

Precision pressure regulator MS6N-LRP

FESTO



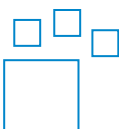
Characteristics

At a glance

- Width dimension: 62 mm
- Good regulation characteristics with minimal pressure hysteresis and primary pressure compensation
- High secondary venting for fast reaction times
- Optional pressure sensor
- Optional device variant EX4 for use in potentially explosive areas of zones 1, 2, 21 and 22

Ordering data - modular system

Link [ms6n-lrp](#)



Configurable product

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

Function

[LRP] Precision pressure regulator

For sensitive applications with required pressure hysteresis of 0.02 bar. The output pressure p2 can be set within the pressure regulation range either manually with the rotary knob or pneumatically via a pilot pressure p12 from an external pilot controller (preferably with a precision pressure regulator).

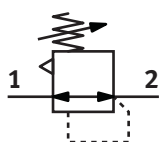
Pneumatic connection

The installation of connection plates makes it easier to replace the module if necessary (e.g., when using piping).

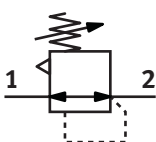
Pressure regulation range

There are different pressure regulation ranges:

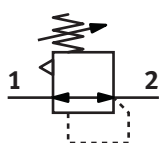
[D2] 0.05 ... 0.7 bar



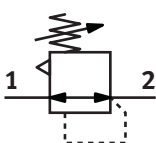
[D4] 0.05 ... 2.5 bar



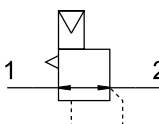
[D5] 0.1 ... 4 bar



[D7] 0.1 ... 12 bar



[P0] Max. 12 bar, pneumatically actuated (pressure range determined by pilot regulator)



Pressure gauge alternatives

Two pressure gauge connections for variable installation

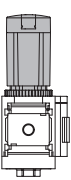
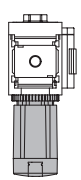
Rotary knob alternative

Optionally with longer rotary knob.

Characteristics

Alternative mounting position

Optionally with rotary knob positioned below the device.

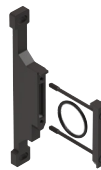
[] Without	[KD] Rotary knob underneath
	

Type of mounting

[WR] Mounting bracket with knurled nut on regulator knob	[WP] Mounting bracket standard design
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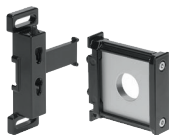


- For wall mounting an individual device



- For connecting the modules for wall mounting
- In conjunction with sub-base MS6-AQ... 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 for mixed combination with series MS4 and MS6

[WPM] Mounting bracket for hooking in air preparation units	[WB] Mounting centrally at rear (wall mounting top and bottom), sub-bases not required
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- For connecting the modules for wall mounting
- In conjunction with sub-base MS6-AQ... 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 regulator knob pointing downwards

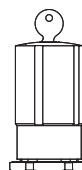
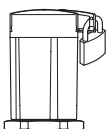


- For wall mounting an individual device

Lockable

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

[AS] Can be locked using accessories	[E11] With integrated lock
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Flow direction

Available with opposite flow direction.

Type code

001	Series	
MS	MS series	
002	Size	
6	Width dimension 62 mm	
003	Thread type	
N	NPT thread	
004	Function	
LRP	Precision pressure regulator	
005	Pneumatic connection, inch	
1/4	Internal thread NPT 1/4	
3/8	Internal thread NPT 3/8	
1/2	Internal thread NPT 1/2	
AQN	Sub-base NPT 1/4	
AQP	Sub-base NPT 3/8	
AQR	Sub-base NPT 1/2	
AQS	Sub-base NPT 3/4	
006	Pressure range/actuation	
D2	0.05 ... 0.7 bar, manually actuated	
D4	0.05 ... 2.5 bar, manually actuated	
D5	0.1 ... 4 bar, manually actuated	
D7	0.1 ... 12 bar, manually actuated	
PE10	0.01... 1 MPa electrically actuated (pilot control by proportional pressure control valve with LED display, 7-segment) 0-10V	
PI10	0.01... 1 MPa electrically actuated (pilot control by proportional pressure control valve with LED display, 7-segment), target value 4-20mA	
PO	0.1 ... 12 bar, pneumatically actuated (pressure range determined by pilot regulator)	

007	Pressure gauge alternatives	
A4	Adapter plate for EN pressure gauge 1/4, without pressure gauge	
A8	Adapter plate for EN pressure gauge 1/8, without pressure gauge	
A8M	Adapter for EN pressure gauge 1/8, with precision pressure gauge	
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	
AD11	Pressure sensor with LCD display, M12 4-pin plug, IO-Link®, PNP, NPN, 0...10 V, 1...5 V, 4...20 mA	
AD12	Pressure sensor with LCD display, M8 4-pin plug, IO-Link®, PNP, NPN, 0...10 V, 1...5 V, 4...20 mA	
VS	Cover plate	
008	Rotary knob alternative	
	Without	
LD	Long rotary knob	
009	Alternative mounting position	
	Without	
KD	Rotary knob underneath	
010	Lockable	
	Without	
AS	Can be locked using accessories	
E11	With integrated lock	
011	Type of mounting	
	Without mounting bracket	
WB	Mounting centrally at rear (wall mounting top and bottom), 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	
012	Flow direction	
	Flow direction from left to right	
Z	Flow direction from right to left	

Datasheet

General technical data

Pressure regulation range	0.1 ... 4 bar	0.05 ... 0.7 bar	0.05 ... 2.5 bar	0.1 ... 12 bar
Pneumatic connection 1	1/4 NPT, 1/2 NPT		1/4 NPT, 3/8 NPT, 1/2 NPT	
Pneumatic connection 2	1/4 NPT, 1/2 NPT		1/4 NPT, 3/8 NPT, 1/2 NPT	
Pneumatic connection 3	G1/4			
Size	6			
Structural design	Pilot-controlled precision diaphragm regulator			
Controller function	Constant output pressure, With secondary exhausting			
Type of mounting	Alternatively: Front panel mounting In-line installation With accessories			
Mounting position	Any			
Actuator lock	Rotary knob with detent			
Max. pressure hysteresis	0.02 bar			
Pressure gauge	Set up for G1/8			

Standard nominal flow rate q_N

Pressure regulation range	0.1 ... 4 bar		0.05 ... 0.7 bar			0.05 ... 2.5 bar			0.1 ... 12 bar		
Pneumatic connection 1	1/4 NPT	1/2 NPT	1/4 NPT	3/8 NPT	1/2 NPT	1/4 NPT	3/8 NPT	1/2 NPT	1/4 NPT	3/8 NPT	1/2 NPT
Normal nominal flow rate (normalized to DIN 1343)	≥1400 l/min	≥3000 l/min	≥800 l/min	≥1100 l/min	≥1600 l/min	≥1100 l/min	≥1400 l/min	≥2300 l/min	≥3000 l/min	≥3300 l/min	≥5000 l/min
Flow rate of secondary venting	≥650 l/min		≥220 l/min			≥450 l/min			≥900 l/min		

Operating and environmental conditions

Operating pressure	1 ... 14 bar
Operating medium	Compressed air as per ISO 8573-1:2010 [7:4:4], Inert gases
Information on operating and pilot media	Ester oil < 0.1mg/m ³ , according to ISO 8573-1:2010 [---:2], Operation with oil lubrication not possible
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
Certificate issuing authority	UL E322346

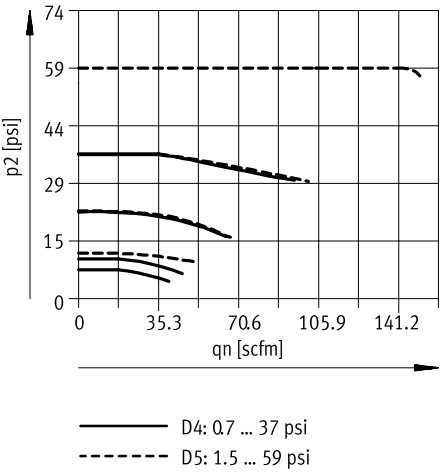
1) Corrosion resistance class CRC 2 to Festo standard FN 940070. Moderate corrosion stress. Indoor application where condensation is allowed to occur. External visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment.

Materials

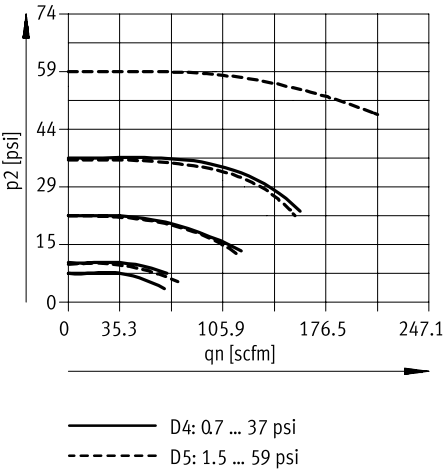
Housing material	Aluminum
Seals material	NBR
Note on materials	RoHS compliant
LABS (PWS) conformity	VDMA24364-B1/B2-L

Datasheet

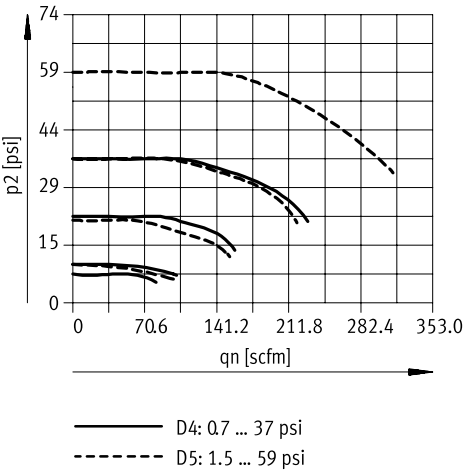
Normal flow rate q_n as a function of the outlet pressure p_2 ($p_1 = 147$ psi) - MS6N-LRP-1/4



Normal flow rate q_n as a function of the outlet pressure p_2 ($p_1 = 147$ psi) - MS6N-LRP-3/8



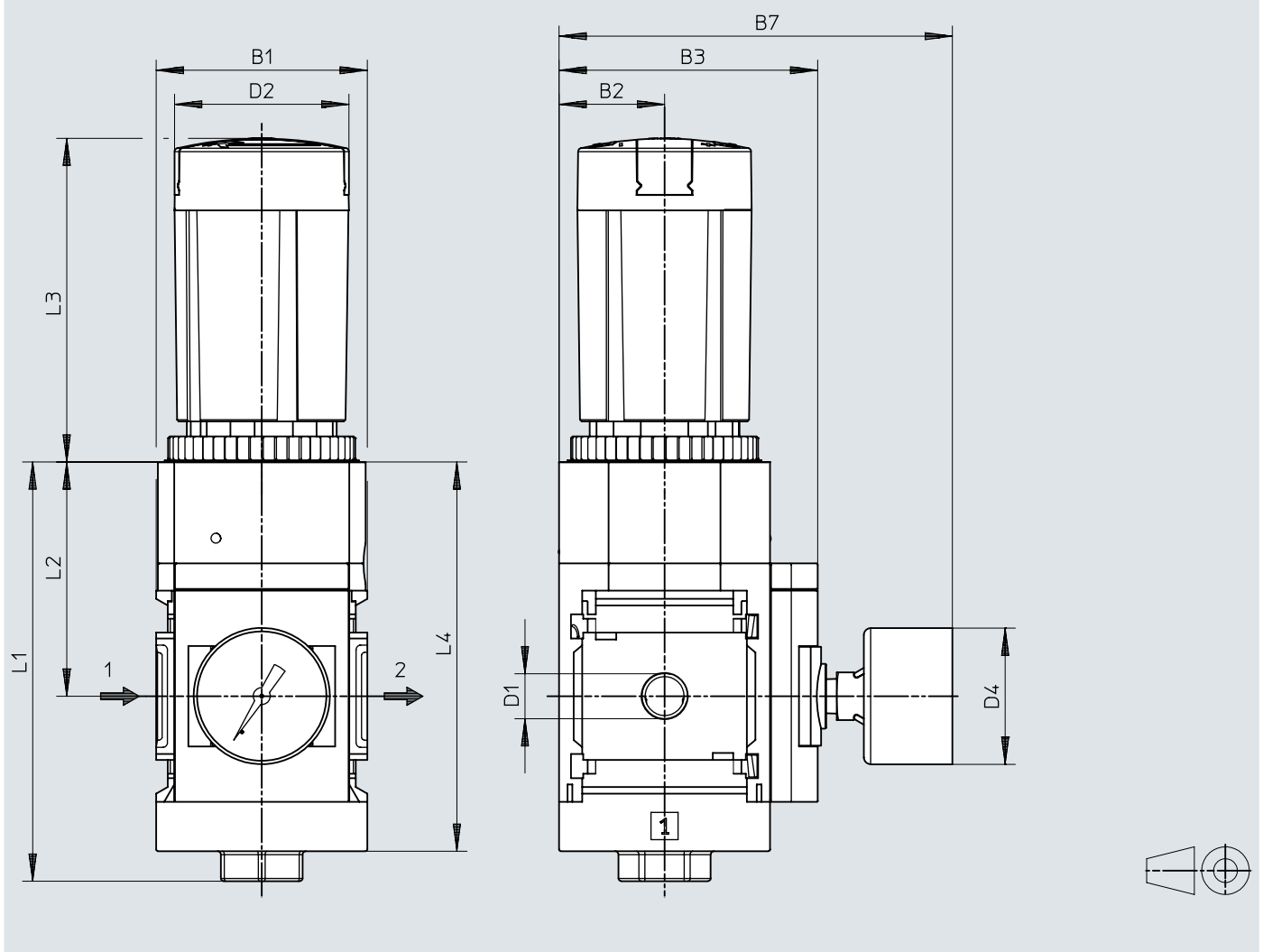
Normal flow rate q_n as a function of the outlet pressure p_2 ($p_1 = 147$ psi) - MS6N-LRP-1/2



Dimensions

Dimensions – Pressure regulation range, manually operated, adapter for EN pressure gauge 1/8, with precision pressure gauge

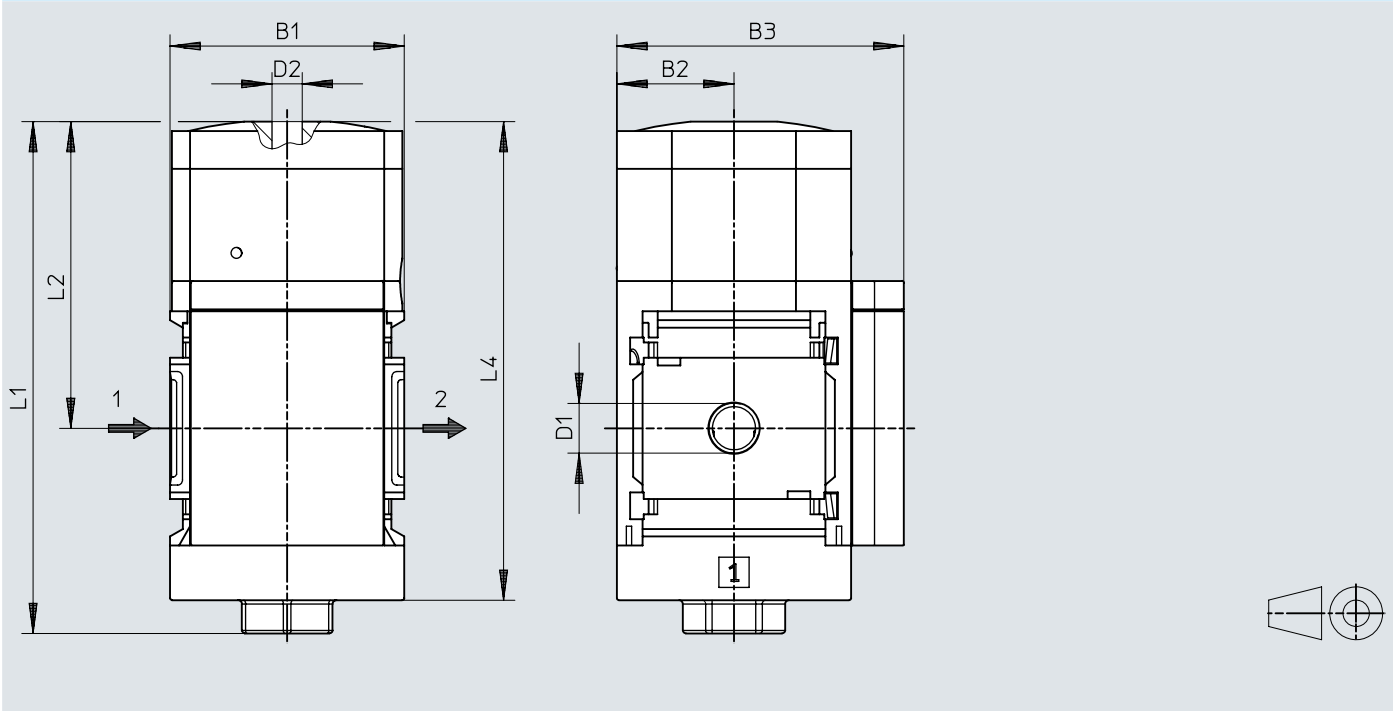
Download CAD data www.festo.com



	B1	B2	B3	B7	D1	D2 ø	D4 ø	L1	L2	L3	L4
	[inch]	[inch]	[inch]	[inch]		[inch]	[inch]	[inch]	[inch]	[inch]	[inch]
MS6N-LRP-1/4-D2/D4/D5/D7-A8M-AS	2,44	1,22	2,99	4,57	1/4 NPT	2,02	1,57	4,84	2,68	3,76	4,49
MS6N-LRP-3/8-D2/D4/D5/D7-A8M-AS					3/8 NPT						
MS6N-LRP-1/2-D2/D4/D5/D7-A8M-AS					1/2 NPT						

Dimensions

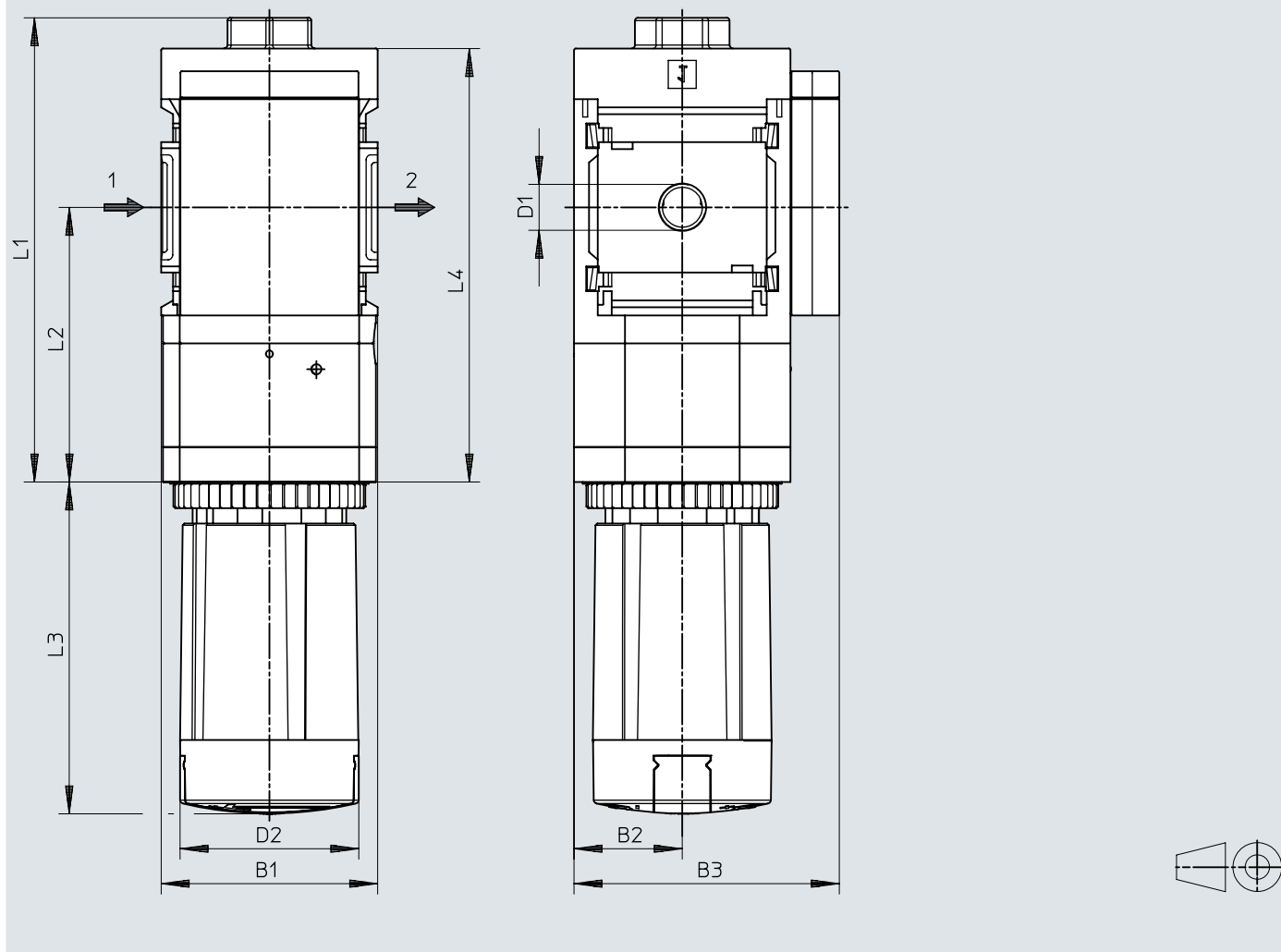
Dimensions – Pressure regulation range, pneumatically actuated, cover plate Download CAD data www.festo.com



	B1 [inch]	B2 [inch]	B3 [inch]	D1	D2	L1 [inch]	L2 [inch]	L4 [inch]
MS6N-LRP-1/4-PO-VS	2,44	1,22	2,99	1/4 NPT	1/8 NPT	5,35	3,19	5,00
MS6N-LRP-3/8-PO-VS				3/8 NPT				
MS6N-LRP-1/2-PO-VS				1/2 NPT				

Dimensions

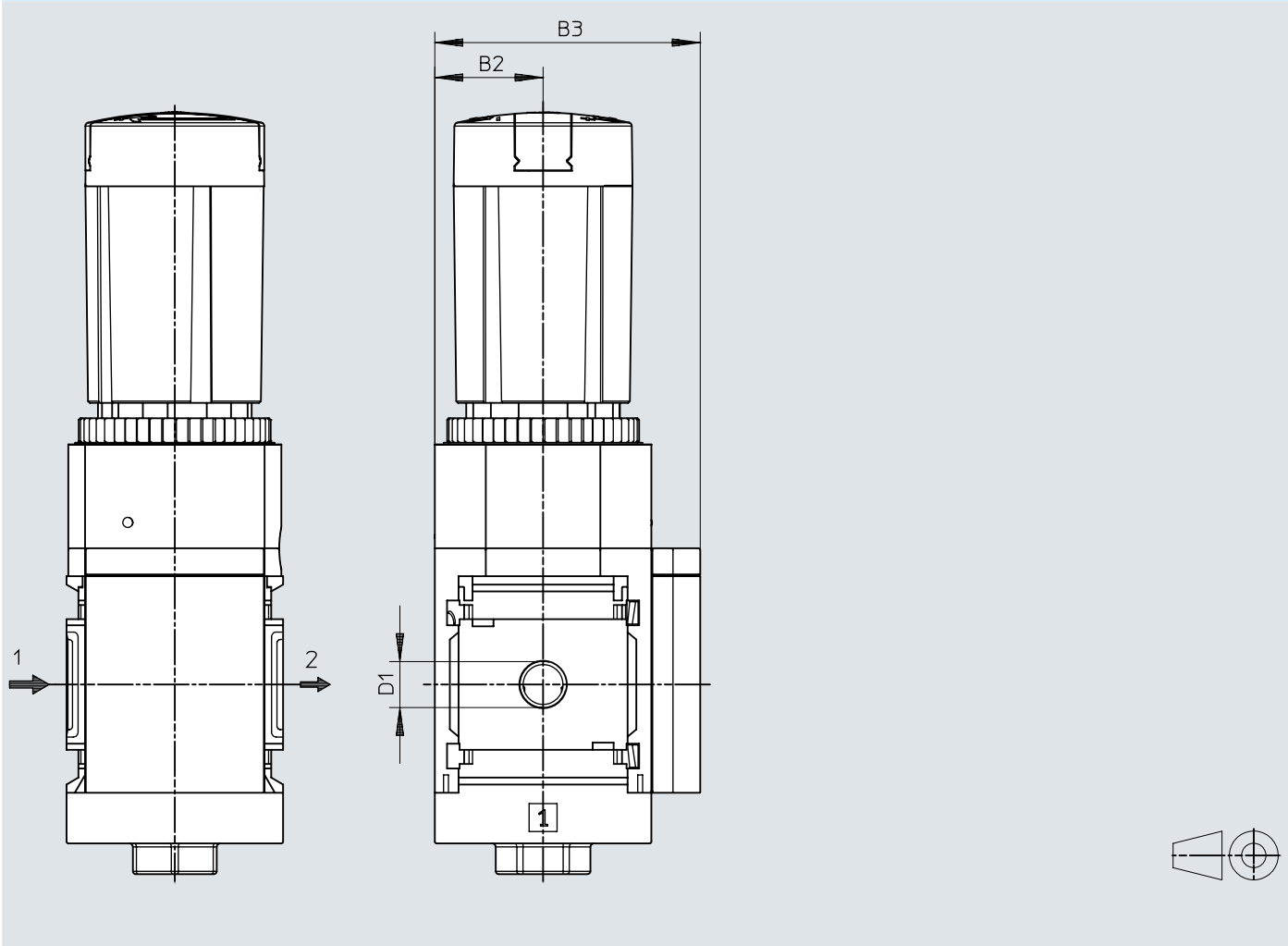
Dimensions – Alternative mounting position, rotary knob at the bottom

Download CAD data www.festo.com

	B1	B2	B3	D1	D2 Ø	L1	L2	L3	L4
	[inch]	[inch]	[inch]		[inch]	[inch]	[inch]	[inch]	[inch]
MS6N-LRP-1/4-...-KD	2,44	1,22	2,99	1/4 NPT	2,02	5,24	3,07	3,74	4,88
MS6N-LRP-3/8-...-KD				3/8 NPT					
MS6N-LRP-1/2-...-KD				1/2 NPT					

Dimensions

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

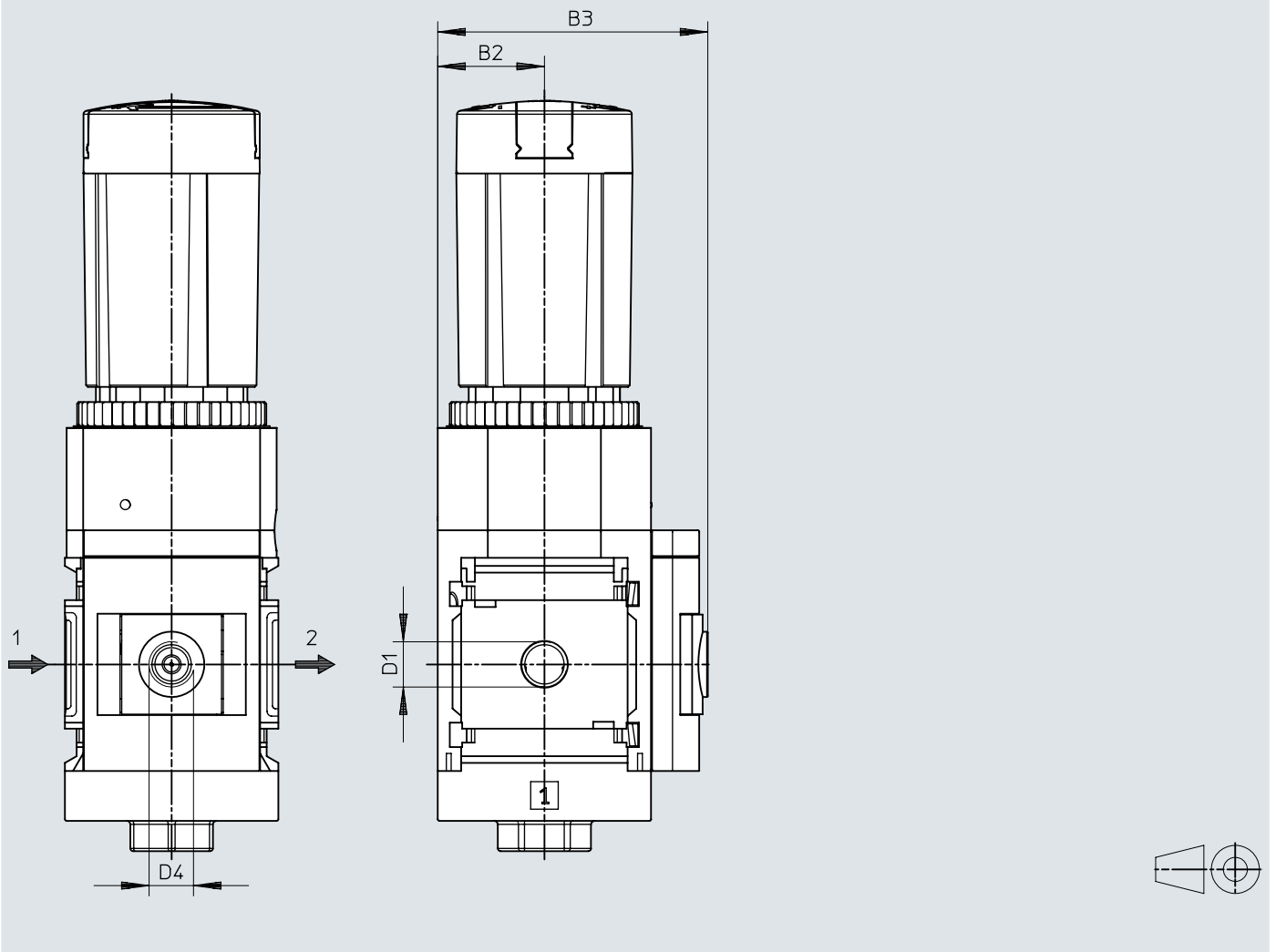


	B2 [inch]	B3 [inch]	D1
MS6N-LRP-1/4-...-VS	1,22	2,99	1/4 NPT
MS6N-LRP-3/8-...-VS			3/8 NPT
MS6N-LRP-1/2-...-VS			1/2 NPT

Dimensions

Dimensions – Pressure gauge alternatives, adapter for EN pressure gauge 1/8 and 1/4, without pressure gauge

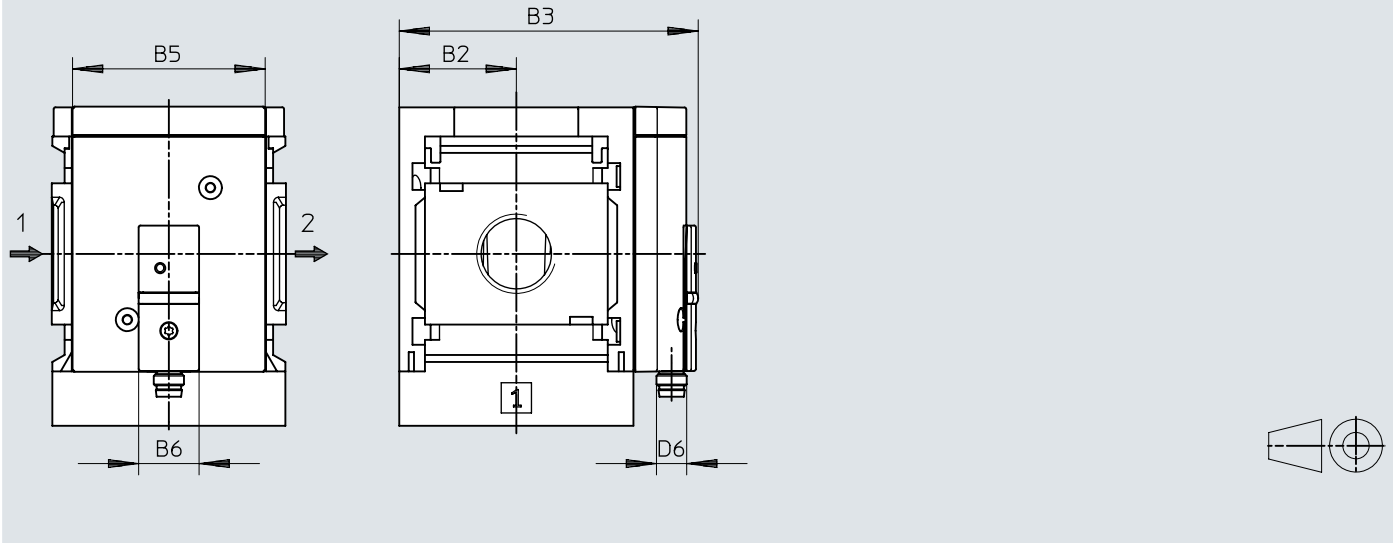
Download CAD data www.festo.com



	B2 [inch]	B3 [inch]	D1	D4
MS6N-LRP-1/4-...-A8	1,22	3,09	1/4 NPT	1/8 NPT
MS6N-LRP-3/8-...-A8			3/8 NPT	
MS6N-LRP-1/2-...-A8			1/2 NPT	
MS6N-LRP-1/4-...-A4			1/4 NPT	1/4 NPT
MS6N-LRP-3/8-...-A4			3/8 NPT	
MS6N-LRP-1/2-...-A4			1/2 NPT	

Dimensions

Dimensions – Pressure gauge alternatives [AD7 ... 10] pressure sensor without LCD display (only switching display) [Download CAD data](http://www.festo.com)

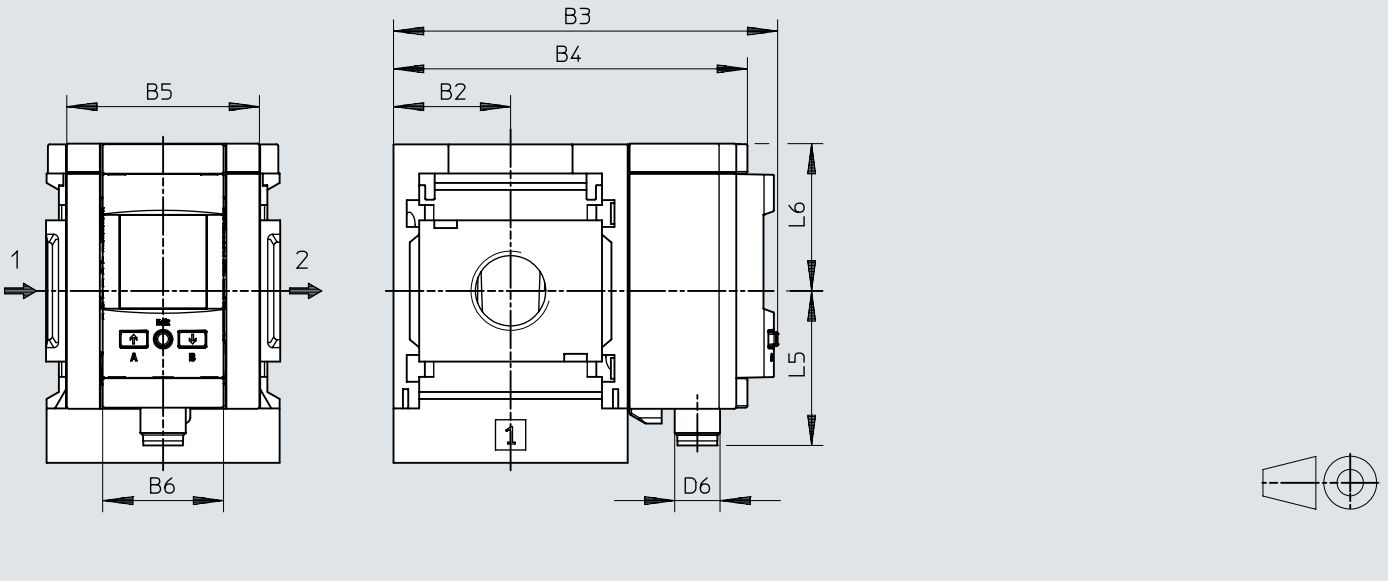


	B2 [inch]	B3 [inch]	B5 [inch]	B6 [inch]	D6
MS6N-LRP-...-AD7/AD8/AD9/AD10	1,22	3,11	2,01	0,63	M8x1

Dimensions

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

Download CAD data www.festo.com

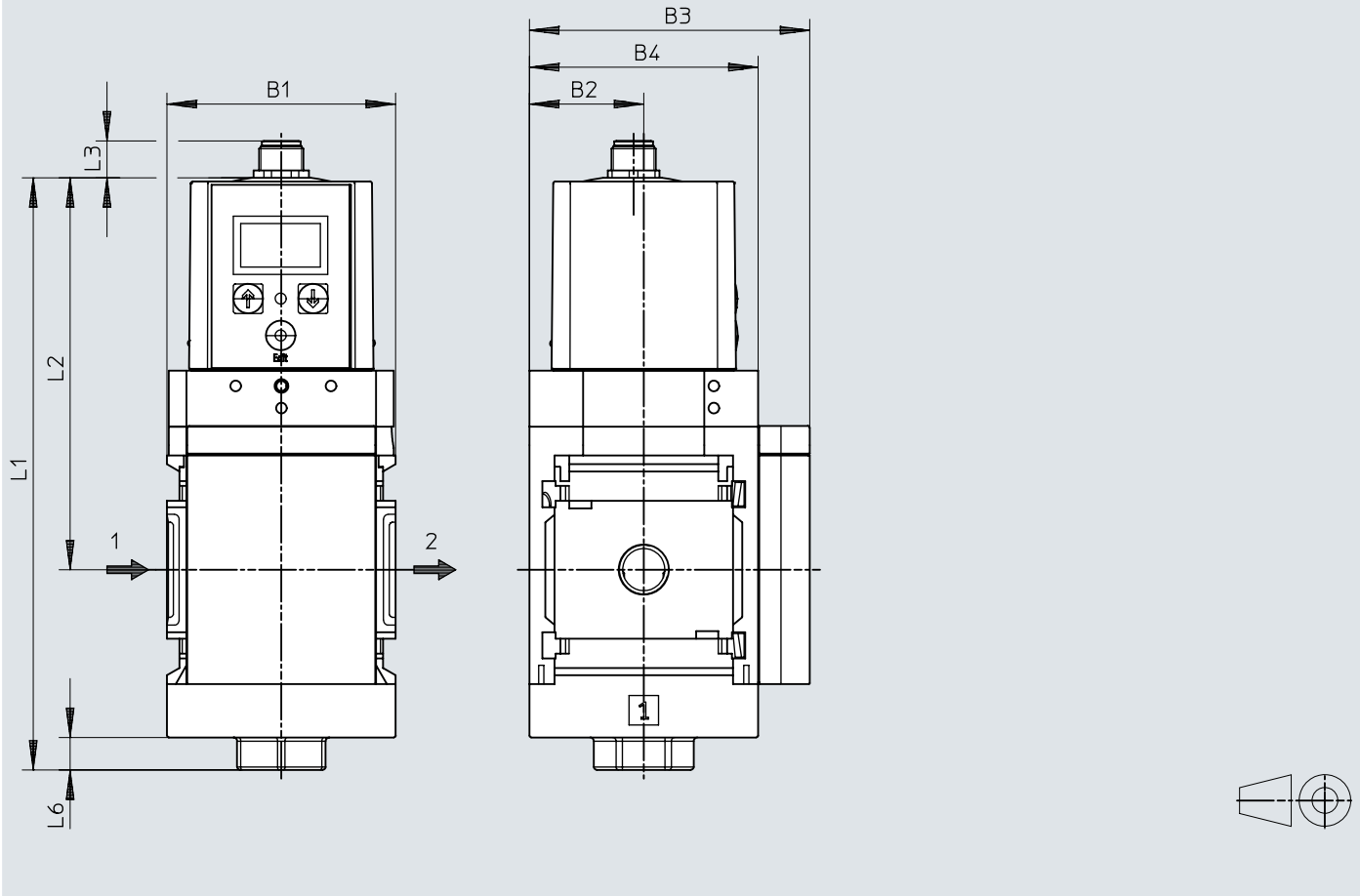


	B2 [inch]	B3 [inch]	B4 [inch]	B5 [inch]	B6 [inch]	D6	L5 [inch]	L6 [inch]
MS6N-LRP-...-AD11	1,22	4,01	3,69	2,01	1,26	M12x1	1,62	1,54
MS6N-LRP-...-AD12						M8x1	1,49	

Dimensions

Dimensions – Electrically operated VPPE pilot control, [PE10/PI10] Proportional pressure control valve with LED display

Download CAD data www.festo.com

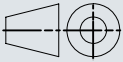
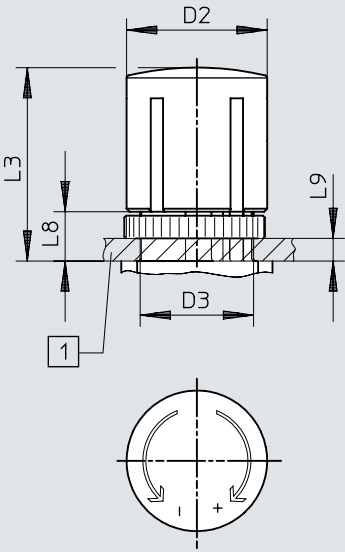


	B1 [inch]	B2 [inch]	B3 [inch]	B4 [inch]	L1 [inch]	L2 [inch]	L3 [inch]	L6 [inch]
MS6N-LRP-...-PE10/PI10	2,44	1,22	2,99	2,44	6,34	4,17	0,39	0,35

Dimensions

Dimensions – Rotary knob with latch

Download CAD data www.festo.com

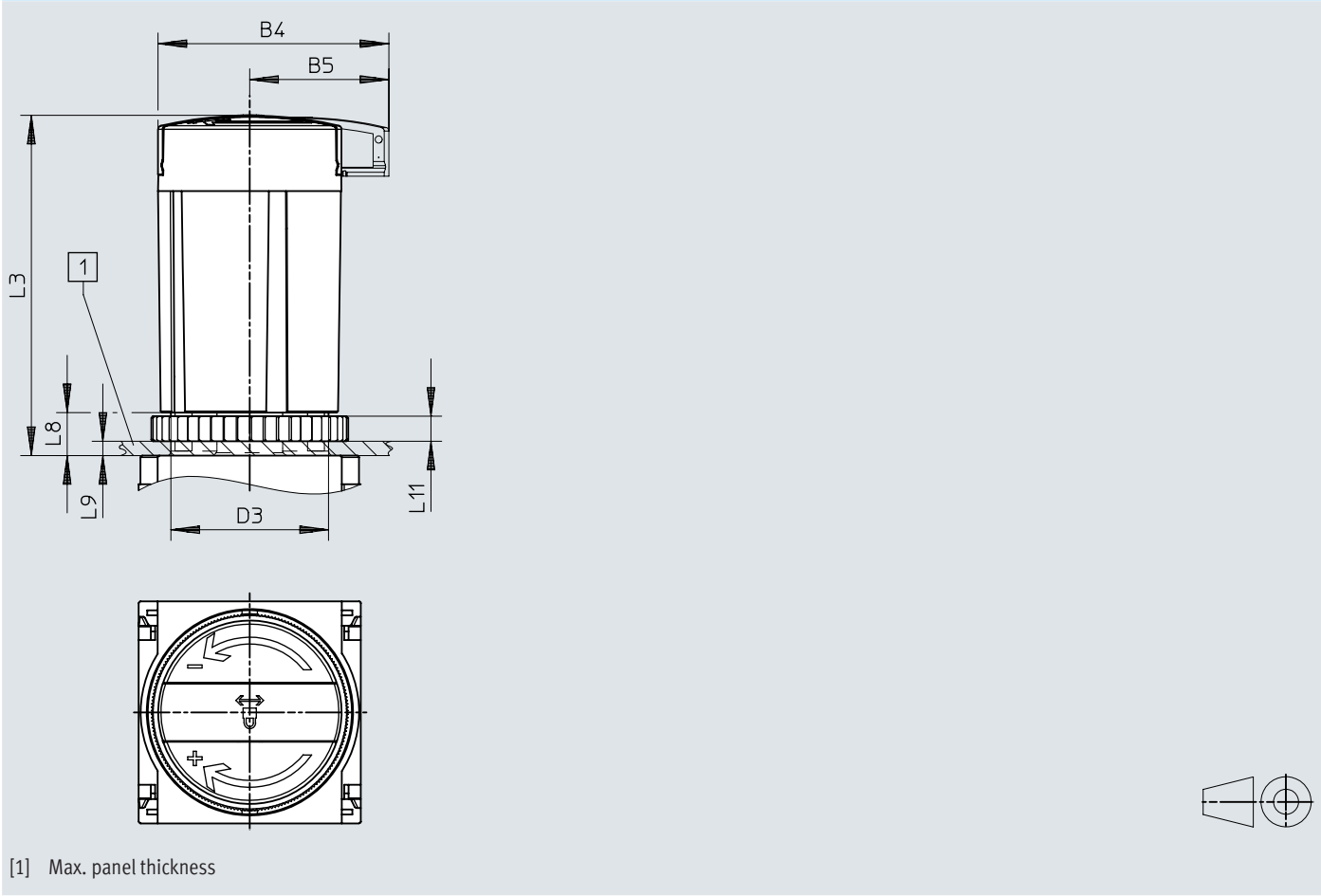


[1] Max. panel thickness

	D2 [inch]	D3	L3 [inch]	L8 [inch]	L9 [inch]
MS6N-LRP...	2,02	M44x1	3,39	0,83	0,55

Dimensions

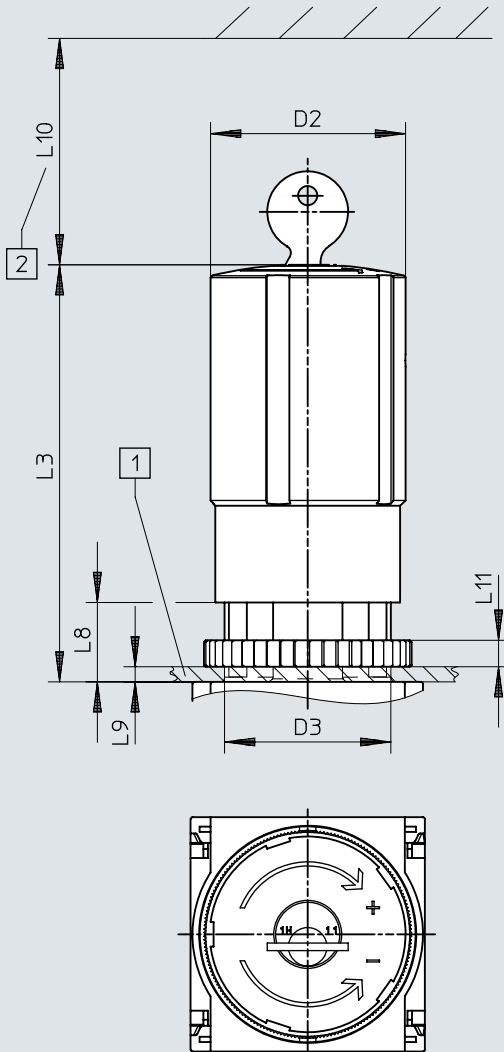
Dimensions – Rotary knob with latch, closable with accessories Download CAD data www.festo.com



	B4 [inch]	B5 [inch]	D2 [inch]	D3	L3 [inch]	L8 [inch]	L9 [inch]
MS6N-LRP-...-AS	2,54	1,53	2,02	M44x1	3,74	0,47	0,20

Dimensions

Dimensions – Rotary knob with integrated lock

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


- [1] Max. panel thickness
[2] Installation dimension

	D2 [inch]	D3	L3 [inch]	L8 [inch]	L9 [inch]	L10 [inch]
MS6N-LRP-...-E11	2,02	M44x1	4,33	0,83	0,55	2,36

Dimensions

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

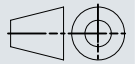
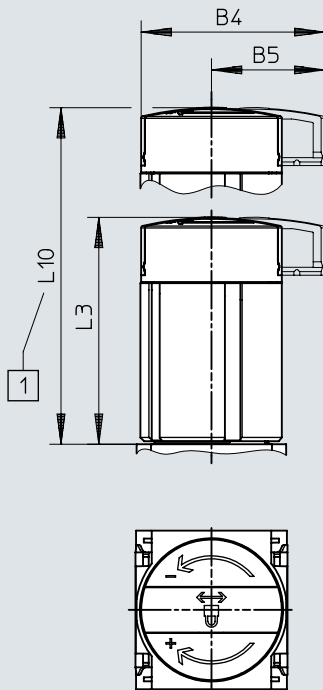


	D2 [inch]	L3 [inch]	L10 [inch]
MS6N-LRP-...-LD	2,02	3,39	5,47

Dimensions

Dimensions – Rotary knob long with latch, closable with accessories

Download CAD data www.festo.com



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

	B4 [inch]	B5 [inch]	D2 [inch]	L3 [inch]	L10 [inch]
MS6N-LRP-...-LD-AS	2,54	1,53	2,02	3,76	5,85

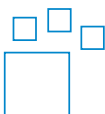
Ordering data

Ordering data



Pneumatic connection 1	Pressure regulation range	Flow direction	Product weight	Part no.	Type
1/4 NPT	0.05 ... 0.7 bar	From left to right	850 g	538029	MS6N-LRP-1/4-D2-A8
		From right to left		538030	MS6N-LRP-1/4-D2-A8-Z
	0.05 ... 2.5 bar	From left to right		538031	MS6N-LRP-1/4-D4-A8
		From right to left		538032	MS6N-LRP-1/4-D4-A8-Z
	0.1 ... 4 bar	From left to right		538033	MS6N-LRP-1/4-D5-A8
	0.1 ... 12 bar	From left to right		538035	MS6N-LRP-1/4-D7-A8
		From right to left		538036	MS6N-LRP-1/4-D7-A8-Z
	3/8 NPT	0.05 ... 0.7 bar		From left to right	538037
From right to left			538038	MS6N-LRP-3/8-D2-A8-Z	
0.05 ... 2.5 bar		From left to right	538039	MS6N-LRP-3/8-D4-A8	
0.1 ... 12 bar			538043	MS6N-LRP-3/8-D7-A8	
1/2 NPT	0.05 ... 0.7 bar		538045	MS6N-LRP-1/2-D2-A8	
		From right to left	538046	MS6N-LRP-1/2-D2-A8-Z	
	0.05 ... 2.5 bar	From left to right	538047	MS6N-LRP-1/2-D4-A8	
	0.1 ... 4 bar		538049	MS6N-LRP-1/2-D5-A8	
		From right to left	538050	MS6N-LRP-1/2-D5-A8-Z	
	0.1 ... 12 bar	From left to right	538051	MS6N-LRP-1/2-D7-A8	

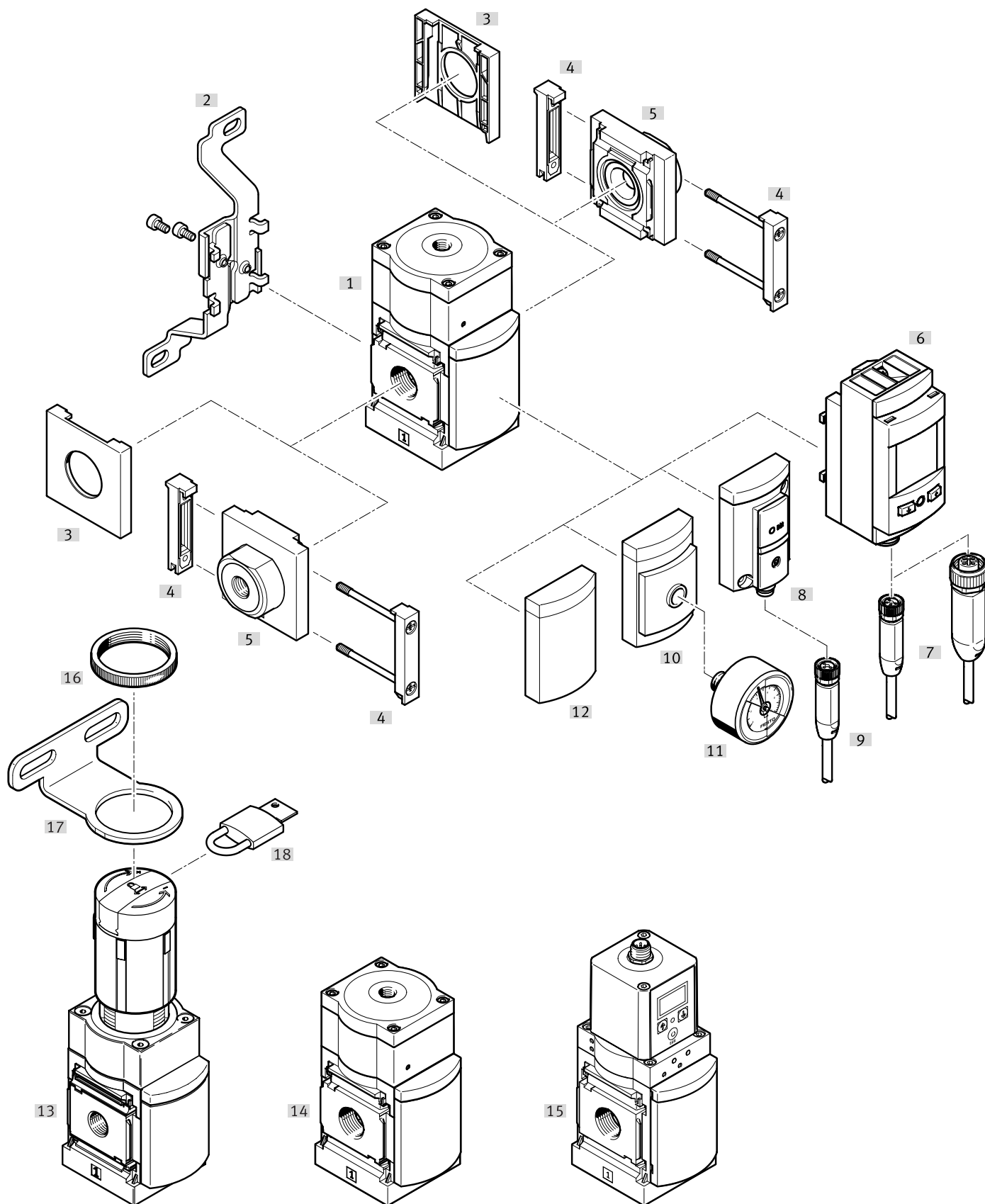
Ordering information – modular product system



Type code	Part no.	Type
MS6-LRP	538053	MS6N-LRP

Peripherals overview

Peripherals overview



Peripherals overview

Accessories		→ Page/Internet
Type/order code	Description	
[1] Precision pressure regulator MS6N-LRP		ms6n-lrp
[2] Mounting bracket MS6-WB	Order code [WR]; for single device	23
[3] Cover cap MS6-END	For devices without sub-base	25
[4] Module connector MS6-MV1	For device combinations and individual devices with sub-base	23
[5] Sub-base SET MS6-AQ...	Order code [AQ...]; for device combinations	25
[6] Pressure sensor AD11/AD12	Order code [AD11], [AD12]; pressure sensor SPAU with LCD display	spau
[7] Connecting cable NEBA-M8...-LE4/NEBA-M12...-LE4		24
[8] Pressure sensor AD7 ... AD10	Order code [AD7], [AD8], [AD9], [AD10]; pressure sensor SDE5 with switching indicator	sde5
[9] Connecting cable NEBU-M8...-LE3		24
[10] Adapter for EN pressure gauge	Order code [A8], [A8M], [A4]	ms6n-lrp
[11] Pressure gauge MA		24
[12] Cover plate VS	Order code [VS]	ms6n-lrp
[13] Precision pressure regulator MS6N-LRP (manually operated)	Order code [D2], [D4], [D5], [D7]	ms6n-lrp
[14] Precision pressure regulator MS6N-LRP (pneumatically operated)	Order code [PO]	ms6n-lrp
[15] Precision pressure regulator MS6N-LRP (electrically operated)	Order code [PE10], [PI10]	ms6n-lrp
[16] Knurled nut MS-LR	For single device (included in the scope of delivery)	ms6n-lrp
[17] Mounting bracket MS6-WR	Order code [WR]; for single device	ms6-wr
[18] Padlock LRVS-D		25
[19] Mounting bracket MS6-WP/WPB/WPE/WPM	Not shown	23

Accessories

Module connector MS6-MV1



Size	Module connector material	LABS (PWIS) conformity	Product weight	Part no.	Type
6	POM, high-alloy stainless steel	VDMA24364-B1/B2-L	33 g	8119204	MS6-MV1

Mounting bracket MS6-WP...



Size	Bracket material	LABS (PWIS) conformity	Product weight	Part no.	Type
6	Die-cast aluminum	VDMA24364-B1/B2-L		1025936	MS6-WPE
			76 g	532195	MS6-WP
			115 g	526074	MS6-WPB
			144 g	526073	MS6-WPM-D
			154 g	532186	MS6-WPM-2D

Mounting bracket MS6-WB



Size	Bracket material	LABS (PWIS) conformity	Product weight	Part no.	Type
6	Steel	VDMA24364-B1/B2-L	121 g	532196	MS6-WB

Mounting bracket MS6-WR



Size	Bracket material	LABS (PWIS) conformity	Product weight	Part no.	Type
6	Steel	VDMA24364-B1/B2-L	90 g	526075	MS6-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

Accessories

Pressure sensor SPAU-...-T



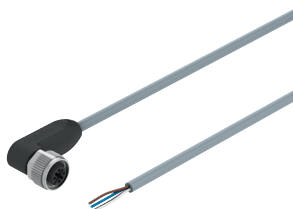
Pneumatic connection	Electrical connection 1, connection technology	LABS (PWIS) conformity	Product weight	Part no.	Type
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Connecting cables NEBA, straight



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
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



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

Precision pressure gauge MAP



Conforms to standard	Pneumatic connection	LABS (PWIS) conformity	Product weight	Part no.	Type
EN 837-1	R1/8	VDMA24364-B1/B2-L	60 g	162842	MAP-40-4-1/8-EN
				161128	MAP-40-16-1/8-EN
				161126	MAP-40-1-1/8-EN
				161127	MAP-40-6-1/8-EN

Accessories

Cover cap MS6-END



Size	Housing material	LABS (PWIS) conformity	Part no.	Type
6	PA-reinforced	VDMA24364-B1/B2-L	538780	MS6-END

Mounting plate MS6-AEND



Size	Housing material	LABS (PWIS) conformity	Product weight	Part no.	Type
6	PA-reinforced	VDMA24364-B1/B2-L	11.1 g	535408	MS6-AEND1

Sub-base-SET MS6-A...



Size	Pneumatic connection 1	Material of sub-base	Product weight	Part no.	Type
6	1/4 NPT	Die-cast aluminum	300 g	526076	MS6N-AQN
	3/8 NPT			526077	MS6N-AQP
	1/2 NPT			526078	MS6N-AQR
	3/4 NPT			526079	MS6N-AQS

Padlock LRVS-D



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