

Electrical Pressure Regulators MS6N-LRE – Inch Series



The electrical pressure regulator maintains incoming compressed air at the set output pressure. It also maintains a constant output pressure independent of pressure fluctuations and air consumption. The output pressure is set indirectly via an integrated electrical drive unit. The drive unit can be operated either with digital inputs via the M12 plug or using the optional control and display unit. The direction of rotation of the drive unit is thus pre-set, which makes adjustment of the output pressure in the rising or falling direction possible. In the event of a power failure, the last drive unit or output pressure setting is saved. Pneumatic pressure regulation continues to function.

- Pneumatic connection: 1/4 NPT, 3/8 NPT, 1/2 NPT, 3/4 NPT
- Supply pressure: 12 ... 294 psi
- Flow rate: 77.7 ... 264.8 scfm

Product Range Overview											
Type	Pneumatic connections		Pressure regulation range [psi]				Pressure indicator				Reverse flow
	Body thread	Port plate	4.4 ... 59	4.4 ... 103	7.4 ... 176	7.4 ... 235	Cover plate (without pressure gauge)	Integrated MS pressure gauge	Adapter for pressure gauge 1/8 NPT	Adapter for pressure gauge 1/4 NPT	Flow direction from right to left
MS6N		AG...	D5	D6	D7	D8	VS	AG	A8	A4	Z
LRE	1/4 NPT, 3/8 NPT, 1/2 NPT	1/4 NPT, 3/8 NPT, 1/2 NPT, 3/4 NPT	■	■	■	■	■	■	-	■	■

Features

- Constant output pressure even in the event of a power failure thanks to the fail-safe function
- Four pressure regulation ranges
- Available with or without secondary venting
- Optional control unit with display
- Optional integrated pressure sensor with electrical output

Contents

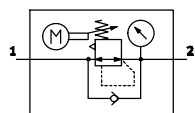
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- Ordering Data → 759
- Accessories → 762

→ www.festo.com/catalog/ms6n-lre

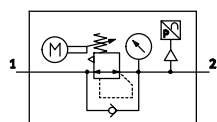
Electrical Pressure Regulators MS6N-LRE – Inch Series

Technical Data

ISO Symbol



With pressure gauge



With pressure gauge and integrated pressure sensor



Note

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

General Technical Data		1/4 NPT	3/8 NPT	1/2 NPT
Pneumatic connection 1, 2		1/4 NPT	3/8 NPT	1/2 NPT
Supply pressure	[psi]	12 ... 294		
Pressure regulation range	D5 [psi]	4.4 ... 59		
	D6 [psi]	4.4 ... 103		
	D7 [psi]	7.4 ... 176		
	D8 [psi]	7.4 ... 235		
Max. hysteresis	[psi]	3.7		

Standard Nominal Flow Rate q_{N1} [scfm]		1/4 NPT	3/8 NPT	1/2 NPT
Pressure regulation range	D5	84.7 ²⁾	194.2 ²⁾	264.8 ²⁾
	D6	105.9	204.7	229.5
	D7	95.3	158.9	194.2
	D8	77.7	141.2	158.9

1) Measured at $p_1 = 147$ psi and $p_2 = 88$ psi, $\Delta p = 15$ psi

2) Measured at $p_1 = 147$ psi and $p_2 = 44$ psi, $\Delta p = 15$ psi

Electrical Pressure Regulators MS6N-LRE – Inch Series

Technical Data

Electrical Data		Without integrated pressure sensor		With integrated pressure sensor	
				PI (I out)	PU (V out)
Analog output	[V]	–		–	0 ... 10
	[mA]	–		4 ... 20	–
Analog outputs, absolute accuracy at 77 °F	[%]	–		±3	±3
Cable interface	Inputs	Plug M12x1, 5-pin			
	Outputs	–		Plug M8x1, 3-pin	
Design of inputs		To IEC 61131-2, no electrical isolation			
Nominal operating voltage	[V DC]	24			
Permissible voltage fluctuations	[%]	±10			
Current consumption at 24 V DC	[A]	Max. 3.5			
Current consumption at nominal operating voltage	[A]	Max. 1			
Duration of actuation at 77°F	[s]	Max. 90 ¹⁾			
Protection against short circuit		For all electrical connections			
Protection class		IP65			

1) In order to prevent the drive from overheating, a control/pause ratio of 1:3 must be observed.

Operating and Environmental Conditions	
Operating medium	Compressed air, air quality class 5.4.– to DIN ISO 8573-1
Ambient temperature	[°F] 32 ... 122
Temperature of medium	[°F] 32 ... 122
Storage temperature	[°F] 32 ... 122
Assembly position	Any, preferably vertical
Corrosion resistance	CRC ¹⁾ 2

1) Corrosion resistance class 2 according to Festo standard 940 070
 Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

Weights [lb]	
Electrical pressure regulator	2.56

- For spare parts go to: www.festo.com/en/spare_parts_service

Electrical Pressure Regulators MS6N-LRE – Inch Series

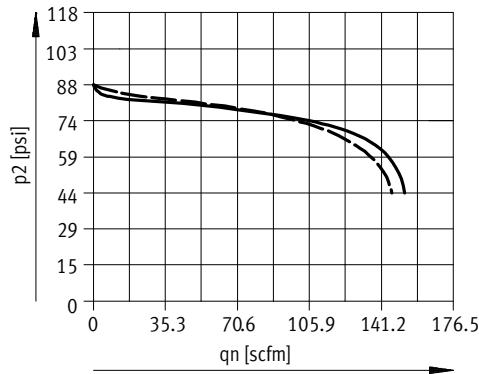
Technical Data



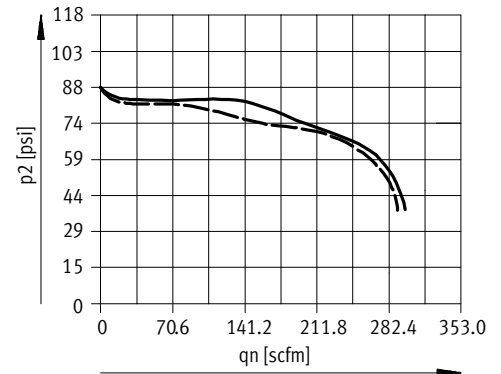
Standard Flow Rate q_n as a Function of Output Pressure p_2

Primary pressure $p_1 = 147$ psi

MS6N-LRE-1/4



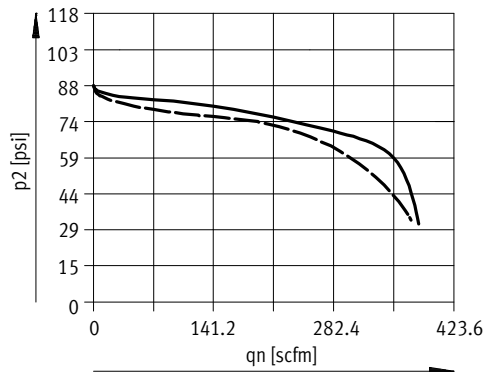
MS6N-LRE-3/8



— D6: 4.4 ... 103 psi
 - - - D7: 7.4 ... 176 psi

MS6N-LRE-1/2

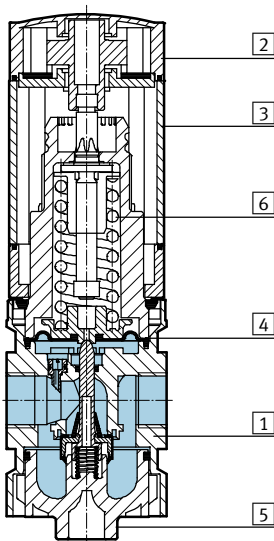
Primary pressure $p_1 = 147$ psi



— D6: 4.4 ... 103 psi
 - - - D7: 7.4 ... 176 psi

Materials

Sectional view



Electrical pressure regulator		
1	Body	Die-cast aluminum
2	Drive housing	Reinforced polyamide
3	Profile housing	Wrought aluminum alloy
4	Diaphragm	Nitrile rubber
5	Bottom cap	Polyester, fiberglass reinforced
6	Springs	Steel
-	Display and control unit	Polyamide
-	Seals	Nitrile rubber

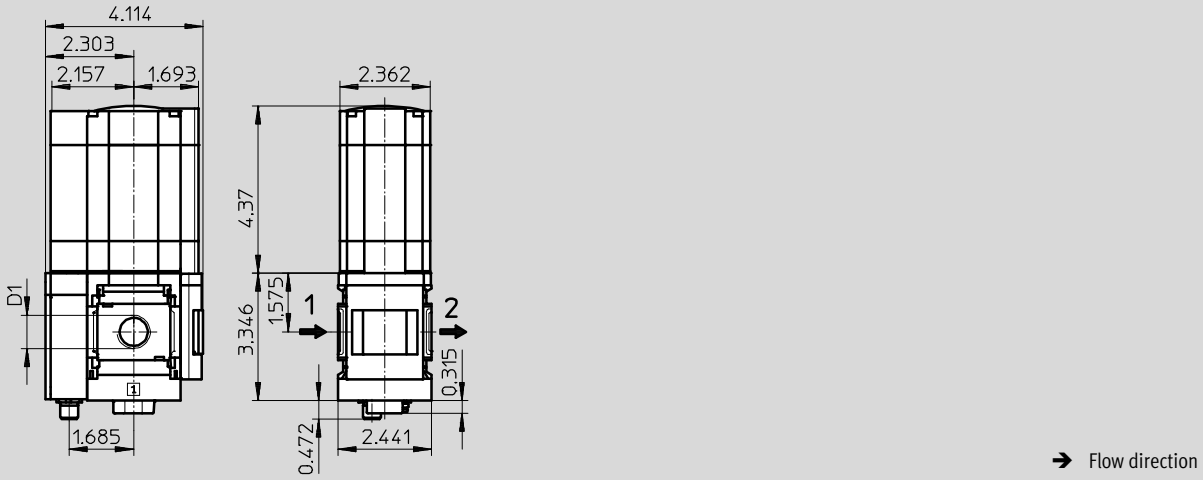
Electrical Pressure Regulators MS6N-LRE – Inch Series

Dimensional Drawings

Dimensions¹⁾ – Standard

Download CAD Data → www.festo.com/us/cad

With pressure gauge, display unit [psi]



Type	D1
MS6N-LRE-1/4	1/4 NPT
MS6N-LRE-3/8	3/8 NPT
MS6N-LRE-1/2	1/2 NPT

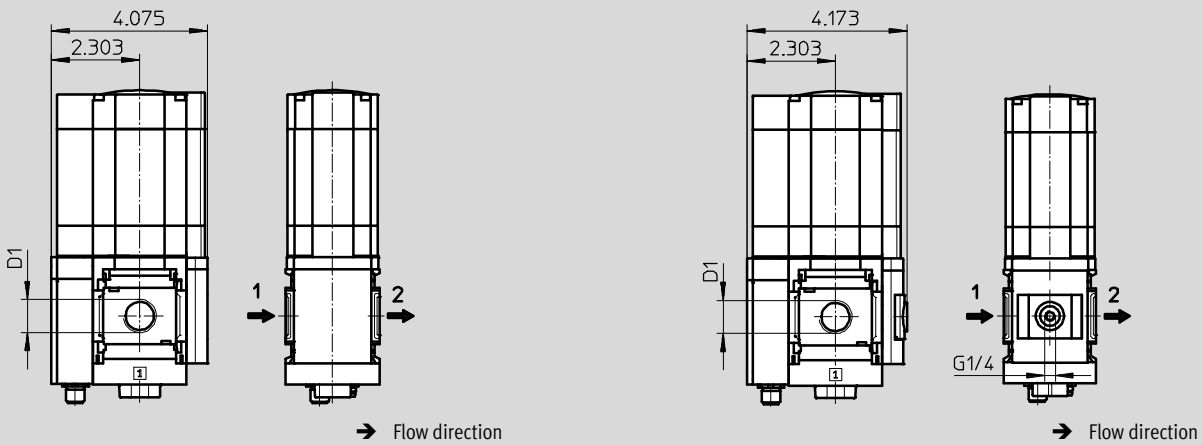
1) Dimensions are in inches, unless otherwise noted.

Dimensions¹⁾ – Pressure Gauge Alternatives

Download CAD Data → www.festo.com/us/cad

Cover plate VS

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



Type	D1
MS6N-LRE-1/4	1/4 NPT
MS6N-LRE-3/8	3/8 NPT
MS6N-LRE-1/2	1/2 NPT

1) Dimensions are in inches, unless otherwise noted.

Electrical Pressure Regulators MS6N-LRE – Inch Series

Dimensional Drawings

Dimensions¹⁾ – Pressure Gauge Alternatives Download CAD Data → www.festo.com/us/cad

Control unit with display OP

→ Flow direction

Type	D1
MS6N-LRE-1/4	1/4 NPT
MS6N-LRE-3/8	3/8 NPT
MS6N-LRE-1/2	1/2 NPT

1) Dimensions are in inches, unless otherwise noted.

Dimensions¹⁾ – Electrically Controlled Pressure Output Download CAD Data → www.festo.com/us/cad

Integrated pressure sensor with electrical output PI/PU

→ Flow direction

1) Dimensions are in inches, unless otherwise noted.

Electrical Pressure Regulators MS6N-LRE – Inch Series



Ordering Data – Pre-configured Products

Ordering Data						
Pressure gauge						
Connection	Pressure regulation range 4.4... 103 psi			Pressure regulation range 7.4... 176 psi		
	Part No.	Type	LT	Part No.	Type	LT
Standard						
1/4 NPT	536506	MS6N-LRE-1/4-D6	Q	536515	MS6N-LRE-1/4-D7	Q
3/8 NPT	536507	MS6N-LRE-3/8-D6	Q	536516	MS6N-LRE-3/8-D7	Q
1/2 NPT	536505	MS6N-LRE-1/2-D6	Q	536514	MS6N-LRE-1/2-D7	Q
Electrically controlled pressure output (integrated pressure sensor with voltage output), M8x1 plug, 3-pin						
1/4 NPT	536524	MS6N-LRE-1/4-D6-PI	Q	536533	MS6N-LRE-1/4-D7-PI	Q
3/8 NPT	536525	MS6N-LRE-3/8-D6-PI	Q	536534	MS6N-LRE-3/8-D7-PI	Q
1/2 NPT	536523	MS6N-LRE-1/2-D6-PI	Q	536532	MS6N-LRE-1/2-D7-PI	Q
Electrically controlled pressure output (integrated pressure sensor with voltage output), M8x1 plug, 3-pin						
1/4 NPT	536542	MS6N-LRE-1/4-D6-PU	Q	536551	MS6N-LRE-1/4-D7-PU	Q
3/8 NPT	536543	MS6N-LRE-3/8-D6-PU	Q	536552	MS6N-LRE-3/8-D7-PU	Q
1/2 NPT	536541	MS6N-LRE-1/2-D6-PU	Q	536550	MS6N-LRE-1/2-D7-PU	Q

LT = Lead time

1D typically ships same day/next day

3D typically ships within 3 days

Electrical Pressure Regulators MS6N-LRE – Inch Series



Ordering Data – Configurable Products

M Mandatory Data →

Part No.	Series	Size	Thread	Function	Connection size	Pressure regulation range
535192	MS	6	N	LRE	1/4, 3/8, 1/2, AQN, AQP, AQR, AQS	D5 D6 D7 D8
Order example						
535192	MS	6	N	- LRE	- AQP	- D6

Ordering Table

Grid dimension	[mm]	62	Conditions	Code	Enter code
M Part No.		535192			
Series		Standard		MS	MS
Size		6		6	6
Thread		NPT thread		N	N
Function		Electrical pressure regulator		-LRE	-LRE
Connection size		Body thread 1/4 NPT		-1/4	
		Body thread 3/8 NPT		-3/8	
		Body thread 1/2 NPT		-1/2	
		Port plate 1/4 NPT (dimensions → 765)		-AQN	
		Port plate 3/8 NPT (dimensions → 765)		-AQP	
		Port plate 1/2 NPT (dimensions → 765)		-AQR	
		Port plate 3/4 NPT (dimensions → 765)		-AQS	
Pressure regulation range		4.4 ... 59 psi		-D5	
		4.4 ... 103 psi		-D6	
		7.4 ... 176 psi		-D7	
		7.4 ... 235 psi		-D8	

Transfer order code

535192 MS 6 N - LRE - -

Electrical Pressure Regulators MS6N-LRE – Inch Series



Ordering Data – Configurable Products

Options

Pressure gauge alternatives	Alternative pressure gauge scale	Secondary venting	Electrically controlled pressure output	Sensor cables	Supply cables	Type of mounting	Reverse flow direction
VS A4 OP	BAR MPA	OS	PI PU	SK2 SK5	VK2 VK5	WBE WPB	Z
- OP	-	- OS	- PU	- SK5	-	-	- Z

Ordering Table

Grid dimension	[mm]	62	Conditions	Code	Enter code
0 Pressure gauge alternatives	Cover plate			-VS	
	Adapter plate for EN pressure gauge 1/4, without pressure gauge			-A4	
	Control unit with display		1	-OP	
Alternative pressure gauge scale	bar		2	-BAR	
	MPa		2	-MPA	
Secondary venting	Without secondary venting			-OS	
Electrically controlled pressure output	Plug, M8, 3-pin, I out			-PI	
	Plug, M8, 3-pin, V out			-PU	
Sensor cables	Plug socket, M8, with cable, 8.2 ft		1	-SK2	
	Plug socket, M8, with cable, 16.4 ft		1	-SK5	
Supply cable	Plug socket, M12, with cable, 8.2 ft			-VK2	
	Plug socket, M12, with cable, 16.4 ft			-VK5	
Type of mounting	Mounting plate for direct thread MS6-AEND (dimensions → 764)		3	-WBE	
	Mounting bracket for large wall gap (dimensions → 766)		4	-WPB	
Reverse flow direction	Flow direction from right to left			-Z	

1 OP, SK2, SK5

Only with electrical pressure output PI, PU

3 WBE

Only with connection thread size 1/4, 3/8, 1/2

2 BAR, MPA Not with pressure gauge alternatives VS, A4, OP

4 WPB

Only with port plate size AQN, AQP, AQR, AQS

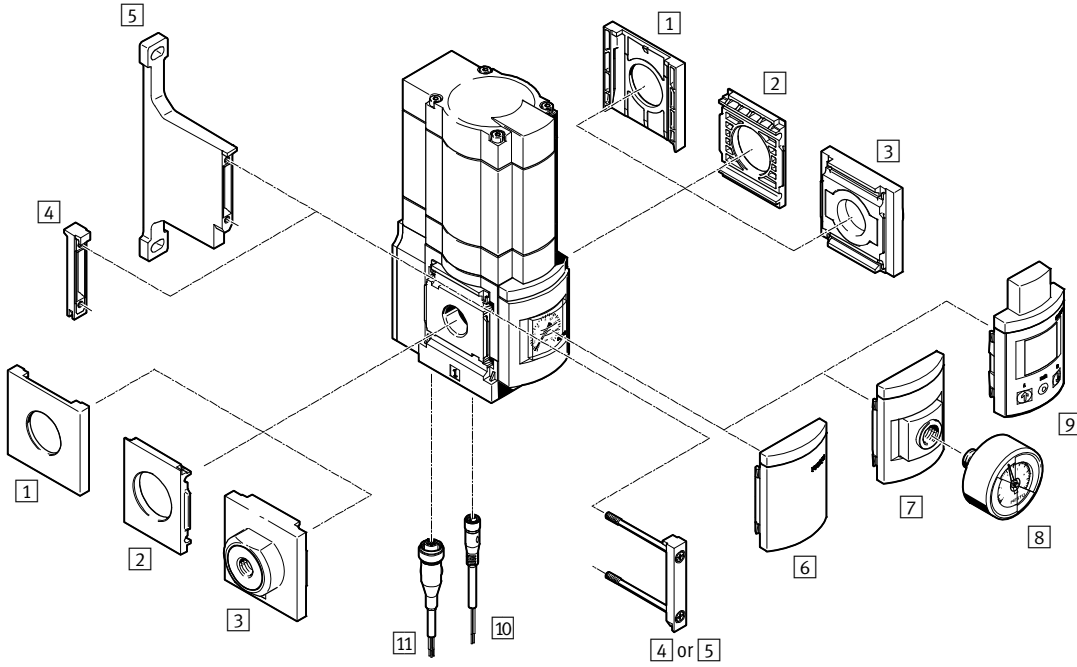
Transfer order code

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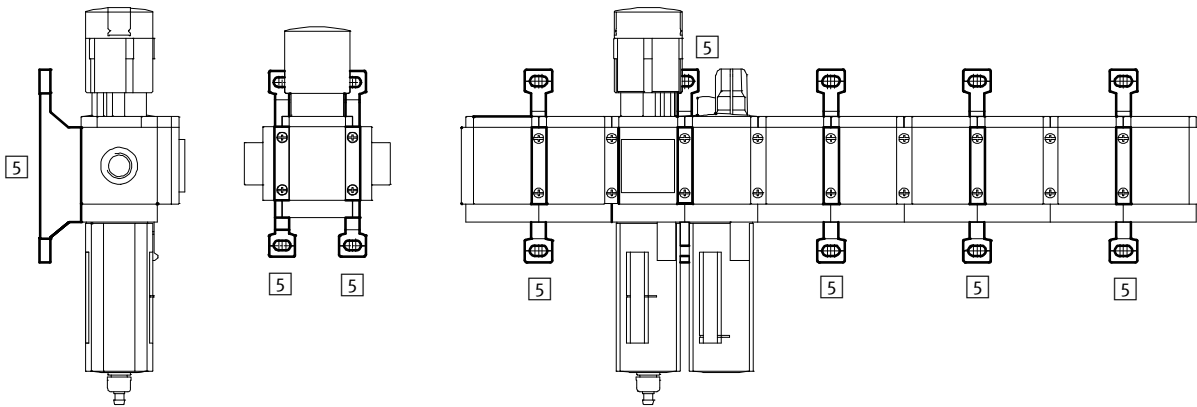
Electrical Pressure Regulators MS6N-LRE – Inch Series

Accessories Overview

Mounting Attachments and Accessories



Single unit and combination unit mounting brackets.



Electrical Pressure Regulators MS6N-LRE – Inch Series

Accessories Overview

Mounting Attachments and Accessories						
		Single unit		Combination unit → 3.1-49		→ Page
		Without port plate	With port plate	Without port plate	With port plate	
1	Cover cap MS6-END	-	-	■	-	764
2	Mounting plate MS6-AEND	■ ¹⁾	-	■ ²⁾	-	764
3	Port plate MS6N-AQ...	-	■ ¹⁾	-	■ ²⁾	765
4	Body connector MS6-MV	-	-	■	■	765
5	Mounting bracket MS6-WPB	■	■	■	■	766
6	Cover plate VS	■	■	■	■	761
7	Adapter plate for EN pressure gauge 1/4 A4	■	■	■	■	761
8	Pressure gauge MA	■	■	■	■	768
9	Control unit with display OP	■	■	■	■	761
10	Plug socket with cable SIM-M8-3...	■	■	■	■	768
11	Plug socket with cable SIM-M12-5...	■	■	■	■	768

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

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

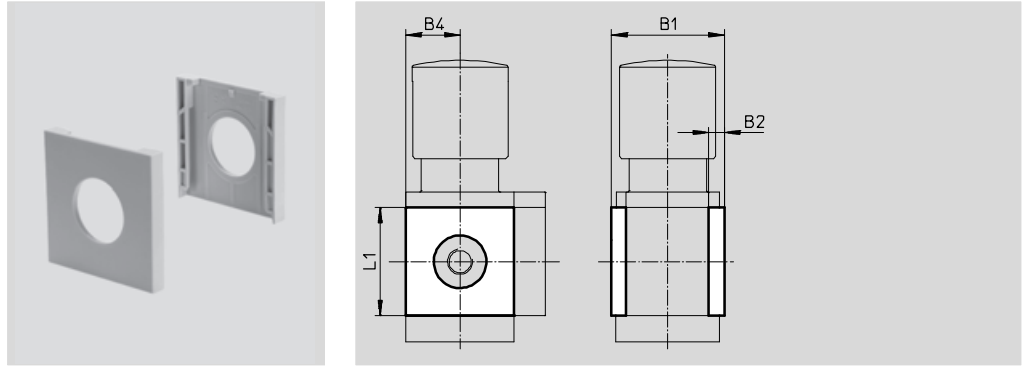
Electrical Pressure Regulators MS6N-LRE – Inch Series

Accessories

1 Cover cap MS6-END

- Can be used to cover the body sides of the first and last module if port plates are not used.

Material:
Reinforced polyamide
Free of copper and PTFE



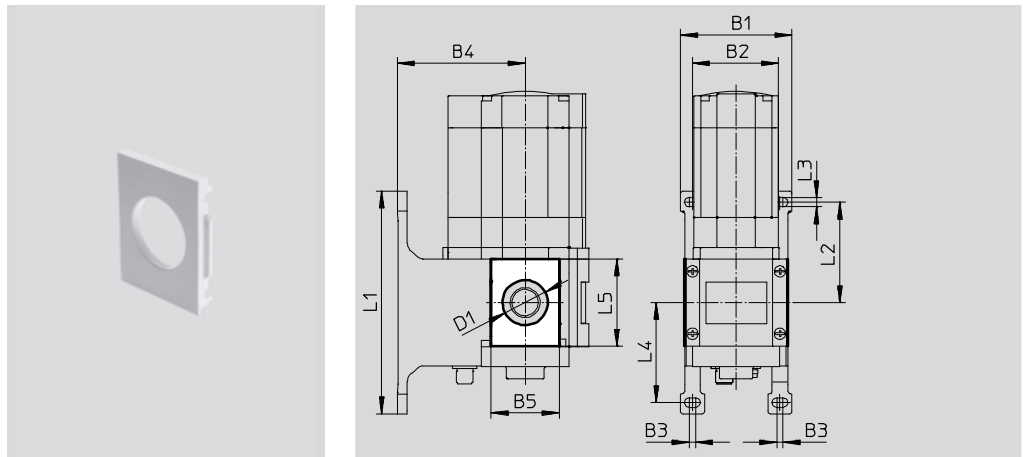
Dimensions and Ordering Data						
B1	B2	B4	L1	Part No.	Type	
2.64	0.31	1.22	2.44	538780	MS6-END	

2 Mounting plate MS6-AEND

(order code: WBE; scope of delivery includes mounting bracket MS6-WPB)

- In combination with mounting bracket MS-WPB for mounting an individual unit on a wall with body thread

Material:
Reinforced polyamide
Conforms to RoHS
Free of copper and PTFE



Dimensions and Ordering Data															
B1	B2	B3	B4		B5	D1 ∅	L1	L2	L3	L4	L5	CRC ¹⁾	Weight [lb]	Part No.	Type
			WP	WPB											
3.11	2.44	0.18	2.13	3.56	1.91	1.26	6.22	2.80	0.26	2.80	2.44	2	0.03	535408	MS6-AEND

1) Corrosion resistance class 2 according to Festo standard 940 070
Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

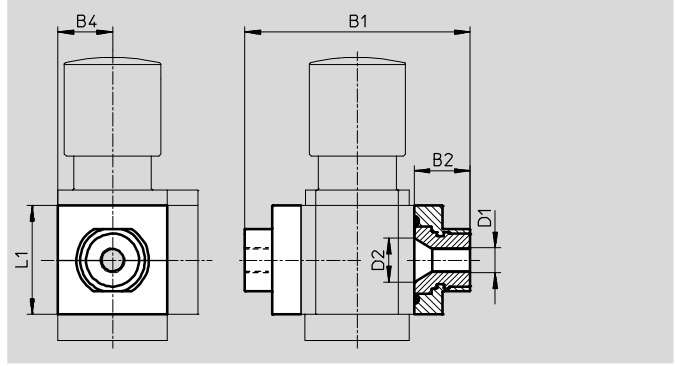
Electrical Pressure Regulators MS6N-LRE – Inch Series

Accessories

3 Port plate MS6N-AQ...

- Adapter for pneumatic connection
- MS6-AGE for implementing threaded connection 3/4 NPT

Material:
Aluminum



Dimensions and Ordering Data								
B1	B2	B4	D1	D2	L1	Weight [lb]	Part No.	Type
4.53	1.04	1.22	1/4 NPT	0.94	2.44	0.60	526076	MS6N-AQN
			3/8 NPT				526077	MS6N-AQP
			1/2 NPT				526078	MS6N-AQR
			3/4 NPT				526079	MS6N-AQS

4 Body connector MS...-MV

- For connecting modules

Material:
Stainless steel/polyacetate



Ordering Data		
Weight [lb]	Part No.	Type
0.11	532799	MS6-MV

Electrical Pressure Regulators MS6N-LRE – Inch Series

Accessories

5 Mounting Bracket MS6-WP...

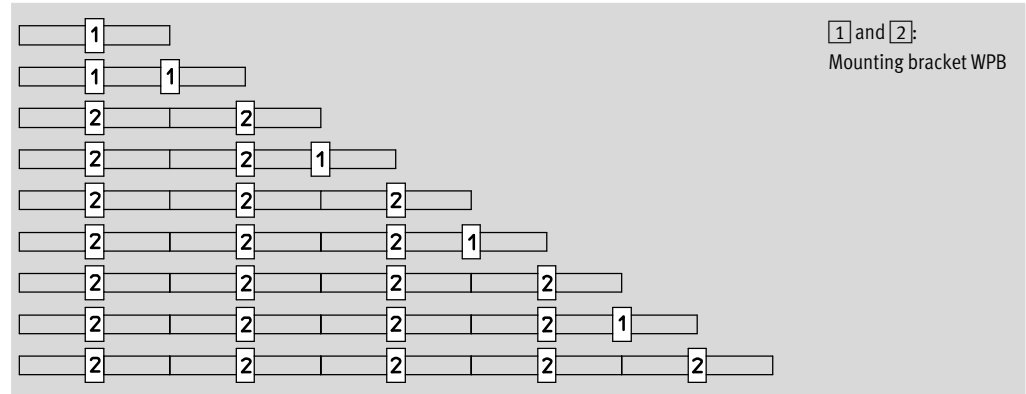
Suggested placement of wall mounting brackets when mounting air preparation combinations

1 unit: 2.44 in with WPB

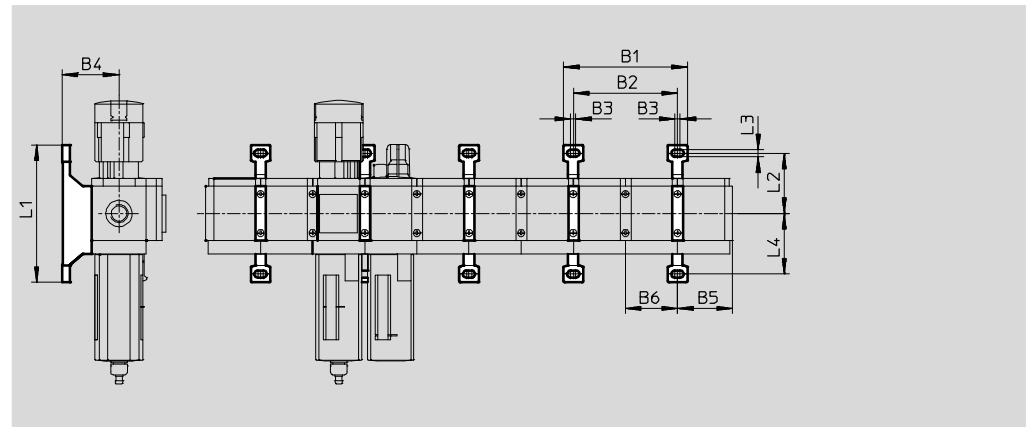
2 units: 4.88 in with WPB

Number of units

1 2 3 4 5 6 7 8 9 10



Mounting dimensions



Type	B1	B2	B3	B4	B5	B6	L1	L2	L3	L4
MS6-WPB	5.55	4.88	0.18	3.56	2.54	2.44	6.22	2.80	0.26	2.80

Electrical Pressure Regulators MS6N-LRE – Inch Series

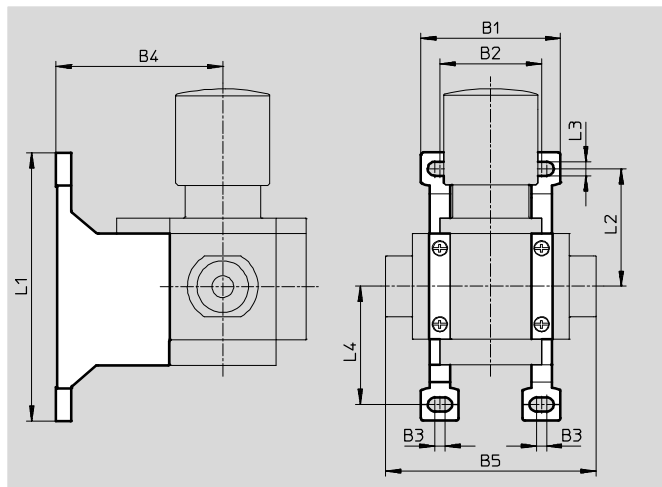


Accessories

Mounting bracket MS6-WPB

- To connect the modules for wall mounting
- In combination with a port plate MS-AG... for mounting an individual unit on a wall
- In combination with mounting plate MS-AEND or for mounting an individual unit with direct thread on a wall
- Provides large wall gap for pressure regulator

Material:
Die-cast aluminum



Dimensions and Ordering Data											
B1	B2	B3	B4	B5	L1	L2	L3	L4	Weight [lb]	Part No.	Type
3.11	2.44	0.18	3.56	4.53	6.22	2.80	0.26	2.80	0.23	526074	MS6-WPB

Body connector MS6-MVM

- For installation of modules with regulating knob pointing downwards

Material:
Die-cast aluminum






Ordering Data		
Size	Part No.	Type
MS6	532801	MS6-MVM


Electrical Pressure Regulators MS6N-LRE – Inch Series



Accessories

10 Ordering Data – Plug Socket with Cable SIM-M8			Technical data → www.festo.com/catalog/sim-m8	
	Electrical connection	Cable length [ft]	Part No.	Type
				M8x1, 3-pin
		16.4	159421	SIM-M8-3GD-5-PU
		32.8	192964	SIM-M8-3GD-10-PU
	M8x1, 3-pin	8.2	159422	SIM-M8-3WD-2,5-PU
		16.4	159423	SIM-M8-3WD-5-PU
		32.8	192965	SIM-M8-3WD-10-PU

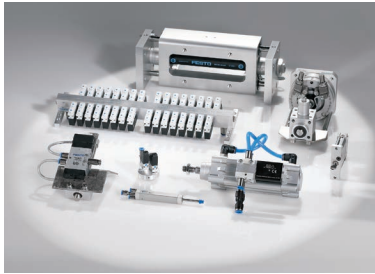
11 Ordering Data – Plug Socket with Cable SIM-M12			Technical data → www.festo.com/catalog/sim-m12	
	Electrical connection	Cable length [ft]	Part No.	Type
				M12x1, 5-pin
		16.4	175716	SIM-M12-5GD-5-PU

8 Ordering Data – Pressure Gauge MA				Technical data → www.festo.com/catalog/ma		
	Nominal size	Pneumatic connection	Indicating range		Part No.	Type
			[bar]	[psi]		
	Pressure gauge MA, DIN EN 837-1					
	1.57	¼ NPT	0 ... 16	0 ... 232	183908	MA-40-16-N¼-EN
	Pressure gauge MA, DIN EN 837-1, with red-green range					
	1.97	¼ NPT	–	0 ... 232	530391	MA-50-232-N¼-PSI-E-RG

Product Range and Company Overview

A Complete Suite and Company Overview

Our experienced engineers provide complete support at every stage of your development process, including: conceptualization, analysis, engineering, design, assembly, documentation, validation, and production.



Custom Automation Components
Complete custom engineered solutions



Custom Control Cabinets
Comprehensive engineering support and on-site services



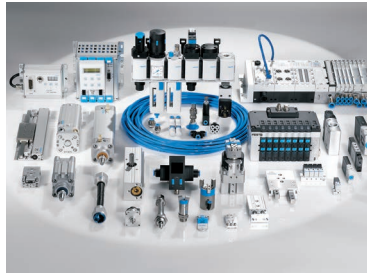
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Shipment, stocking and storage services

The Broadest Range of Automation Components

With a comprehensive line of more than 30,000 automation components, Festo is capable of solving the most complex automation requirements.



Electromechanical
Electromechanical actuators, motors, controllers & drivers



Pneumatics
Pneumatic linear and rotary actuators, valves, and air supply



PLCs and I/O Devices
PLC's, operator interfaces, sensors and I/O devices

Supporting Advanced Automation... As No One Else Can!

Festo is a leading global manufacturer of pneumatic and electromechanical systems, components and controls for industrial automation, with more than 16,000 employees in 60 national headquarters serving more than 180 countries. For more than 80 years, Festo has continuously elevated the state of manufacturing with innovations and optimized motion control solutions that deliver higher performing, more profitable automated manufacturing and processing equipment. Our dedication to the advancement of automation extends beyond technology to the education and development of current and future automation and robotics designers with simulation tools, teaching programs, and on-site services.

Quality Assurance, ISO 9001 and ISO 14001 Certifications

Festo Corporation is committed to supply all Festo products and services that will meet or exceed our customers' requirements in product quality, delivery, customer service and satisfaction.

To meet this commitment, we strive to ensure a consistent, integrated, and systematic approach to management that will meet or exceed the requirements of the ISO 9001 standard for Quality Management and the ISO 14001 standard for Environmental Management.



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Festo North America



1 Festo Canada Headquarters
Festo Inc.
5300 Explorer Drive
Mississauga, ON
L4W 5G4

2 Montréal
5600, Trans-Canada
Pointe-Claire, QC
H9R 1B6

3 Québec City
2930, rue Watt#117
Québec, QC
G1X 4G3



4 Festo United States Headquarters
Festo Corporation
395 Moreland Road
Hauppauge, NY
11788

5 Appleton
North 922 Tower View Drive, Suite N
Greenville, WI
54942

7 Detroit
1441 West Long Lake Road
Troy, MI
48098

6 Chicago
85 W Algonquin - Suite 340
Arlington Heights, IL
60005

8 Silicon Valley
4935 Southfront Road, Suite F
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94550

Festo Regional Contact Center

Canadian Customers

Commercial Support:
Tel: 1 877 GO FESTO (1 877 463 3786)
Fax: 1 877 FX FESTO (1 877 393 3786)
Email: festo.canada@ca.festo.com

Technical Support:
Tel: 1 866 GO FESTO (1 866 463 3786)
Fax: 1 877 FX FESTO (1 877 393 3786)
Email: technical.support@ca.festo.com

USA Customers

Commercial Support:
Tel: 1 800 99 FESTO (1 800 993 3786)
Fax: 1 800 96 FESTO (1 800 963 3786)
Email: customer.service@us.festo.com

Technical Support:
Tel: 1 866 GO FESTO (1 866 463 3786)
Fax: 1800 96 FESTO (1 800 963 3786)
Email: product.support@us.festo.com