

Pressure regulator MS4N-LR

FESTO



Characteristics

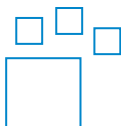
At a glance

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

- Width dimension: 40 mm
- Good regulation 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 performance with minimal pressure drop
- Optional pressure sensor

Ordering data - modular system

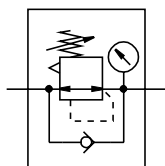
Link [ms4n-lr](#)



Configurable product

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

Function



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

Pneumatic connection

The installation of connection plates makes it 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].

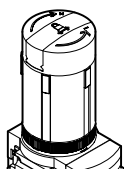
Secondary venting

The regulated working pressure can also be reduced without a consumer via the optional secondary venting.

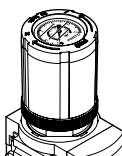
Rotary knob alternative

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

[LD] Long rotary knob

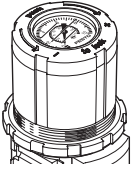


[DM1] Rotary knob pressure gauge, small



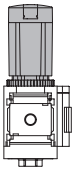
Characteristics

[DM2] Rotary knob pressure gauge, large



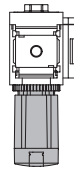
Alternative mounting position

[] Without



Rotary knob positioned above the device as standard.

[KD] Rotary knob underneath

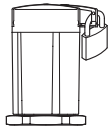


Optionally with rotary knob positioned below the device.

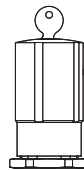
Lockable

Optional possibility to lock the knob to protect the setting values from adjustment.

[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

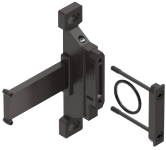
[WP] Mounting bracket standard design



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

Characteristics

[WPM] Mounting bracket for hooking in air preparation units



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

[WBM] Mounting centrally at rear (wall mounting top), sub-bases not required



- For wall mounting an individual device

[WB] Mounting centrally at rear (wall mounting top and bottom), sub-bases not required



- For wall mounting an individual device

Flow direction

Available with opposite flow direction.

Type code

001	Series	
MS	MS series	
002	Size	
4	Width dimension 40 mm	
003	Thread type	
N	NPT thread	
004	Function	
LR	Pressure regulator	
005	Pneumatic connection, inch	
1/8	Internal thread NPT 1/8	
1/4	Internal 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	
	Without	
A4	Adapter plate for EN pressure gauge 1/4, without pressure gauge	
A8	Adapter plate 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, analog output 4 ... 20 mA	
AD4	Pressure sensor with LCD display, M12 plug, NPN, 4-pin, analog 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 venting	
	With secondary exhaust	
OS	Without secondary exhaust	
010	Rotary knob alternative	
	Without	
LD	Long rotary knob	
DM1	Rotary knob pressure gauge, small	
DM2	Rotary knob pressure gauge, large	
011	Alternative mounting position	
	Without	
KD	Rotary knob underneath	
012	Lockable	
	Without	
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), sub-bases not required	
WBM	Mounting centrally at rear (wall mounting top), sub-bases not required	
WP	Mounting bracket standard design	
WPM	Mounting bracket for hooking in air preparation units	
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 1	1/8 NPT	1/4 NPT	1/8 NPT	1/4 NPT	1/8 NPT	1/4 NPT
Pneumatic connection 2	1/8 NPT	1/4 NPT	1/8 NPT	1/4 NPT	1/8 NPT	1/4 NPT
Size	4					
Structural design	Directly controlled diaphragm regulator					
Controller function	Outlet pressure constant, With secondary exhausting, With return flow function					
Type of mounting	Optionally: Front panel mounting Line installation With accessories					
Mounting position	Any					
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	with pressure gauge					

Standard nominal flow rate q_{nN}

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 1	1/8 NPT	1/4 NPT	1/8 NPT	1/4 NPT	1/8 NPT	1/4 NPT
Normal nominal flow rate (normalized 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 as per ISO 8573-1:2010 [7:4:4], Inert gases
Information on operating and pilot media	Operation with oil lubrication possible (required for further use)
Ambient temperature	-10 ... 60°C
Temperature of medium	-10 ... 60°C
Storage temperature	-10 ... 60°C
Corrosion resistance class (CRC) ¹⁾	2 - Moderate corrosion stress
For use in the food industry ²⁾	See supplementary material information

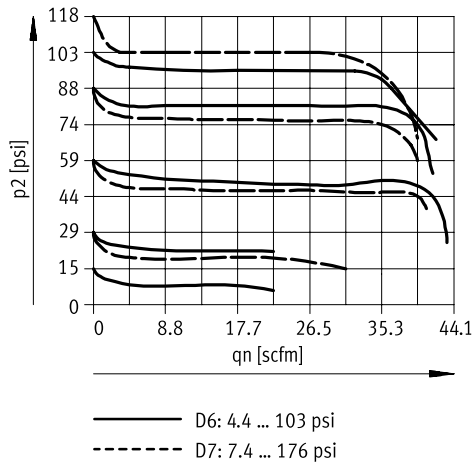
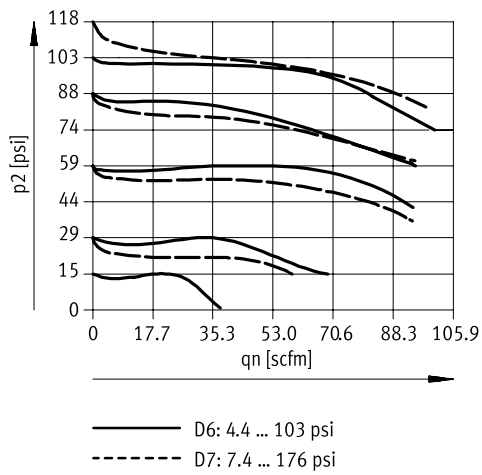
1) Further information, visit www.festo.com/x/topic/kbk

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

Materials

Housing material	Die-cast aluminum
Diaphragm material	NBR
Material of sub-base	Die-cast aluminum
Seals material	NBR
Note on materials	RoHS-compliant
LABS (PWIS) conformity	VDMA24364-B1/B2-L

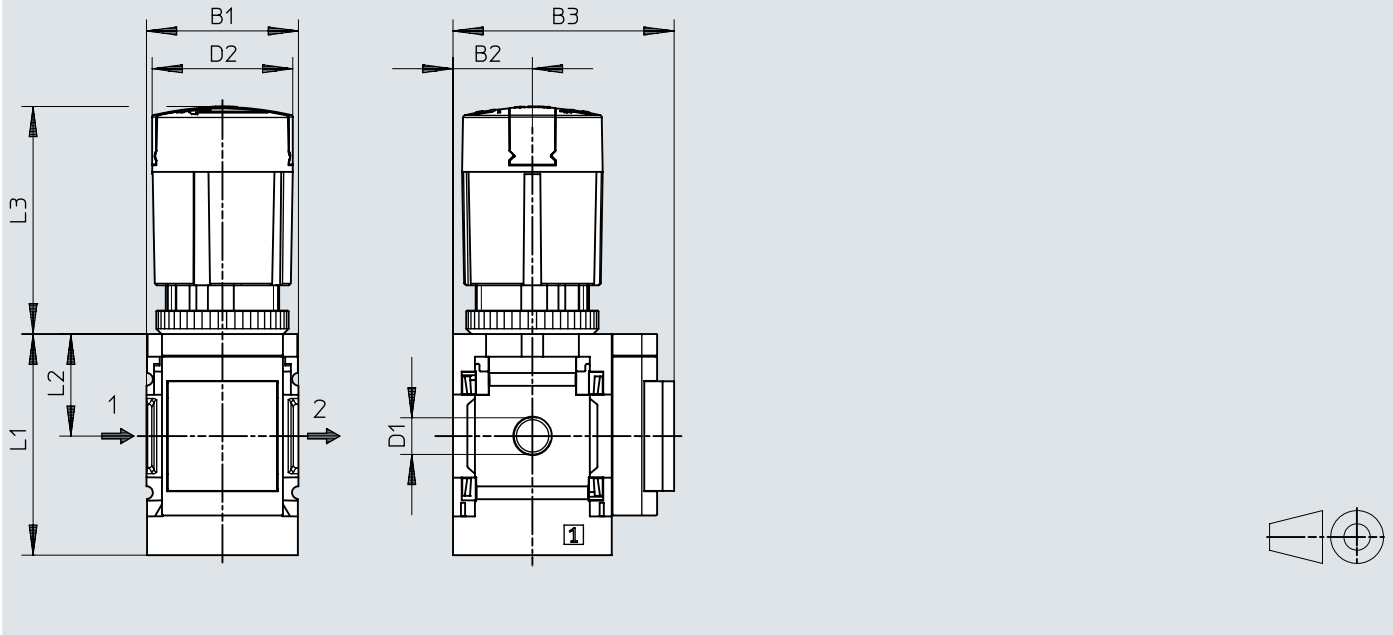
Datasheet

Normal flow rate q_n as a function of the outlet pressure p_2 ($p_1 = 147 \text{ psi}$) - MS4N-LR-1/8Link [7102](#)Normal flow rate q_n as a function of outlet 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



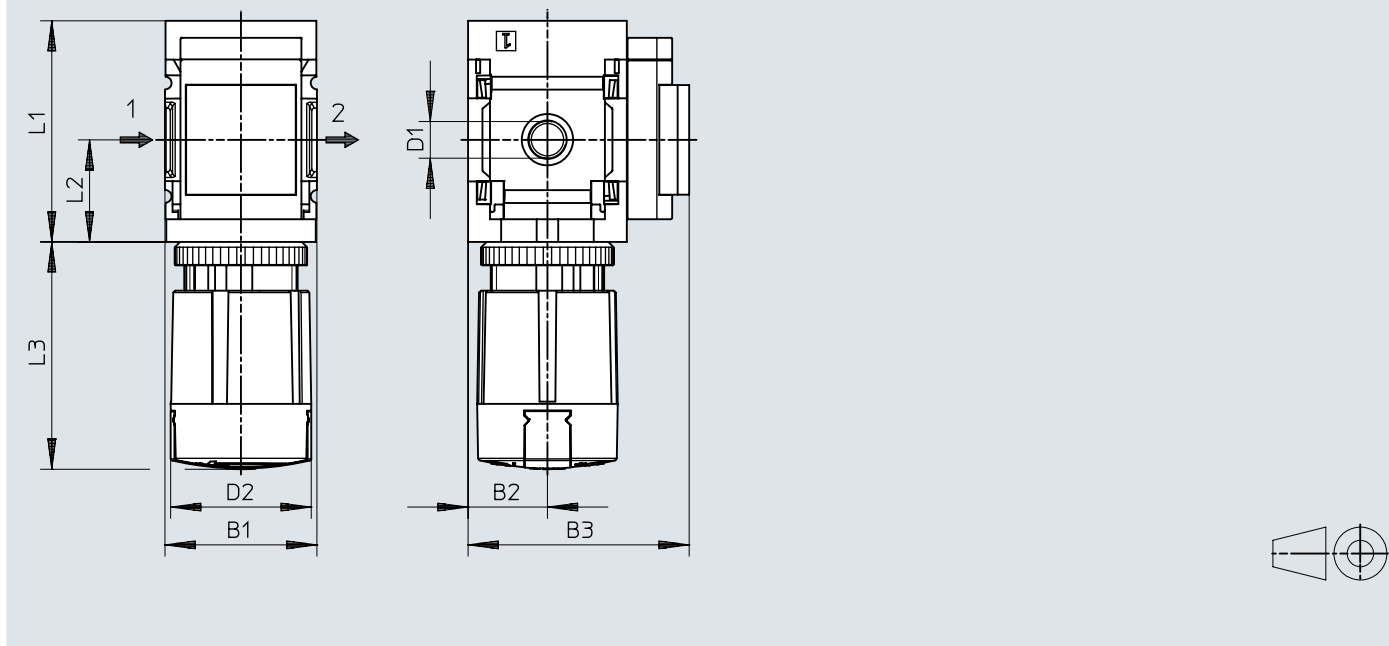
	B1	B2	B3		D1	D2	L1	L2	L3
	[inch]	[inch]	1) [inch]	RG [inch]		[inch]	[inch]	[inch]	[inch]
MS4N-LR-1/8	1,57	0,83	2,24	2,30	1/8 NPT	1,46	2,32	1,06	2,37
MS4N-LR-1/4					1/4 NPT				

1) Standard scale

Dimensions

Dimensions – Alternative mounting position, rotary knob at the bottom

Download CAD data www.festo.com

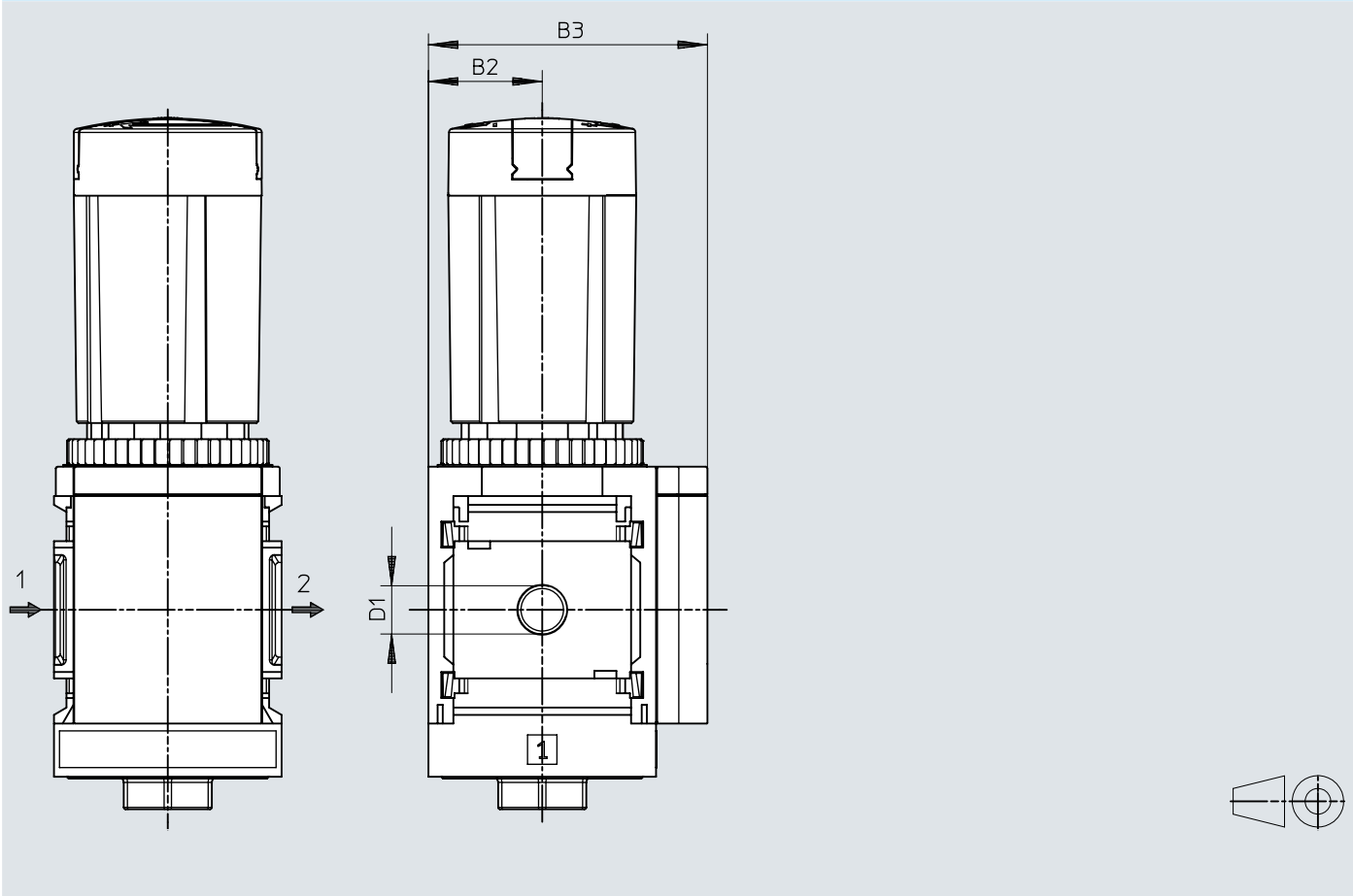


	B1	B2	B3		D1	D2	L1	L2	L3
	[inch]	[inch]	1) [inch]	RG [inch]		[inch]	[inch]	[inch]	[inch]
MS4N-LR-1/8-...-KD	1,57	0,83	2,24	2,30	1/8 NPT	1,46	2,32	1,06	2,37
MS4N-LR-1/4-...-KD					1/4 NPT				

1) Standard scale

Dimensions

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

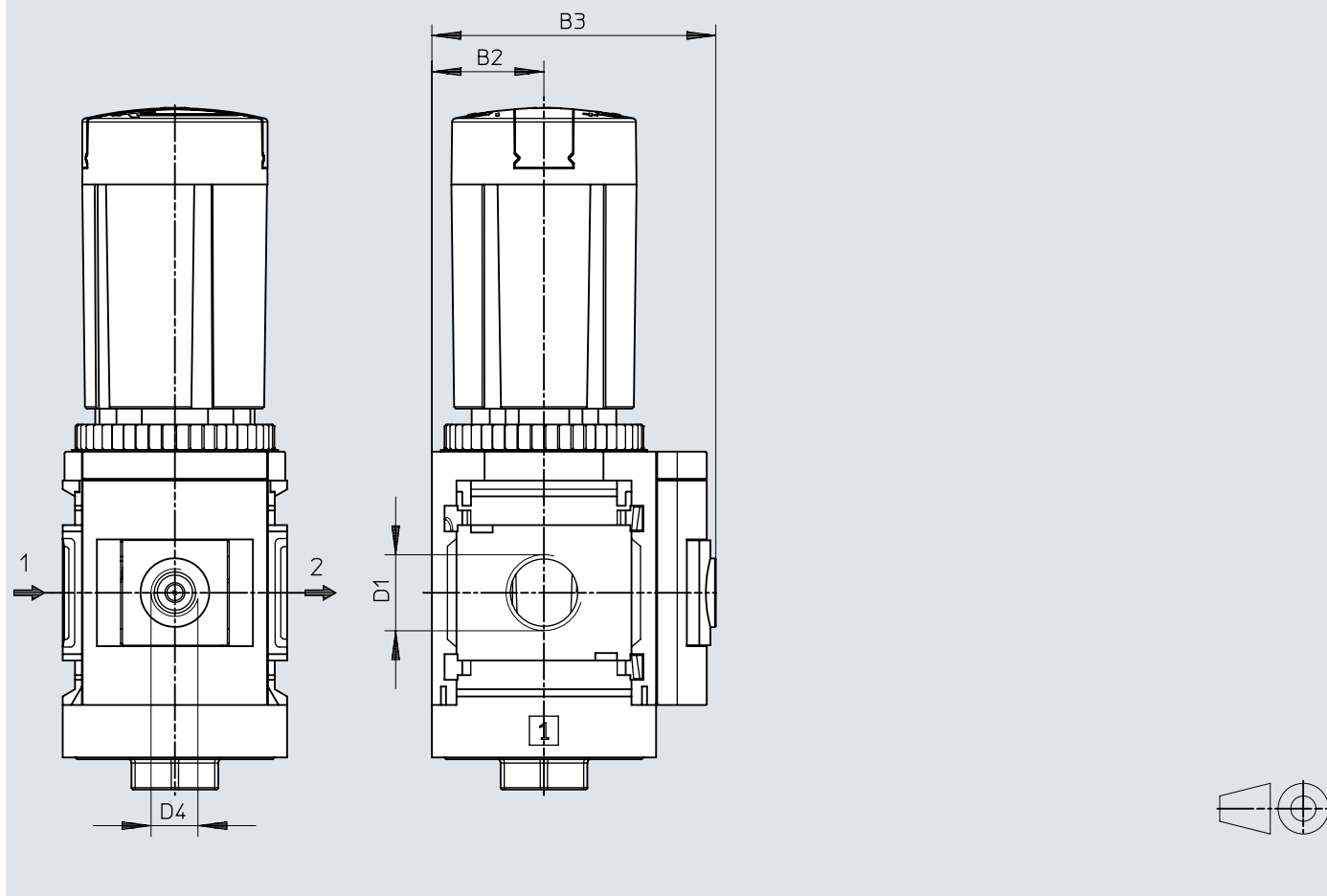


	B2 [inch]	B3 [inch]	D1
MS4N-LR-1/8-...-VS	0,83	2,13	1/8 NPT
MS4N-LR-1/4-...-VS			1/4 NPT

Dimensions

Dimensions – Pressure gauge alternatives, adapter for EN pressure gauge

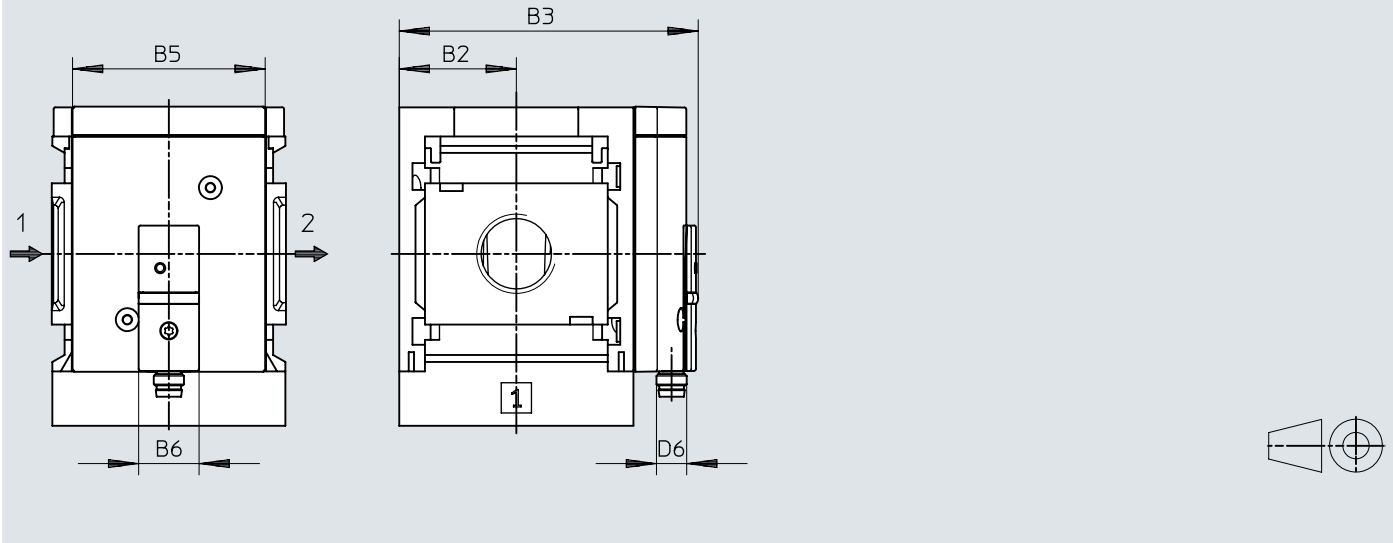
Download CAD data www.festo.com



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

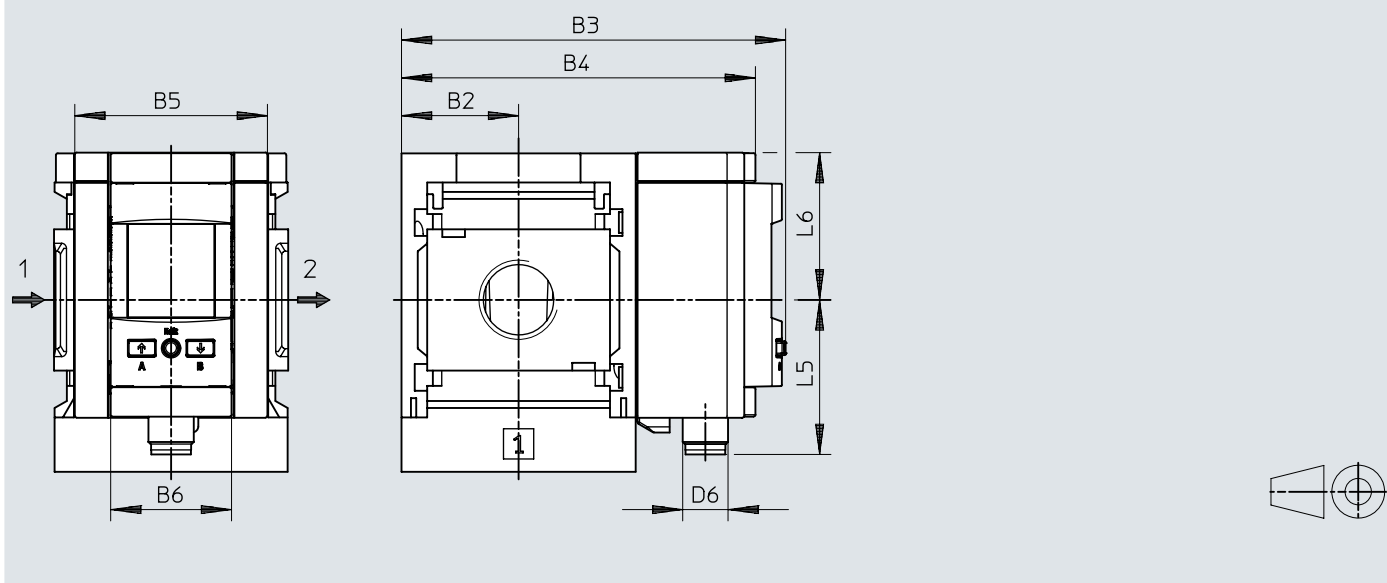


	B2 [inch]	B3 [inch]	B5 [inch]	B6 [inch]	D6
MS4N-LR-....AD7/AD8/AD9/AD10	0,83	2,33	1,26	0,63	M8x1

Dimensions

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

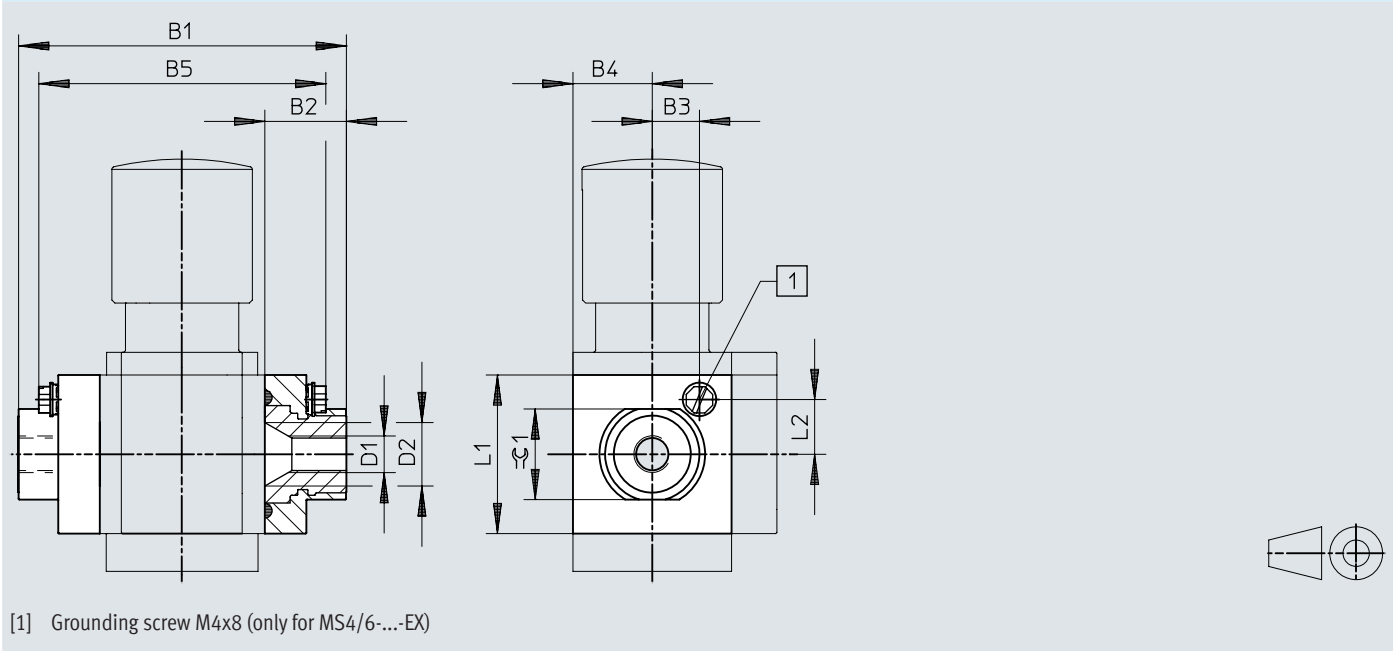
Download CAD data www.festo.com



	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

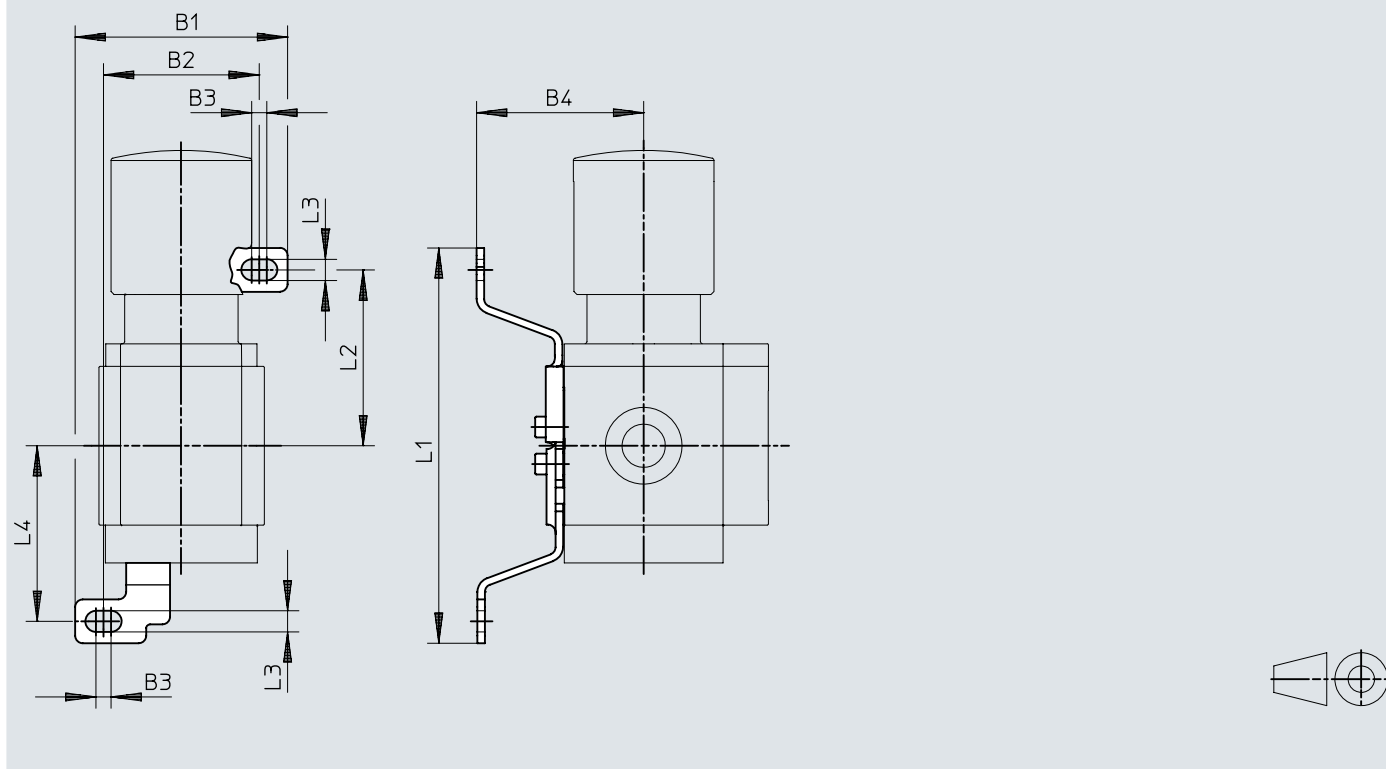


	B1 [inch]	B2 [inch]	B3 [inch]	B4 [inch]	B5 [inch]	D1	D2 [inch]	L1 [inch]	L2 [inch]	±0.1 [inch]
MS4N-LR-...-AQK	3,28	0,85	0,49	0,83	2,85	1/8-27 NPT	0,66	1,65	0,57	0,94
MS4N-LR-...-AQN						1/4-18 NPT				
MS4N-LR-...-AQP						3/8-18 NPT				

Dimensions

Dimensions – Type of mounting, WB mounting bracket

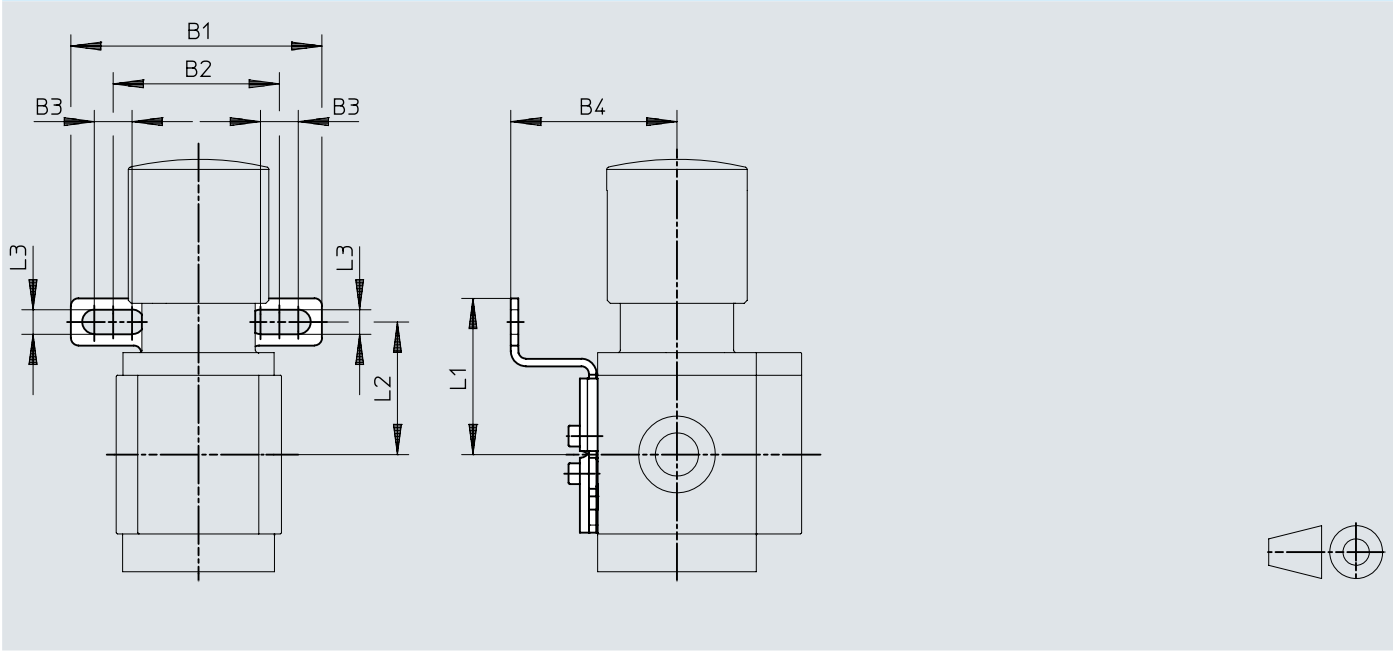
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	B1 [inch]	B2 [inch]	B3 [inch]	B4 [inch]	L1 [inch]	L2 [inch]	L3 [inch]	L4 [inch]
MS4-WB	2,20	1,61	0,16	1,74	4,12	1,83	0,22	1,83

Dimensions

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

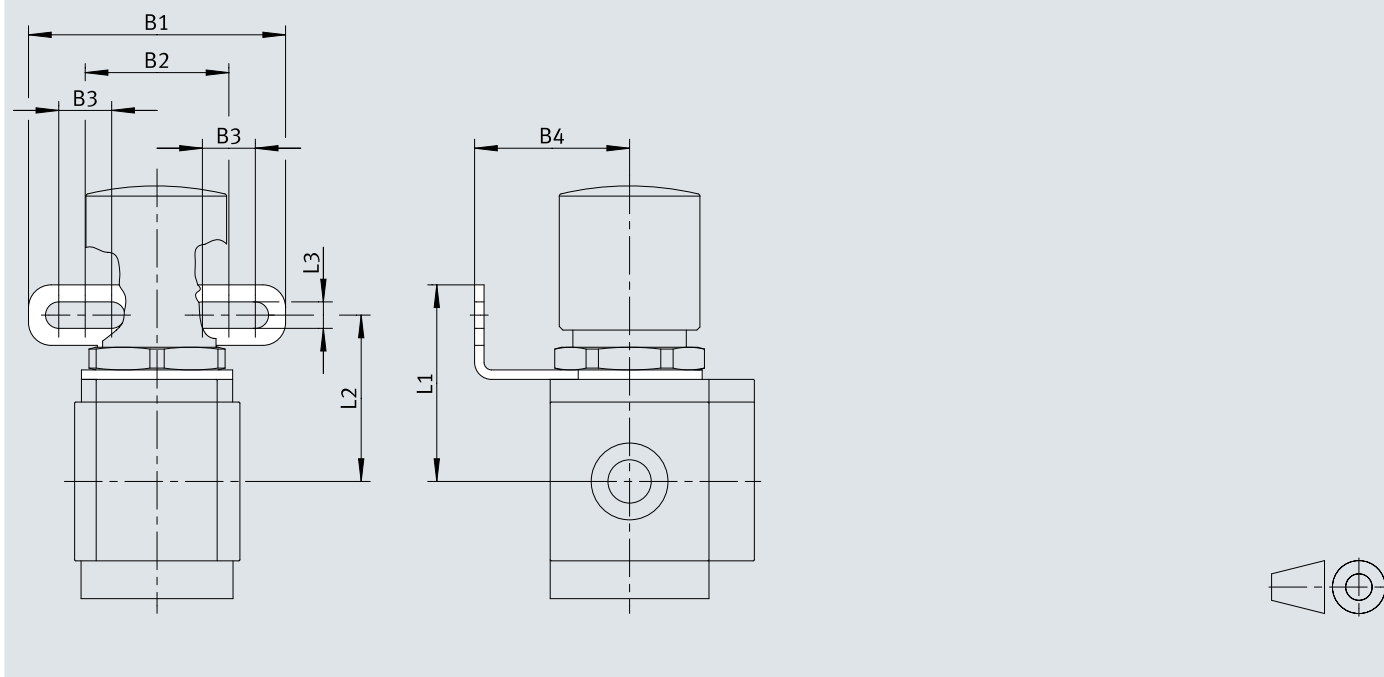


	B1 [inch]	B2 [inch]	B3 [inch]	B4 [inch]	L1 [inch]	L2 [inch]	L3 [inch]
MS4-WBM	2,62	1,73	0,39	1,73	1,63	1,38	0,26

Dimensions

Dimensions – Type of mounting, WR mounting bracket

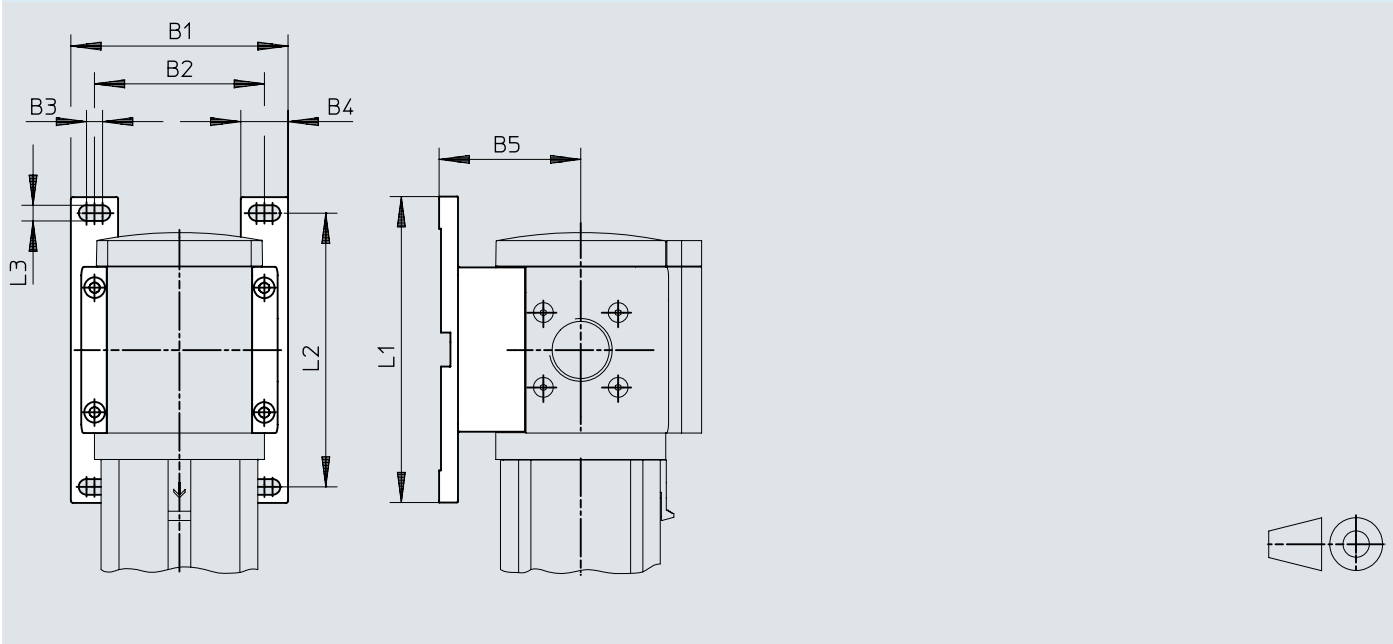
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	B1 [inch]	B2 [inch]	B3 [inch]	B4 [inch]	L1 [inch]	L2 [inch]	L3 [inch]
MS4-WR	2,68	1,73	0,31	1,61	2,05	1,73	0,28

Dimensions

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

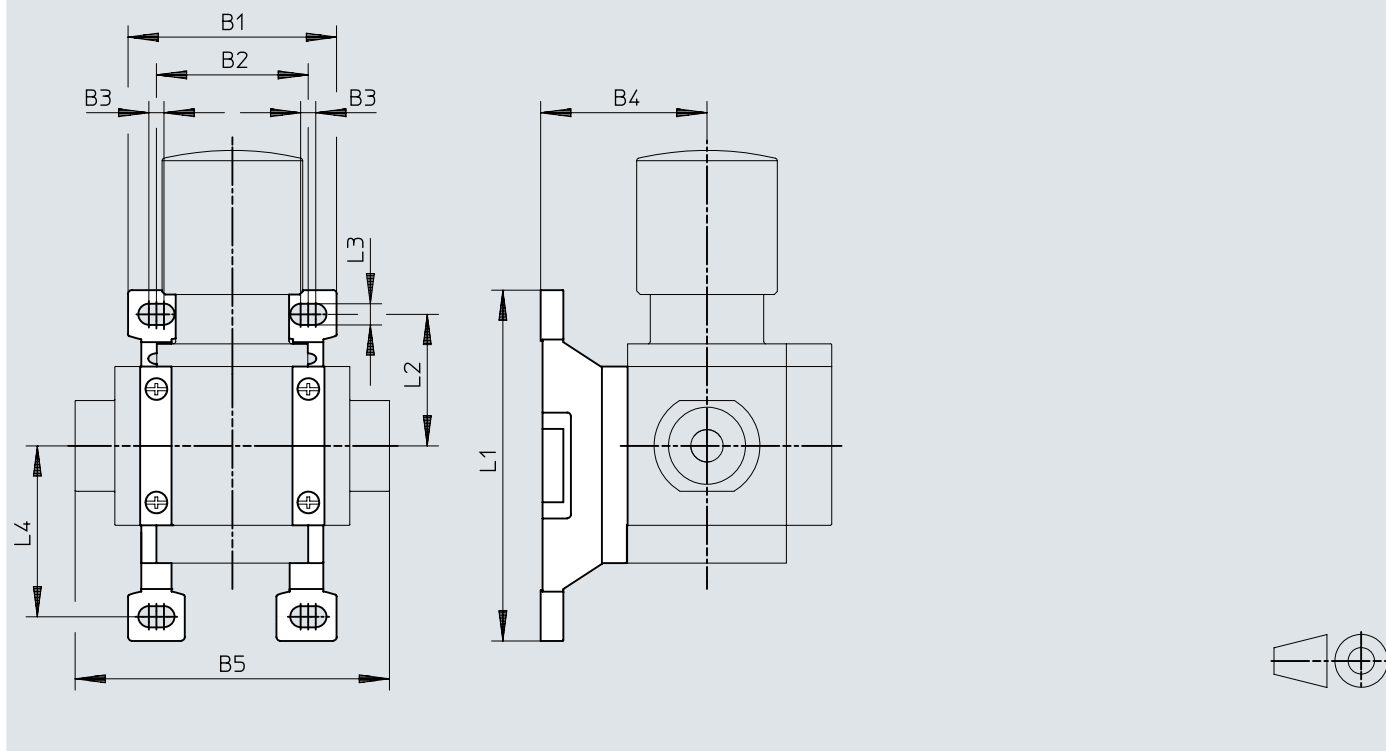


	B1 [inch]	B2 [inch]	B3 [inch]	B4 [inch]	B5 [inch]	L1 [inch]	L2 [inch]	L3 [inch]	L4 [inch]
MS4-WP	2,17	1,58	0,16	1,73	3,28	4,17	1,83	0,22	1,84

Dimensions

Dimensions – Type of mounting, WPM mounting bracket

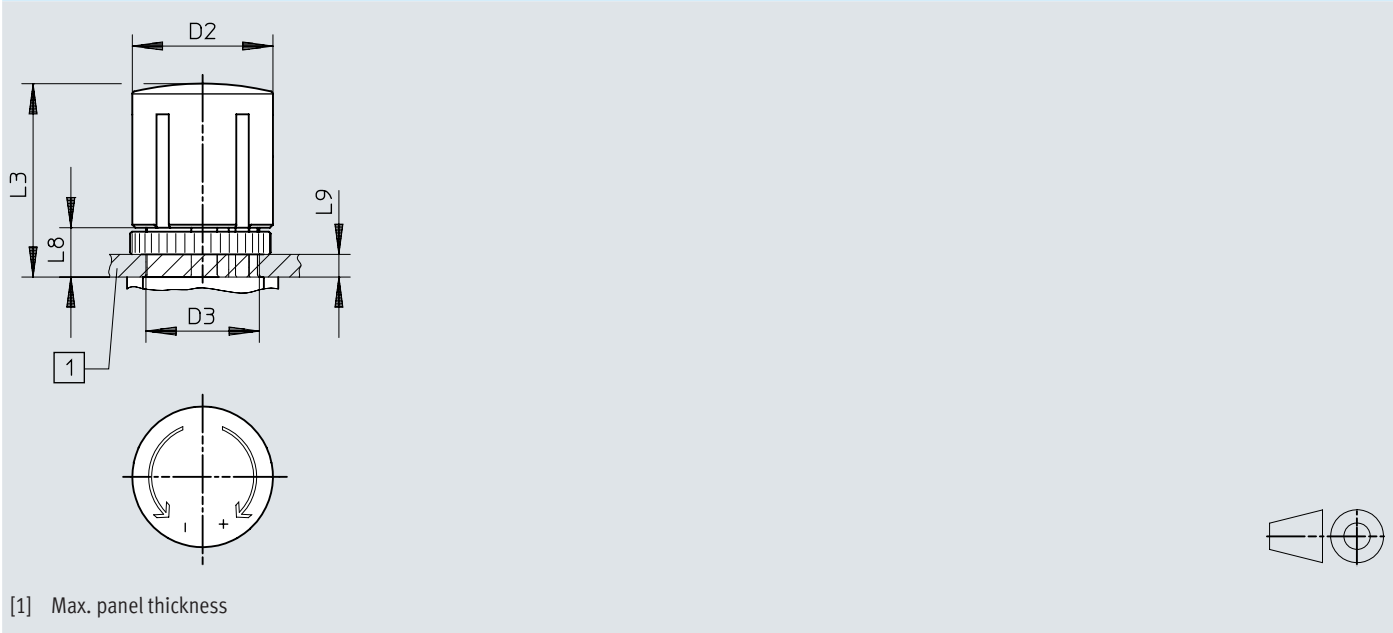
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	B1 [inch]	B2 [inch]	B3 [inch]	B4 [inch]	B5 [inch]	L1 [inch]	L2 [inch]	L3 [inch]	L4 [inch]
MS4-WPM	2,17	1,58	0,16	1,73	3,28	3,65	1,37	0,22	1,78

Dimensions

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

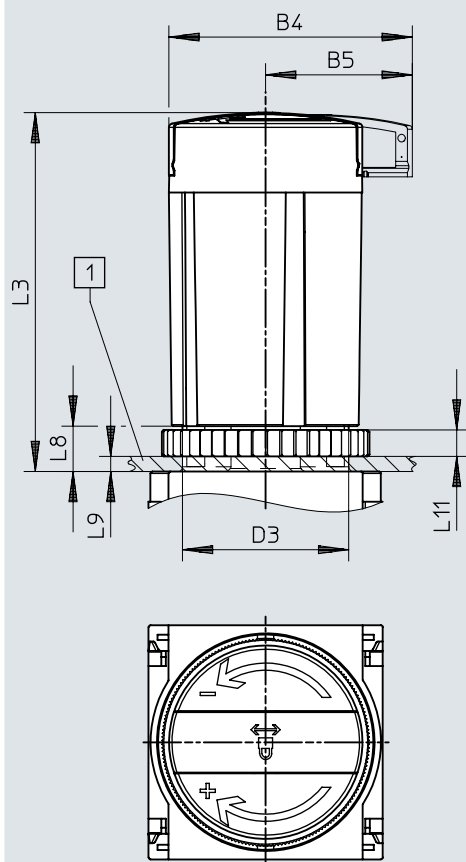


	D2 [inch]	D3	L3 [inch]	L8 [inch]	L9 [inch]
MS4N-LR...	1,46	M30x1,5	2,01	0,51	0,24

Dimensions

Dimensions – Rotary knob with latch, closable with accessories

Download CAD data www.festo.com

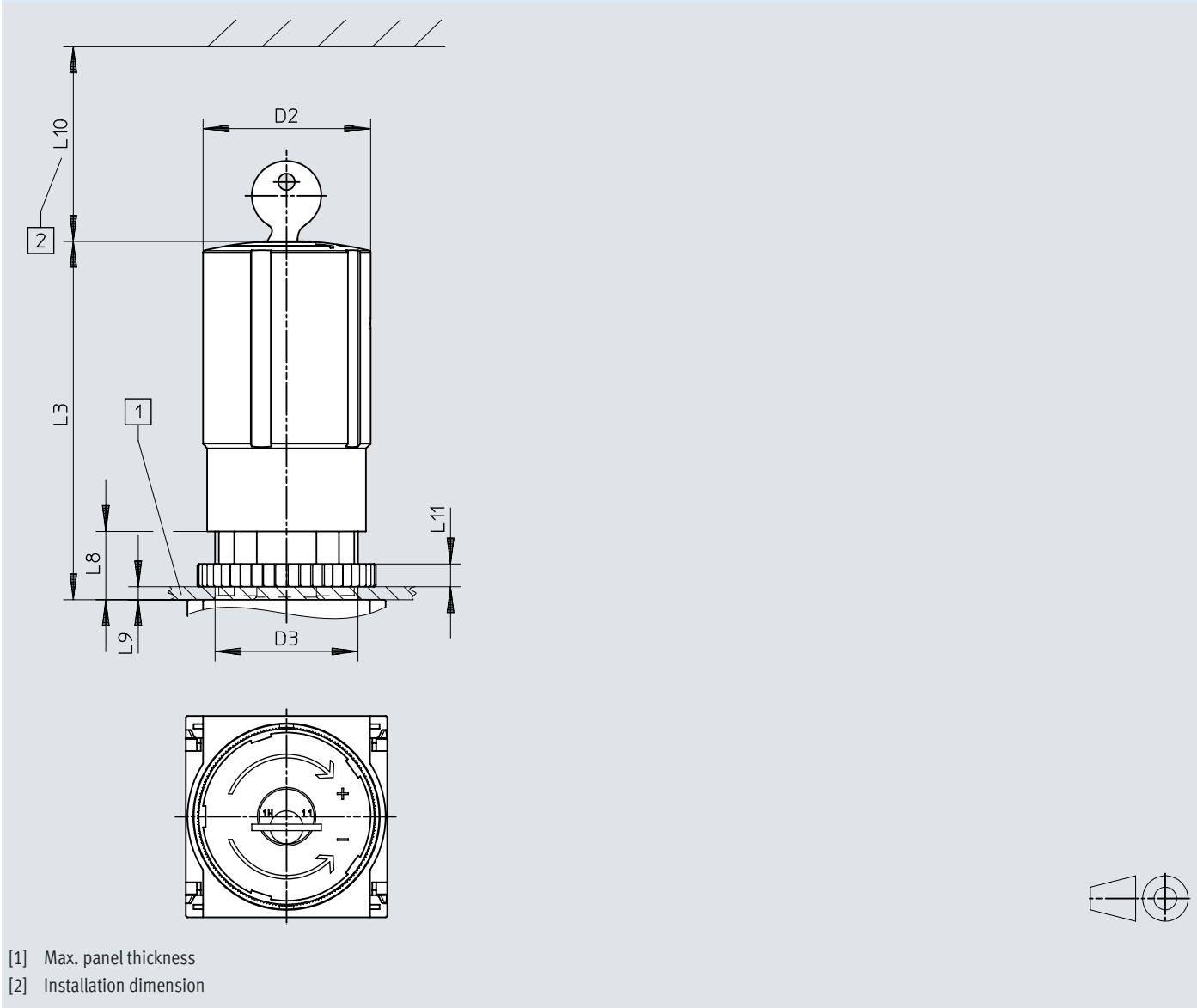


[1] Max. panel thickness

	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

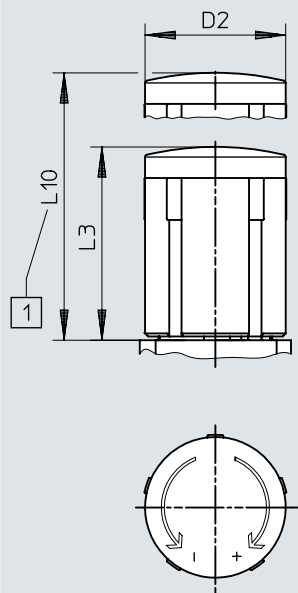
Dimensions – Rotary knob with integrated lock Download CAD data www.festo.com



	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

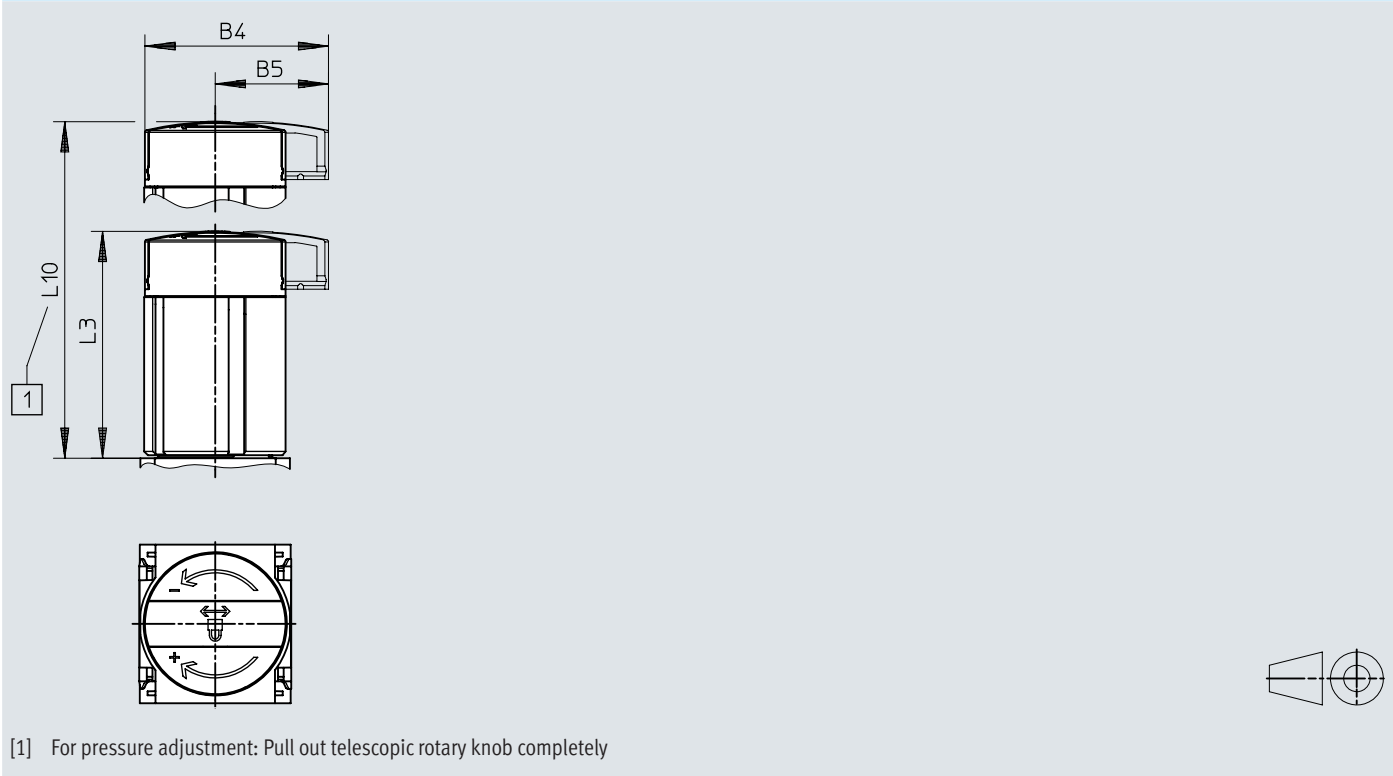
[Download CAD data](#) www.festo.com


[1] For pressure adjustment: Pull out telescopic rotary knob completely

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

Dimensions

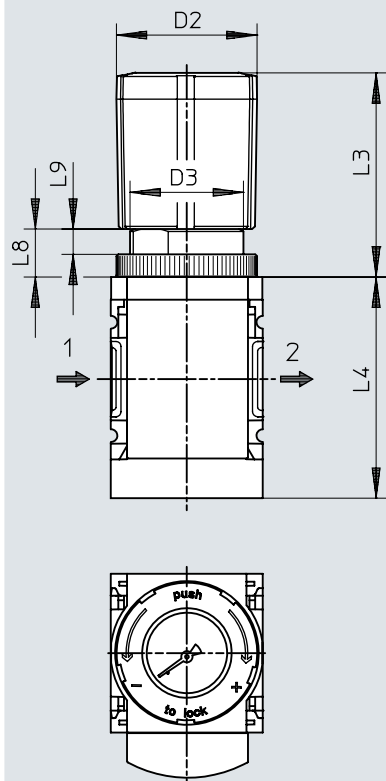
Dimensions – Rotary knob long with latch, closable with accessories Download CAD data www.festo.com



	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

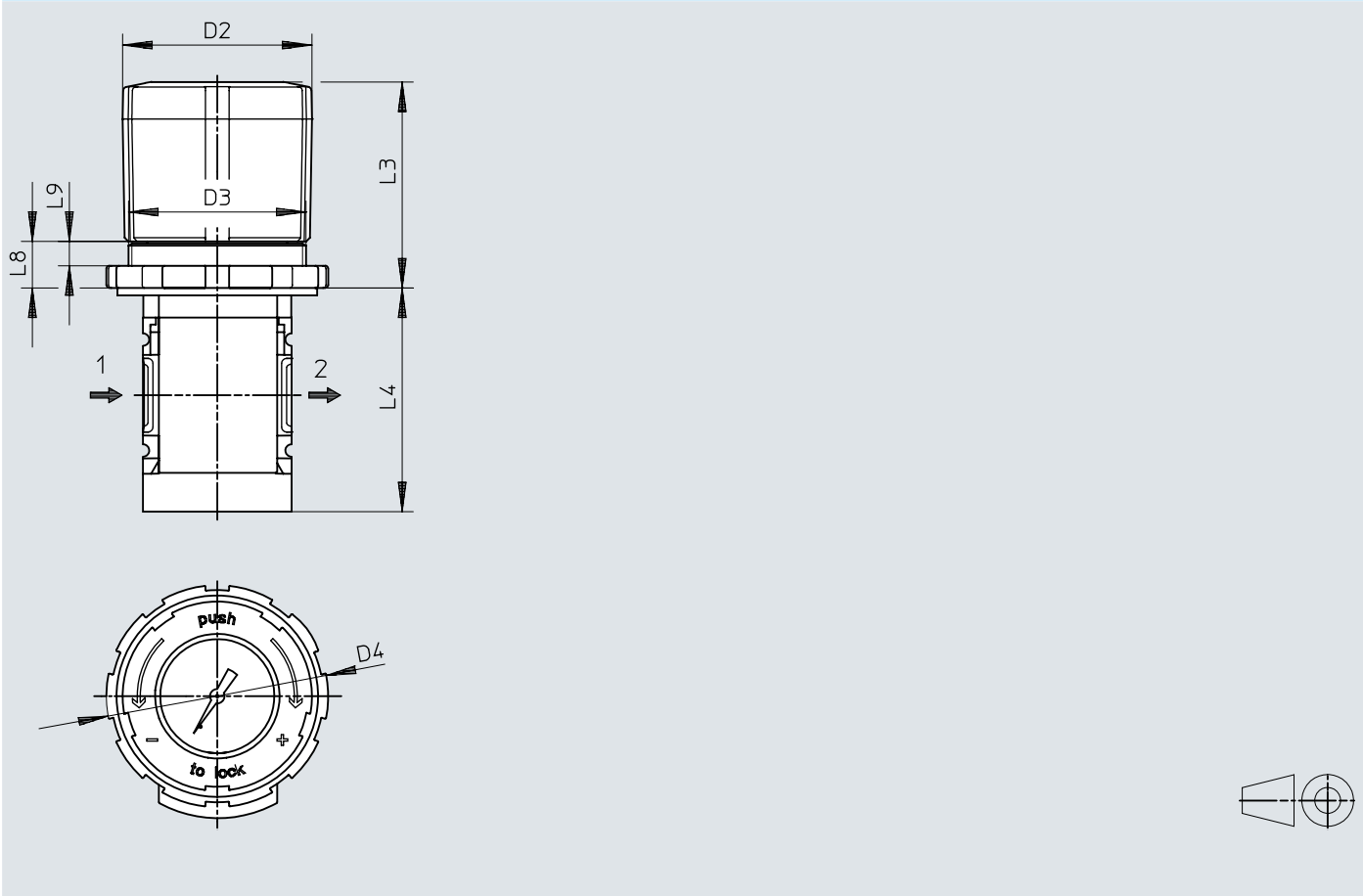
Dimensions – Rotary knob pressure gauge, small

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

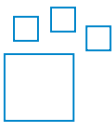
Dimensions – Rotary knob pressure gauge, large Download CAD data www.festo.com



	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

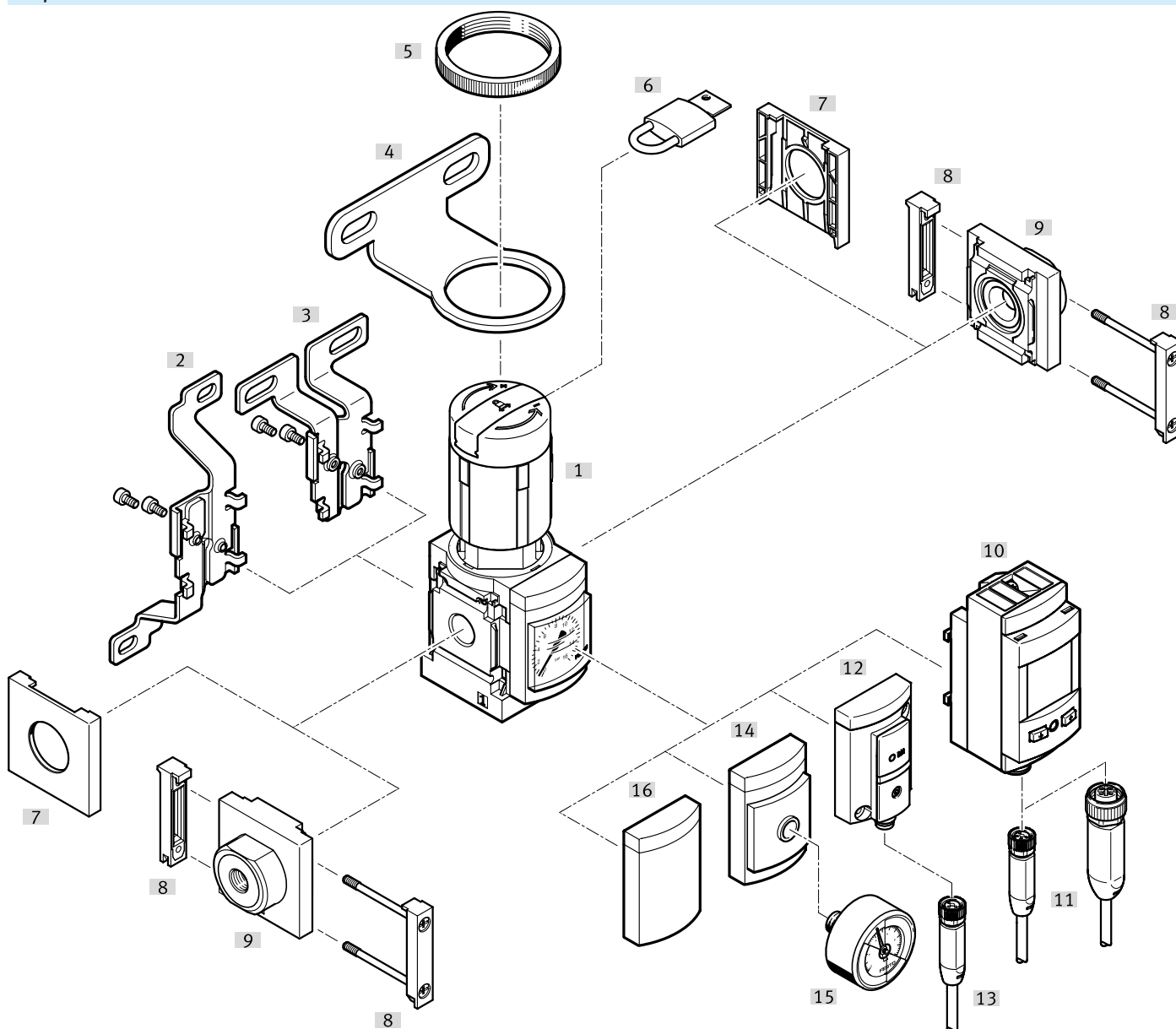
Ordering data

Ordering data					
	Pneumatic connection 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
				531428	MS4N-LR-1/4-D7-AS-Z
		0.5 ... 12 bar		531426	MS4N-LR-1/4-D7-AS

Ordering information – modular product system			
	Type code	Part no.	Type
	MS4N-LR	527691	MS4N-LR

Peripherals overview

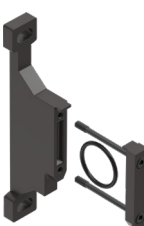
Peripherals overview



Accessories		→ Page/Internet
Type/order code	Description	
[1] Pressure control valve 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 sub-base	31
[8] Module connector MS4-MV	for device combinations and individual devices with sub-base	29
[9] Sub-base-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	Module connector material	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	Bracket material	LABS (PWIS) conformity	Product weight	Part no.	Type
			VDMA24364-B1/B2-L		558869	MS4-WPE
	4	Die-cast aluminum		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	Bracket material	LABS (PWIS) conformity	Product weight	Part no.	Type
	4	Steel	VDMA24364-B1/B2-L	46 g	532185	MS4-WB

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

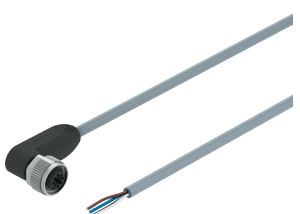
Pressure sensor SPAU-...-T

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

Connecting cables NEBA, straight

Connecting cables NEBA, straight						
	Electrical connection 1, connection technology	Electrical connection 2, connection technology	Electrical connection 2, number of pins/wires	Cable length	Part no.	Type
	M12x1 A-coded as per 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 as per 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

Connecting cables NEBA, angled	Electrical connection 1, connection technology	Electrical connection 2, connection technology	Electrical connection 2, number of pins/wires	Cable length	Part no.	Type
	M12x1 A-coded as per 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 as per 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	Housing material	LABS (PWIS) conformity	Part no.	Type	
	4	PA-reinforced	VDMA24364-B1/B2-L	538779	MS4-END	

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

Sub-base SET MS4-AQ...						
	Size	Pneumatic connection 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	Nut material	LABS (PWIS) conformity	Product weight	Part no.	Type
	4	Wrought aluminum 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