.	Type
	4	POM, High-alloy stainless steel	VDMA24364-B1/B2-L	13 g	8119201	MS4-MV1

Mounting bracket MS4-WP...						
	Size	Material bracket	LABS (PWIS) conformity	Product weight	Part no.	Type
	4	Die-cast aluminium	VDMA24364-B1/B2-L		558869	MS4-WPE
				39 g	532184	MS4-WP
				45 g	526060	MS4-WPM-D
				55 g	526063	MS4-WPB
					526061	MS4-WPM-2D

Mounting bracket MS4-WB						
	Size	Material bracket	LABS (PWIS) conformity	Product weight	Part no.	Type
	4	Steel	VDMA24364-B1/B2-L	46 g	532185	MS4-WB

Mounting bracket MS4-WBM						
	Size	Material bracket	LABS (PWIS) conformity	Product weight	Part no.	Type
	4	Steel	VDMA24364-B1/B2-L	48 g	526062	MS4-WBM

Accessories

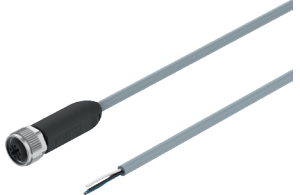
Mounting bracket MS4-WR

	Size	Material bracket	LABS (PWIS) conformity	Product weight	Part no.	Type
	4	Steel	VDMA24364-B1/B2-L	49 g	526064	MS4-WR

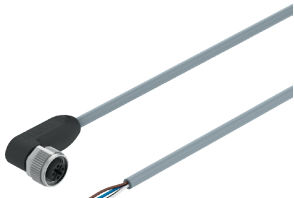
Pressure sensor SPAU-...-T

	Pneumatic connection	Electrical connection 1, connector system	LABS (PWIS) conformity	Product weight	Part no.	Type
	R1/8	M12x1, A-coded to EN 61076-2-101	VDMA24364-B1/B2-L	70 g	8001206	SPAU-P10R-T-R18M-L-PNLK-PNVBA-M12D
		M8x1, A-coded, to EN 61076-2-104			8001203	SPAU-P10R-T-R18M-L-PNLK-PNVBA-M8D
	R1/4	M12x1, A-coded to EN 61076-2-101			8001208	SPAU-P10R-T-R14M-L-PNLK-PNVBA-M12D
		M8x1, A-coded, to EN 61076-2-104			8001209	SPAU-P10R-T-R14M-L-PNLK-PNVBA-M8D

Connecting cables NEBA, straight

Connecting cables NEBA, straight		Electrical connection 1, connector system	Electrical connection 2, connector system	Electrical connection 2, number of connections/ cores	Cable length	Part no.	Type
	M12x1, A-coded to EN 61076-2-101	Open end	4	2.5 m	8078239	NEBA-M12G5-U-2.5-N-LE4	
				5 m	8078240	NEBA-M12G5-U-5-N-LE4	
			5	2.5 m	8078242	NEBA-M12G5-U-2.5-N-LE5	
				5 m	8078243	NEBA-M12G5-U-5-N-LE5	
	M8x1, A-coded, to EN 61076-2-104		3	2.5 m	8078223	NEBA-M8G3-U-2.5-N-LE3	
				5 m	8078224	NEBA-M8G3-U-5-N-LE3	
			4	2.5 m	8078227	NEBA-M8G4-U-2.5-N-LE4	

Connecting cables NEBA, angled

	Electrical connection 1, connector system	Electrical connection 2, connector system	Electrical connection 2, number of connections/ cores	Cable length	Part no.	Type
	M12x1, A-coded to EN 61076-2-101	Open end	4	2.5 m	8078248	NEBA-M12W5-U-2.5-N-LE4
				5 m	8078249	NEBA-M12W5-U-5-N-LE4
	M8x1, A-coded, to EN 61076-2-104		3	2.5 m	8078230	NEBA-M8W3-U-2.5-N-LE3
				5 m	8078231	NEBA-M8W3-U-5-N-LE3
			4	2.5 m	8078233	NEBA-M8W4-U-2.5-N-LE4

Accessories

Pressure gauge MA						
	Conforms to standard	Pneumatic connection	LABS (PWIS) conformity	Product weight	Part no.	Type
	EN 837-1	G1/4	VDMA24364-B1/ B2-L	70 g	183901	MA-40-16-G1/4-EN
		R1/8		60 g	525726	MA-40-16-R1/8-E-RG
		R1/4		70 g	187080	MA-40-16-R1/4-EN
				75 g	525729	MA-50-16-R1/4-E-RG

Cover cap MS4-END						
	Size	Material housing	LABS (PWIS) conformity	Part no.	Type	
	4	PA-reinforced	VDMA24364-B1/B2-L	538779	MS4-END	

Mounting plate MS4-AEND						
	Size	Material plate	LABS (PWIS) conformity	Product weight	Part no.	Type
	4	PA-reinforced	VDMA24364-B1/B2-L	4 g	542966	MS4-AEND

Connecting plate SET MS4-AQ...						
	Size	Pneumatic connection, port 1	LABS (PWIS) conformity	Product weight	Part no.	Type
	4	1/8 NPT	VDMA24364-B1/B2-L	128 g	526065	MS4N-AQK
		1/4 NPT			526066	MS4N-AQN
		3/8 NPT			526067	MS4N-AQP

Nut MS...-WRS						
	Size	Material nut	LABS (PWIS) conformity	Product weight	Part no.	Type
	4	Wrought aluminium alloy	VDMA24364-B1/B2-L	6.9 g	532187	MS4-WRS

Accessories

Padlock LRVS-D				
	LABS (PWIS) conformity	Product weight	Part no.	Type
	VDMA24364-B1/B2-L	120 g	193786	LRVS-D