

Precision pressure regulator MS6N-LRP

FESTO



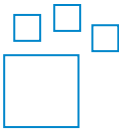
Characteristics

At a glance

- Grid dimension: 62 mm
- Good control characteristics with minimal pressure hysteresis and primary pressure compensation
- High secondary exhausting 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 that require a pressure 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 supplied by an external pilot controller (preferably with a precision pressure regulator).

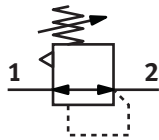
Pneumatic connection

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

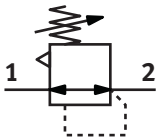
Pressure regulation range

There are different pressure regulation ranges:

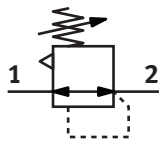
[D2] 0.05 ... 0.7 bar



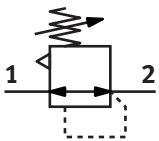
[D4] 0.05 ... 2.5 bar



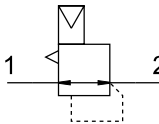
[D5] 0.1 ... 4 bar



[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

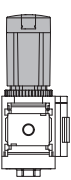
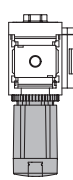
Rotary knob alternative

Optionally with longer rotary knob.

Characteristics

Alternative mounting position

Optionally with rotary knob positioned below the device.

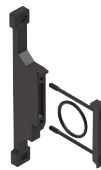
[] None	[KD] Rotary knob underneath
	

Type of mounting

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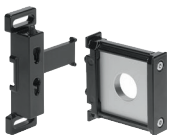


- For wall mounting an individual device



- For connecting the modules for wall mounting
- In combination with connecting plate MS6-AQ... for mounting an individual device on a wall
- In combination with mounting plate MS6-AEND for wall mounting of a single device
- Same wall distance for combinations of series MS4 and MS6

[WPM] Mounting bracket for hooking in service unit components	[WB] Mounting centrally at rear (wall mounting top and bottom), connecting plates not required
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- For connecting the modules for wall mounting
- In combination with connecting plate MS6-AQ... for mounting an individual device on a wall
- In combination with mounting plate MS6-AEND for wall mounting of a single device
- For installing modules with the regulator knob pointing downwards

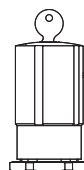
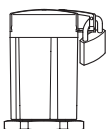


- For wall mounting an individual device

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
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Flow direction

Available with flow in the opposite direction.

Type code

001	Series	
MS	MS series	
002	Size	
6	Grid dimension 62 mm	
003	Thread type	
N	NPT thread	
004	Function	
LRP	Precision pressure regulator	
005	Pneumatic connection, inch	
1/4	Female thread NPT 1/4	
3/8	Female thread NPT 3/8	
1/2	Female 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 regulation range	
D2	0.05 ... 0.7 bar	
D4	0.05 ... 2.5 bar	
D5	0.3 ... 4 bar	
D7	0.5 ... 12 bar	
PO	Max. 16 bar, pneumatically actuated (pressure range determined by pilot regulator)	

007	Pressure gauge alternatives	
A4	Adapter for EN pressure gauge 1/4, without pressure gauge	
A8	Adapter 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 plug, 4-pin, IO-Link®, PNP, NPN, 0...10 V, 1...5 V, 4...20 mA	
AD12	Pressure sensor with LCD display, M8 plug, 4-pin, IO-Link®, PNP, NPN, 0...10 V, 1...5 V, 4...20 mA	
VS	Cover plate	
008	Rotary knob alternative	
	None	
LD	Long rotary knob	
009	Alternative mounting position	
	None	
KD	Rotary knob underneath	
010	Lockability	
	None	
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), 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	
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, port 1	1/4 NPT, 3/8 NPT, 1/2 NPT			
Pneumatic connection, port 2	1/4 NPT, 3/8 NPT, 1/2 NPT			
Pneumatic connection, port 3	G1/4			
Size	6			
Design	Piloted precision diaphragm control valve			
Controller function	Output pressure constant, With secondary venting			
Type of mounting	Either: Front panel mounting In-line installation With accessories			
Mounting position	optional			
Actuator lock	Rotary knob with detent			
Max. pressure hysteresis	0.02 bar			
Pressure gauge (ANALOG) or Pressure display (DIGITAL)	Prepared 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, port 1	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	1/4 NPT	3/8 NPT	1/2 NPT
Standard nominal flow rate (standardised to DIN 1343)	≥1400 l/min	≥1700 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 exhaust	≥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 to ISO 8573-1:2010 [7:4:4], Inert gas
Note on operating and pilot medium	Ester oil < 0.1mg/m ³ , according to ISO 8573-1:2010 [:-:2], Lubricated operation not possible
Ambient temperature	-10 ... 60°C
Media temperature	-10 ... 60°C
Storage temperature	-10 ... 60°C
Corrosion resistance class CRC ¹⁾	2 - Moderate corrosion stress

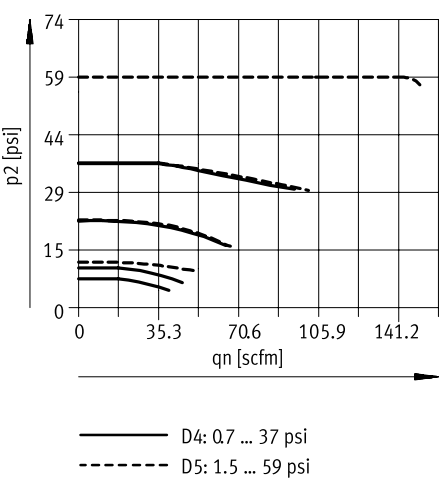
1) Corrosion resistance class CRC 2 to Festo standard FN 940070. Moderate corrosion stress. Indoor application where condensation can occur. External visible parts with primarily decorative surface requirements that are in direct contact with the surrounding industrial environment.

Materials

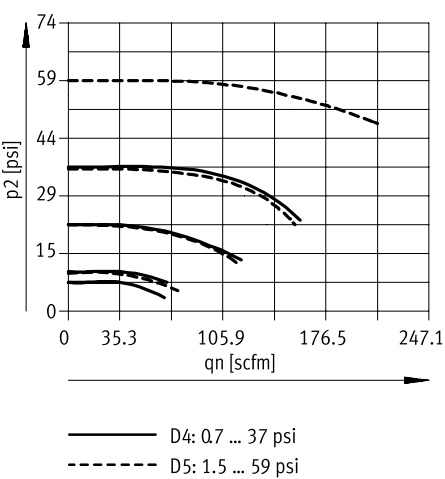
Material housing	Aluminium
Material seals	NBR
Note on materials	RoHS-compliant
LABS (PWIS) conformity	VDMA24364-B1/B2-L

Datasheet

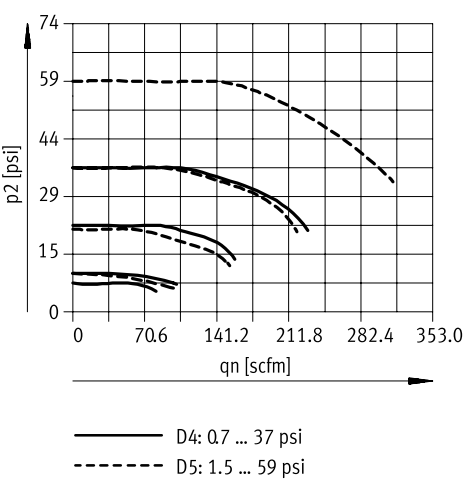
Standard flow rate q_n as a function of output pressure p_2 ($p_1 = 147$ psi) – MS6N-LRP-1/4



Standard flow rate q_n as a function of output pressure p_2 ($p_1 = 147$ psi) – MS6N-LRP-3/8



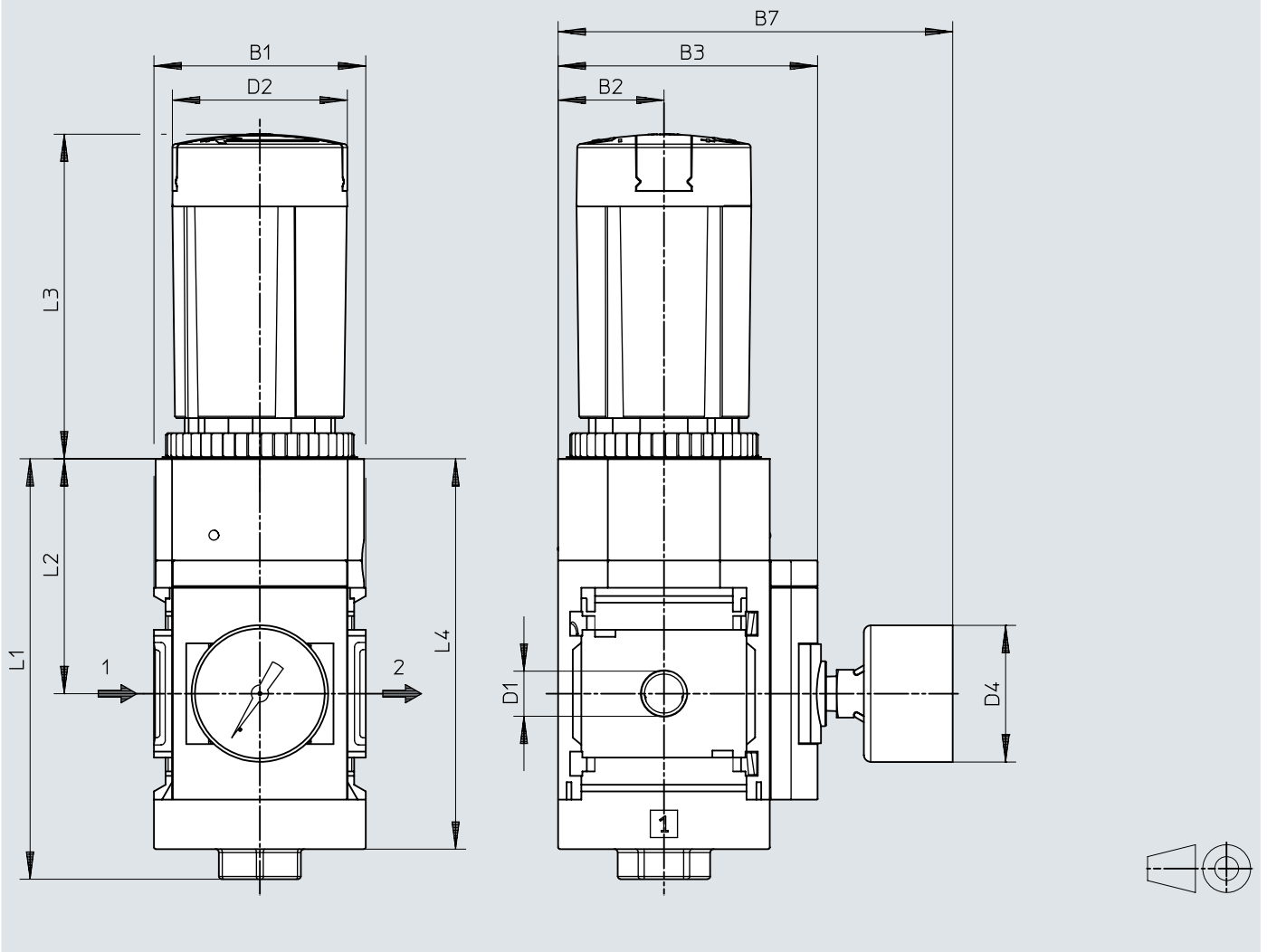
Standard flow rate q_n as a function of output pressure p_2 ($p_1 = 147$ psi) – MS6N-LRP-1/2



Dimensions

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

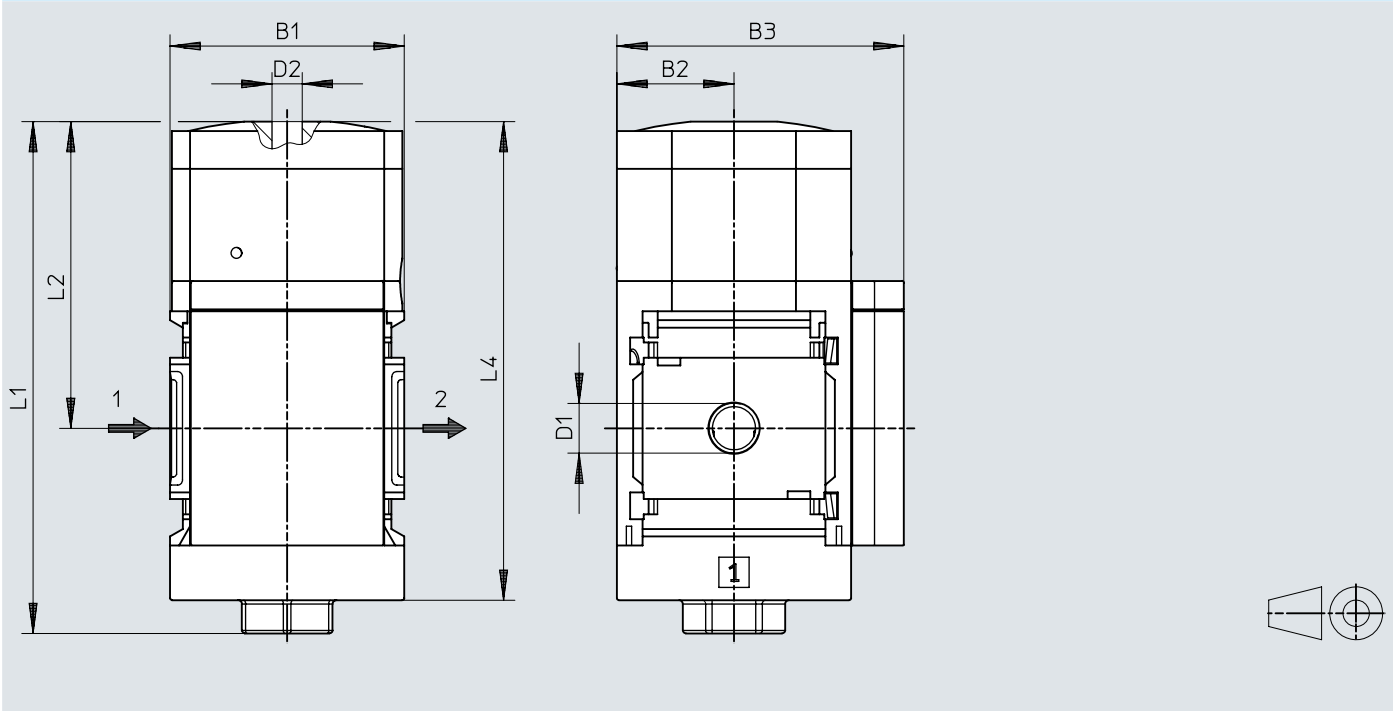
Download CAD data www.festo.com



	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

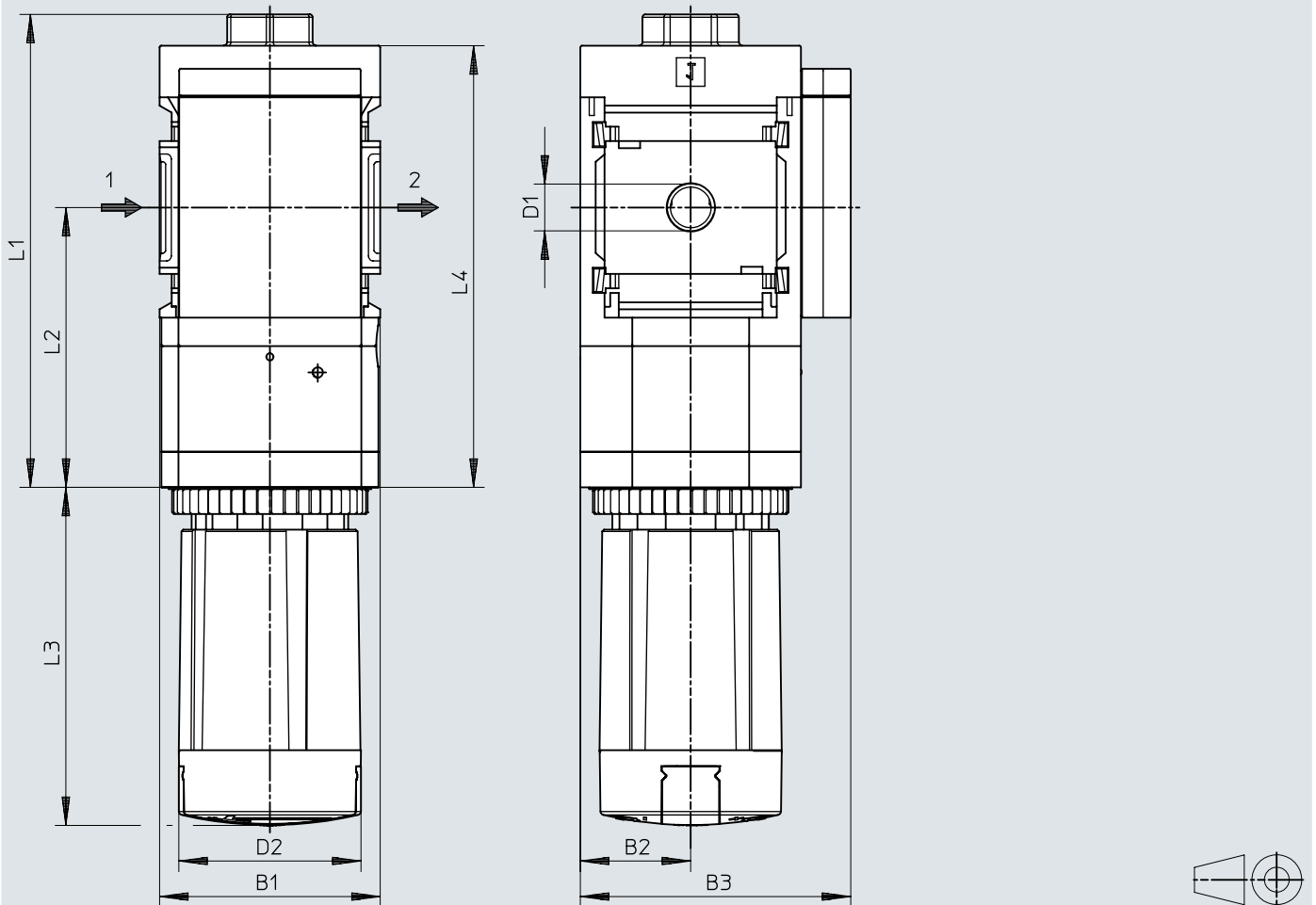
Dimensions – Pressure regulation range, pneumatically actuated, cover plate Download CAD data www.festo.com



	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

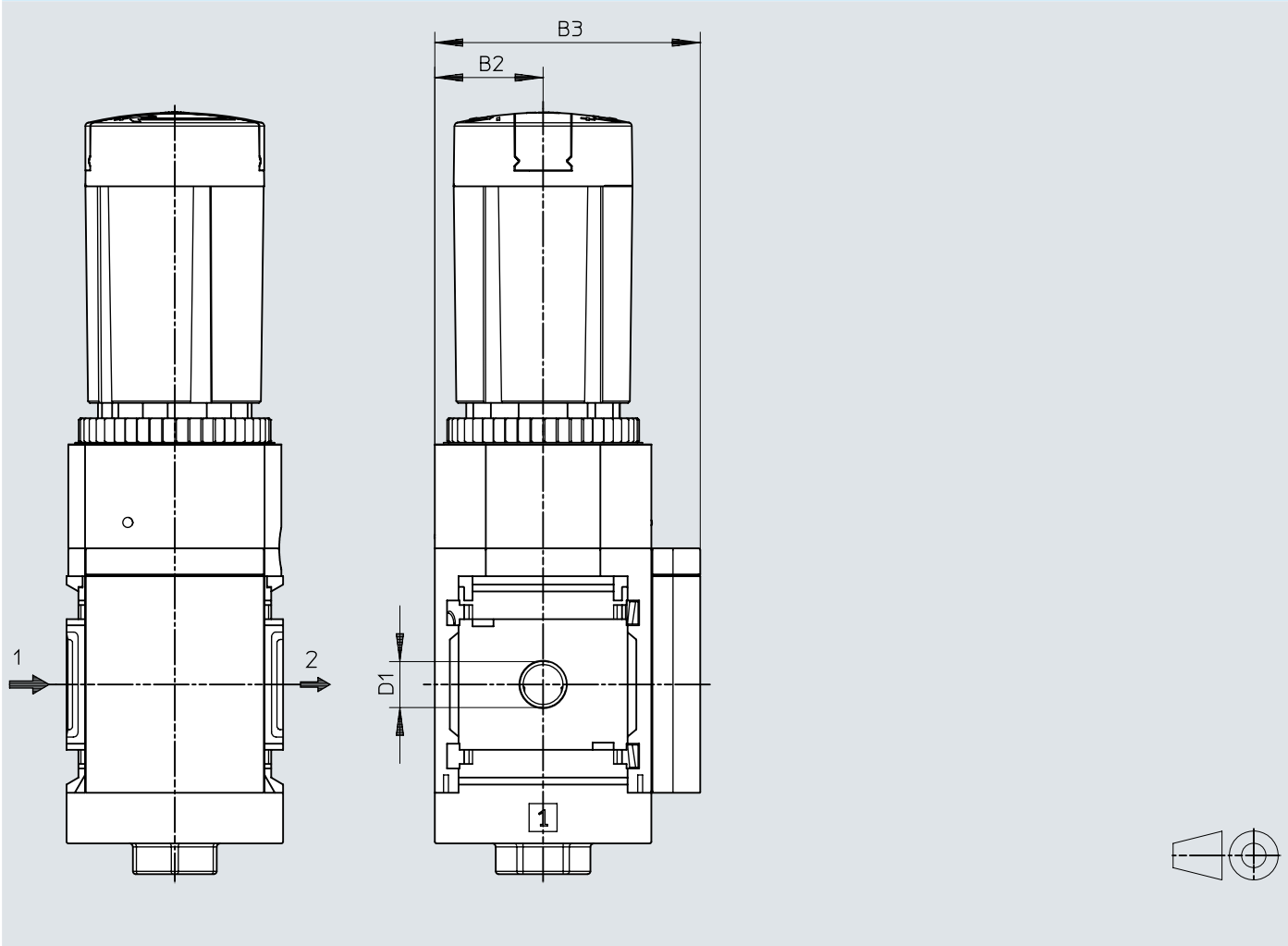
Dimensions – Alternative mounting position, rotary knob underneath

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

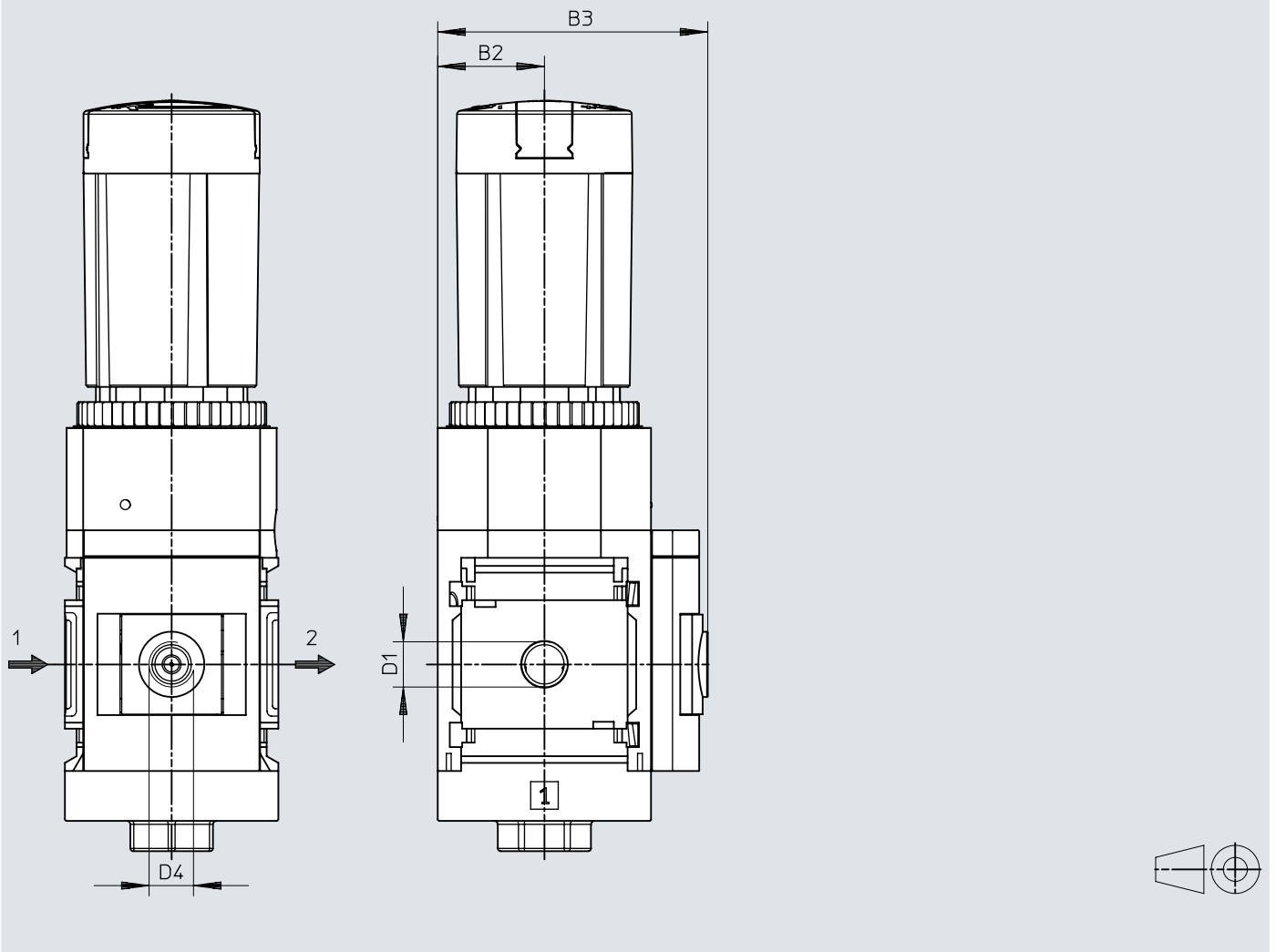


	B2 [inch]	B3 [inch]	D1
MS6N-LRP-1/4-...-VS	1,22	2,99	1/4 NPT
MS6N-LRP-3/8-...-VS			3/8 NPT
MS6N-LRP-1/2-...-VS			1/2 NPT

Dimensions

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

Download CAD data www.festo.com

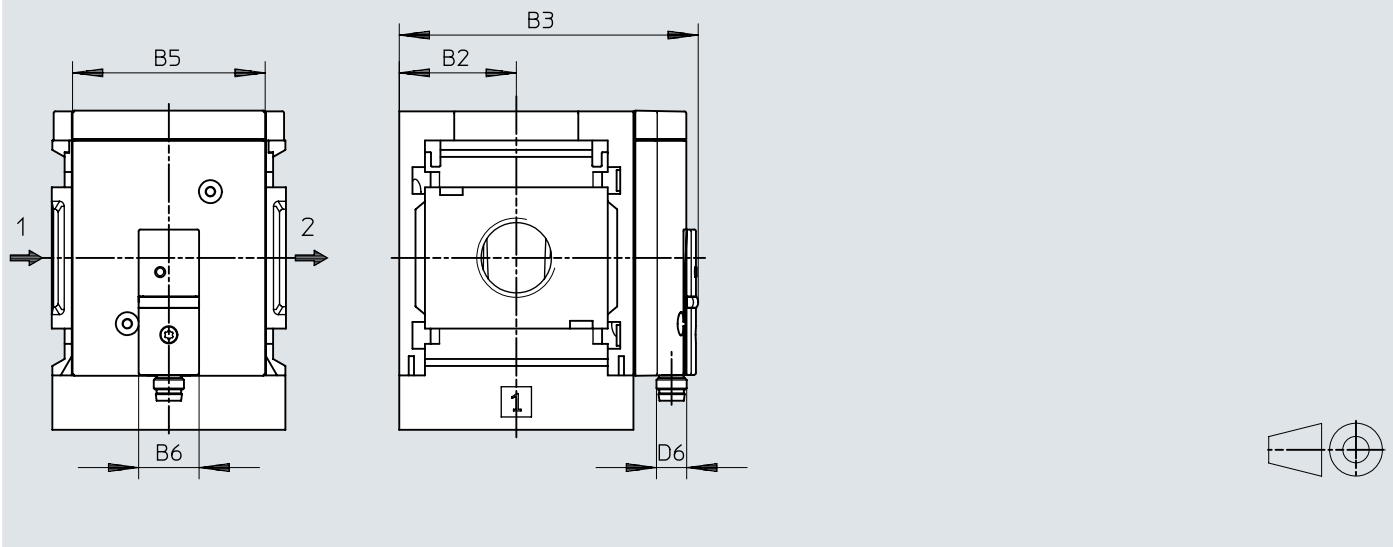


	B2 [inch]	B3 [inch]	D1	D4
MS6N-LRP-1/4-...-A8	1,22	3,09	1/4 NPT	1/8 NPT
MS6N-LRP-3/8-...-A8			3/8 NPT	
MS6N-LRP-1/2-...-A8			1/2 NPT	
MS6N-LRP-1/4-...-A4			1/4 NPT	1/4 NPT
MS6N-LRP-3/8-...-A4			3/8 NPT	
MS6N-LRP-1/2-...-A4			1/2 NPT	

Dimensions

Dimensions – Pressure gauge alternatives, [AD7 ... 10] pressure sensor without LCD display (switching display only)

Download CAD data www.festo.com

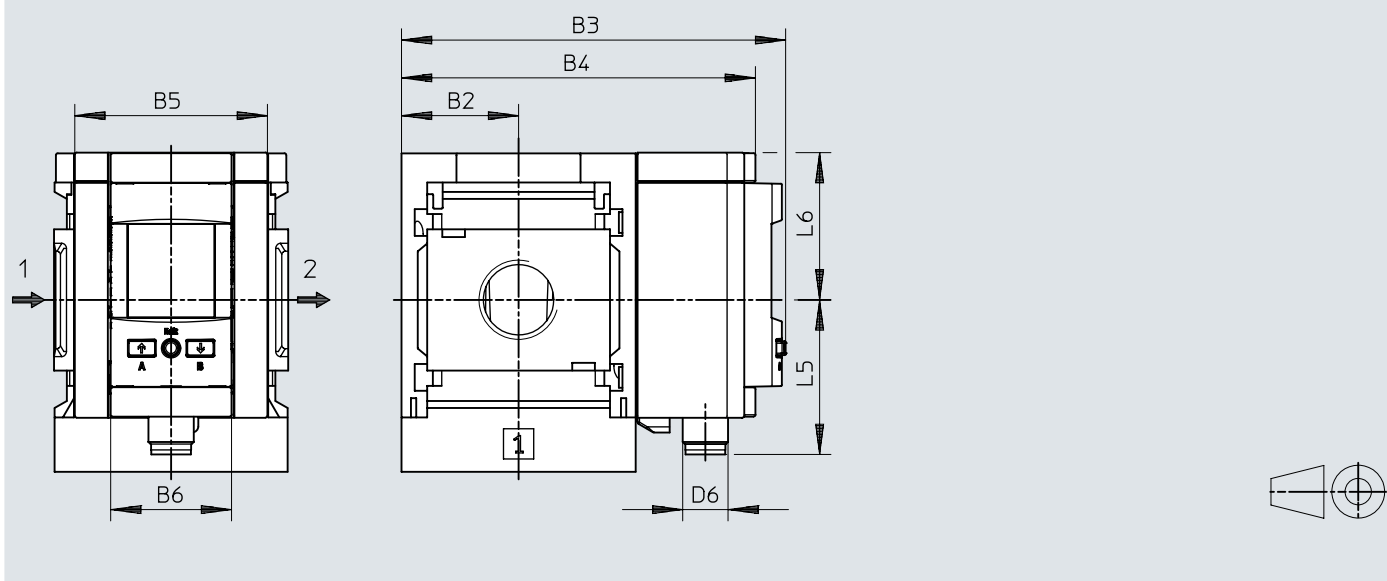


	B2 [inch]	B3 [inch]	B5 [inch]	B6 [inch]	D6
MS6N-LRP-...-AD7/AD8/AD9/AD10	1,22	3,11	2,01	0,63	M8x1

Dimensions

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

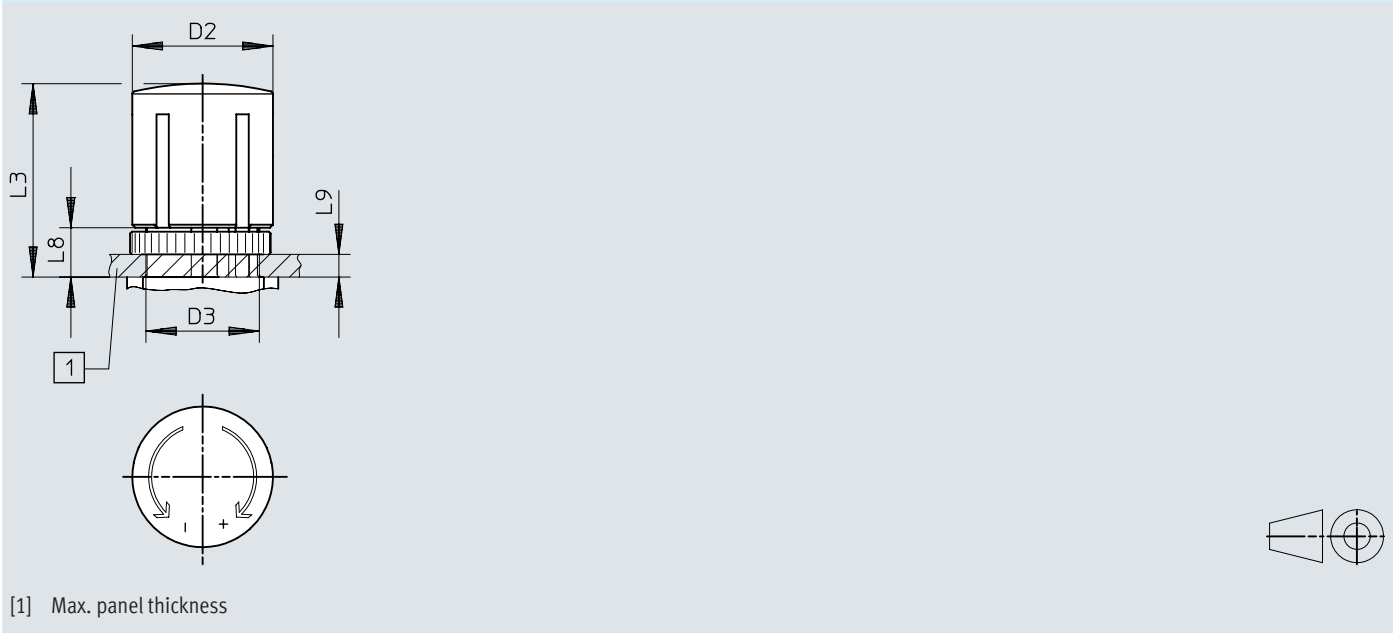
Download CAD data www.festo.com



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

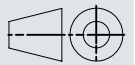
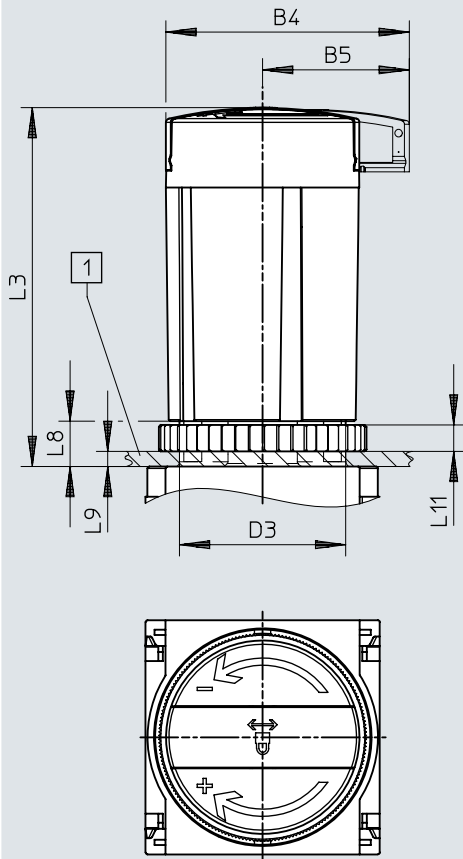


	D2 [inch]	D3	L3 [inch]	L8 [inch]	L9 [inch]
MS6N-LRP...	2,02	M44x1	3,39	0,83	0,55

Dimensions

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

Download CAD data www.festo.com

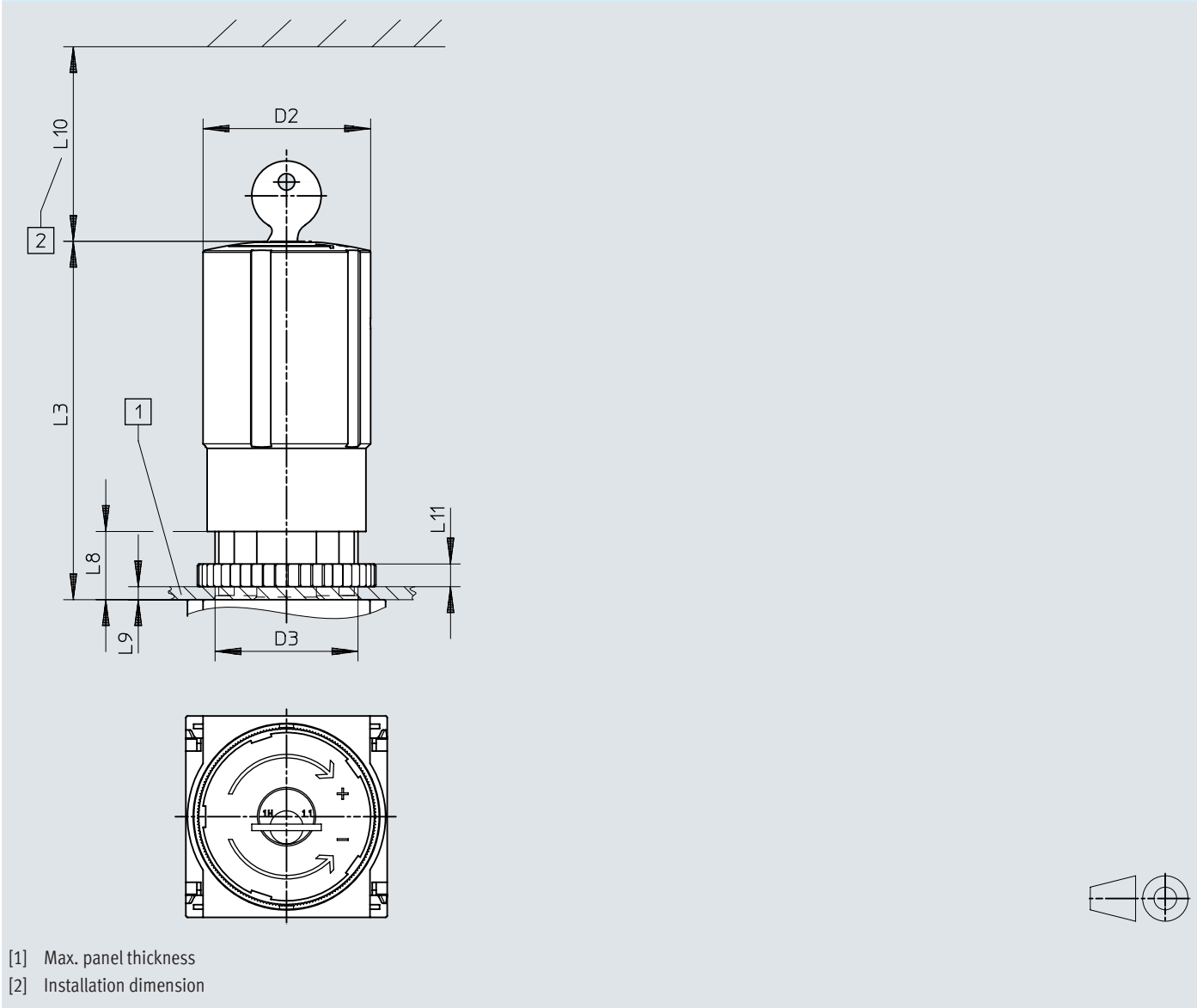


[1] Max. panel thickness

	B4 [inch]	B5 [inch]	D2 [inch]	D3	L3 [inch]	L8 [inch]	L9 [inch]
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

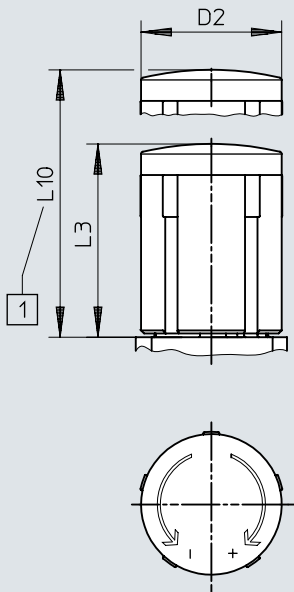


	D2 [inch]	D3	L3 [inch]	L8 [inch]	L9 [inch]	L10 [inch]
MS6N-LRP-...-E11	2,02	M44x1	4,33	0,83	0,55	2,36

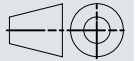
Dimensions

Dimensions – Rotary knob, long, with latch

Download CAD data www.festo.com



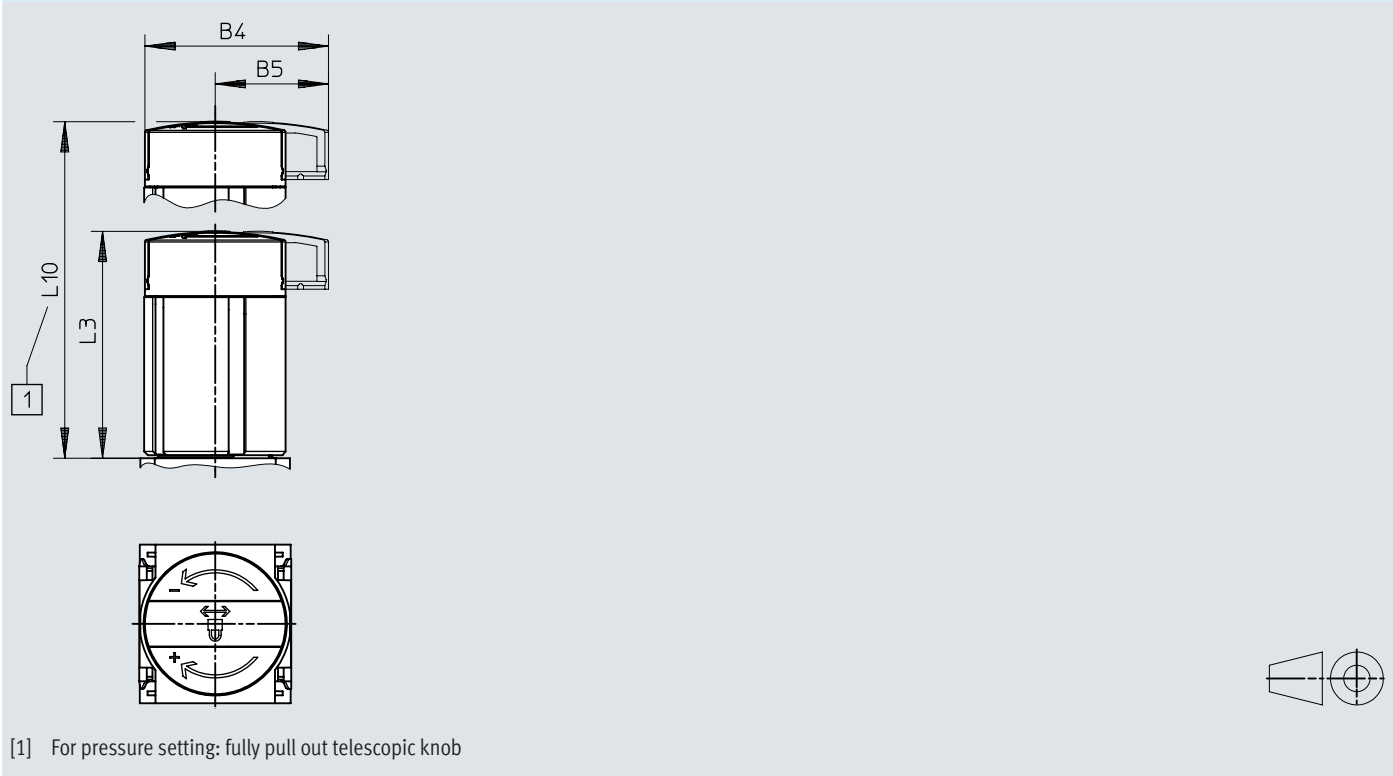
[1] For pressure setting: fully pull out telescopic knob



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

Dimensions

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

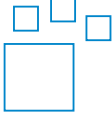


	B4 [inch]	B5 [inch]	D2 [inch]	L3 [inch]	L10 [inch]
MS6N-LRP-...-LD-AS	2,54	1,53	2,02	3,76	5,85

Ordering data

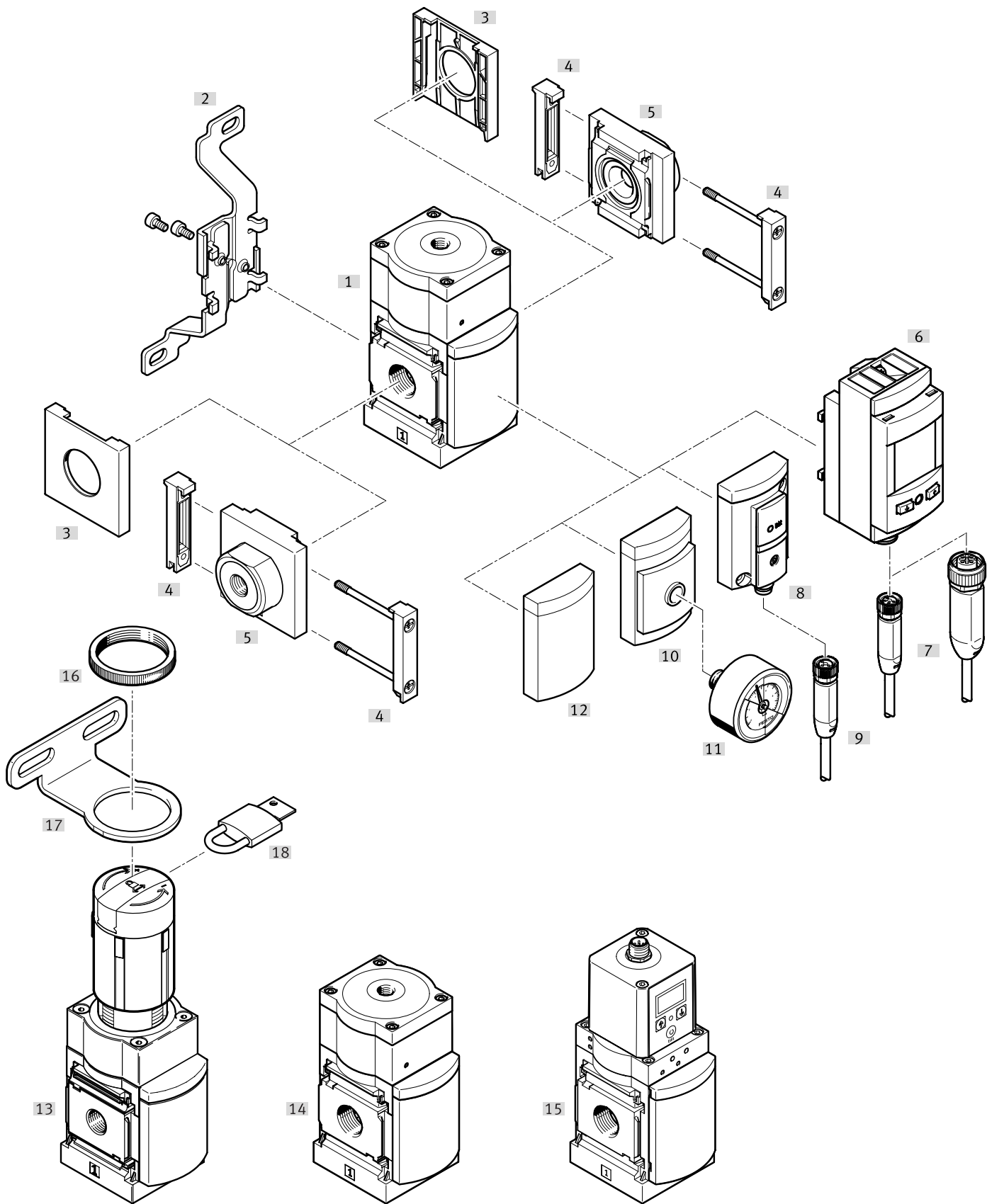
Ordering data							
	Pneumatic connection, port 1	Pressure regulation range	Flow direction	Product weight	Part no.	Type	
	1/4 NPT	0.05 ... 0.7 bar	From left to right	850 g	538029	MS6N-LRP-1/4-D2-A8	
			From right to left		538030	MS6N-LRP-1/4-D2-A8-Z	
		0.05 ... 2.5 bar	From left to right		538032	MS6N-LRP-1/4-D4-A8-Z	
					538031	MS6N-LRP-1/4-D4-A8	
		0.1 ... 4 bar	From right to left		538033	MS6N-LRP-1/4-D5-A8	
					538034	MS6N-LRP-1/4-D5-A8-Z	
		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	MS6N-LRP-3/8-D2-A8
					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		
			From right to left	538040	MS6N-LRP-3/8-D4-A8-Z		
	0.1 ... 4 bar		From left to right		538042	MS6N-LRP-3/8-D5-A8-Z	
					538041	MS6N-LRP-3/8-D5-A8	
	0.1 ... 12 bar		From left to right	538043	MS6N-LRP-3/8-D7-A8		
			From right to left	538044	MS6N-LRP-3/8-D7-A8-Z		
	1/2 NPT		0.05 ... 0.7 bar	From left to right	538046	MS6N-LRP-1/2-D2-A8-Z	
				From right to left	538045	MS6N-LRP-1/2-D2-A8	
		0.05 ... 2.5 bar	From right to left	538048	MS6N-LRP-1/2-D4-A8-Z		
			From left to right	538047	MS6N-LRP-1/2-D4-A8		
		0.1 ... 4 bar	From right to left	538050	MS6N-LRP-1/2-D5-A8-Z		
			From left to right	538049	MS6N-LRP-1/2-D5-A8		
		0.1 ... 12 bar	From right to left	538051	MS6N-LRP-1/2-D7-A8		
			From right to left	538052	MS6N-LRP-1/2-D7-A8-Z		

Ordering data – Modular product system

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

Peripherals

Peripherals overview



Peripherals

Accessories		→ Link
Type/order code	Description	
[1] Precision pressure regulator MS6N-LRP		ms6n-lrp
[2] Mounting bracket MS6-WB	Order code [WR]; for single device	22
[3] Cover cap MS6-END	For devices without connecting plate	24
[4] Module connector MS6-MV1	For device combinations and individual devices with connecting plate	22
[5] Connecting plate SET MS6-AQ...	Order code [AQ...]; for device combinations	24
[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		23
[8] Pressure sensor AD7 ... AD10	Order code [AD7], [AD8], [AD9], [AD10]; pressure sensor SDE5 with switching indicator	sde5
[9] Connecting cable NEBU-M8...-LE3		23
[10] Adapter for EN pressure gauge	Order code [A8], [A8M], [A4]	ms6n-lrp
[11] Pressure gauge MA		23
[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		24
[19] Mounting bracket MS6-WP/WPB/WPE/WPM	Not shown	22

Accessories

Module connector MS6-MV1

	Size	Material module connector	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	Material bracket	LABS (PWIS) conformity	Product weight	Part no.	Type
	6	Die-cast aluminium	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	Material bracket	LABS (PWIS) conformity	Product weight	Part no.	Type
	6	Steel	VDMA24364-B1/B2-L	121 g	532196	MS6-WB

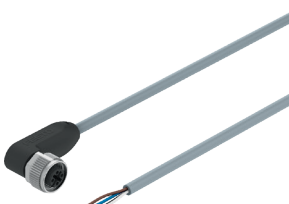
Mounting bracket MS6-WR

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

Accessories

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						
	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
	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

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

Mounting plate MS6-AEND						
	Size	Material housing	LABS (PWIS) conformity	Product weight	Part no.	Type
	6	PA-reinforced	VDMA24364-B1/B2-L	11.1 g	535408	MS6-AEND1

Connecting plate SET MS6-A...						
	Size	Pneumatic connection, port 1	Material sub-base	Product weight	Part no.	Type
	6	1/4 NPT	Die-cast aluminium	300 g	526076	MS6N-AQN
		3/8 NPT			526077	MS6N-AQP
		1/2 NPT			526078	MS6N-AQR
		3/4 NPT			526079	MS6N-AQS

Padlock LRV5-D				
	LABS (PWIS) conformity	Product weight	Part no.	Type
	VDMA24364-B1/B2-L	120 g	193786	LRV5-D