

# Pressure Regulators MS12N-LR – Inch Series



The pressure regulator maintains a constant working pressure (secondary side), regardless of the pressure variations in the system (primary side) and the air consumption.

- Pneumatic connection: 1 NPT, 1¼ NPT, 1½ NPT, 2 NPT
- Supply pressure: 12 ... 309 psi
- Flow rate: 458.9 ... 776.6 scfm

Product Range Overview															
Type	Pneumatic connections		Pressure regulation range [psi]				Pressure indicator					Pressure adjustment		Reverse flow	
			D5	D6	D7	D8	VS	AG	A8	A4	AD...	AS	LD		
	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 ¼ NPT	Adapter for pressure gauge ¼ NPT	Pressure sensor with display	Rotary knob, lockable	Rotary knob, long	Flow direction from right to left	
<b>MS12N</b>		<b>AG...</b>	<b>D5</b>	<b>D6</b>	<b>D7</b>	<b>D8</b>	<b>VS</b>	<b>AG</b>	<b>A8</b>	<b>A4</b>	<b>AD...</b>	<b>AS</b>	<b>LD</b>	<b>Z</b>	
LR	-	1 NPT, 1¼ NPT, 1½ NPT, 2 NPT	-	■	■	■	■	-	-	■	-	■	■	■	

## Features

- Good control characteristics with low hysteresis and primary pressure compensation
- High flow rate with minimal pressure drop
- Three pressure regulation ranges
- Pressure gauge connection for different fitting options
- Setting values are secured by locking the rotary knob
- With secondary venting
- Rotary knob can be locked using accessories

## Contents

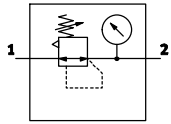
- Technical Data → 1092
- Dimensional Drawings → 1094
- Ordering Data → 1095
- Accessories → 1098
- Replacement Parts → 1102

→ [www.festo.com/catalog/ms12n-lr](http://www.festo.com/catalog/ms12n-lr)

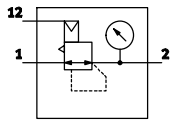
# Pressure Regulators MS12N-LR – Inch Series

Technical Data

ISO Symbol



With pressure gauge



With pressure gauge and air pilot control (variant PO)



General Technical Data				
Pneumatic connection 1, 2 <sup>1)</sup>	1 NPT	1¼ NPT	1½ NPT	2 NPT
Pilot air connection 12 for variant PO	¼ NPT			
Supply pressure	[psi]	12 ... 309		
Pressure regulation range	D6	[psi]	4.4 ... 103	
	D7	[psi]	7.4 ... 176	
	D8	[psi]	7.4 ... 235	
Max. hysteresis	[psi]	5.9		

1) Dependent on port plate selected, must be ordered separately as an accessory → 1099

Standard Nominal Flow Rate q <sub>N</sub> <sup>2)</sup> [scfm]				
Pneumatic connection 1, 2	1 NPT	1¼ NPT	1½ NPT	2 NPT
In main flow direction 1 → 2	458.9	476.6	564.8	776.6

2) Dependent on port plate selected, must be ordered separately as an accessory → 1099  
Measured at p<sub>1</sub> = 147 psi and p<sub>2</sub> = 88 psi, Δp = 7.4 psi

Operating and Environmental Conditions	
Operating medium	Compressed air, air quality class 5.7.– to DIN ISO 8573-1
Ambient temperature	[°F] 14 ... 140
Temperature of medium	[°F] 14 ... 140
Storage temperature	[°F] 14 ... 140
Assembly position	Any
Corrosion resistance	CRC <sup>3)</sup> 2

3) 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]	
Product weight	8.00

- Wearing parts kits → 1102
- For spare parts go to: [www.festo.com/en/spare\\_parts\\_service](http://www.festo.com/en/spare_parts_service)

# Pressure Regulators MS12N-LR – Inch Series

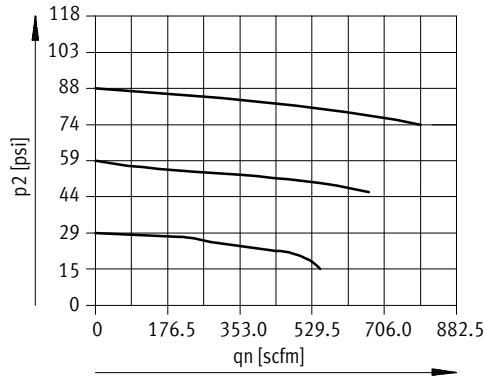
Technical Data



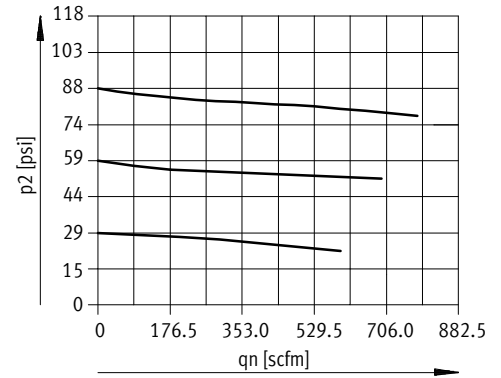
## Standard Flow Rate $q_n$ as a Function of Output Pressure $p_2$

Primary pressure  $p_1 = 147$  psi

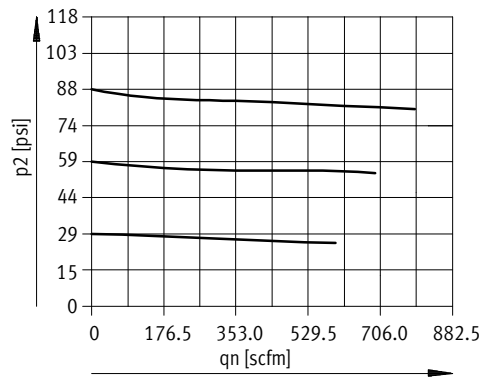
With port plate MS12-AGF  
Pneumatic connection 1NPT



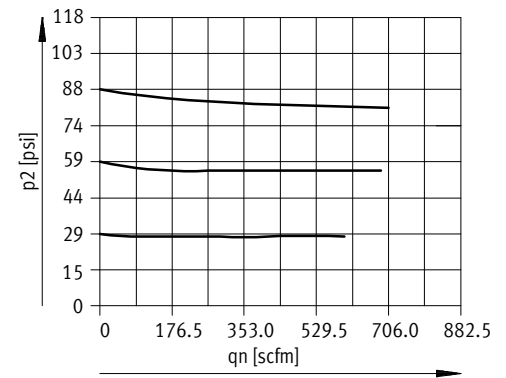
With port plate MS12-AGG  
Pneumatic connection 1¼NPT



With port plate MS12-AGH  
Pneumatic connection 1½NPT

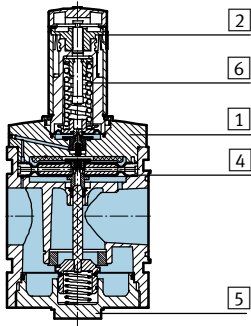


With port plate MS12-AGI  
Pneumatic connection 2NPT



## Materials

Sectional view



Pressure regulator		
1	Body	Die-cast aluminum
2	Regulating knob	Polyamide/polyacetate
4	Diaphragm	Nitrile rubber
5	Bottom cap	Wrought aluminum alloy
6	Springs	Steel
-	Seals	Nitrile rubber
Note on materials		Free of copper and PTFE only with cover plate VS

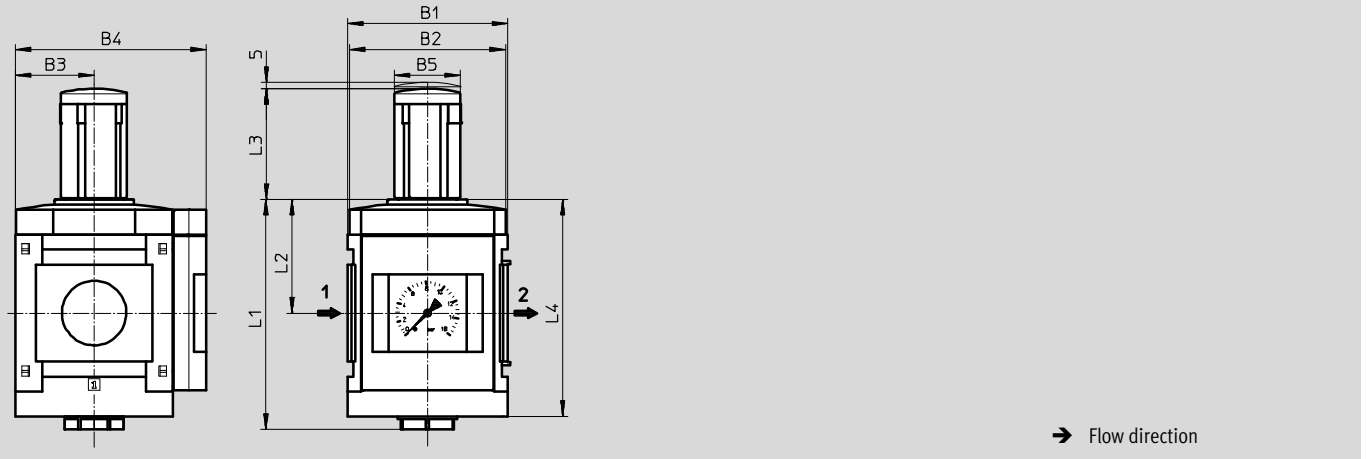
# Pressure Regulators MS12N-LR – Inch Series

Dimensional Drawings

## Dimensions<sup>1)</sup> – Standard

Download CAD Data → [www.festo.com/us/cad](http://www.festo.com/us/cad)

With pressure gauge, display unit [psi], long rotary knob



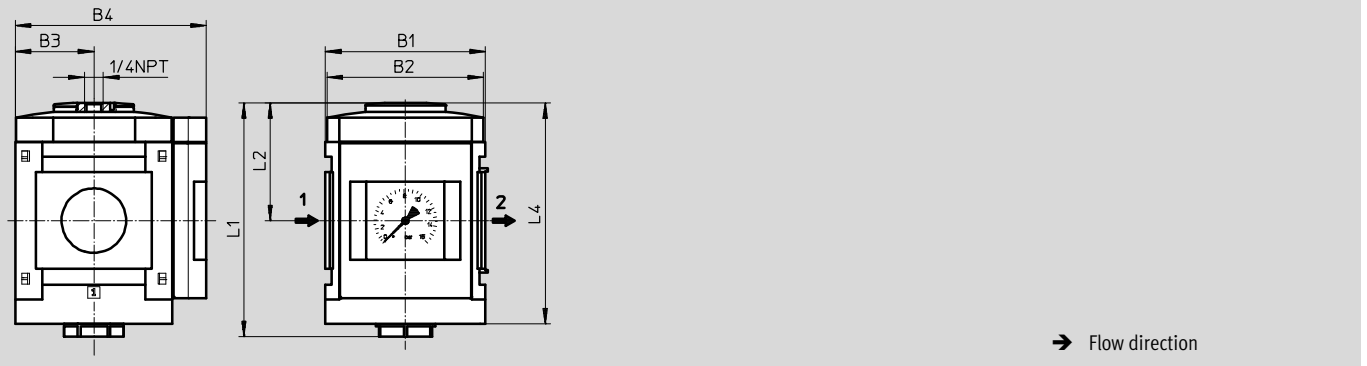
B1	B2	B3	B4	B5	L1	L2	L3	L4
4.88	4.80	2.40	5.83	2.01	7.01	3.46	3.39	6.61

1) Dimensions are in inches, unless otherwise noted.

## Dimensions<sup>1)</sup> – Alternative Operating Principle

Download CAD Data → [www.festo.com/us/cad](http://www.festo.com/us/cad)

Pneumatically actuated PO, with pressure gauge, display unit [psi]



Type	B1	B2	B3	B4	L1	L2	L4
MS12-LR-...-PO	4.88	4.80	2.40	5.83	7.13	3.58	6.73

1) Dimensions are in inches, unless otherwise noted.

# Pressure Regulators MS12N-LR – Inch Series

Dimensional Drawings, Ordering Data – Pre-configured Products



**Dimensions<sup>1)</sup> – Pressure Gauge Alternatives** Download CAD Data → [www.festo.com/us/cad](http://www.festo.com/us/cad)

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

Type	B3	B4	D4
MS12-LR-...-VS	2.40	5.83	–
MS12-LR-...-A4	2.40	5.83	G <sup>1</sup> / <sub>4</sub>

1) Dimensions are in inches, unless otherwise noted.

**Dimensions<sup>1)</sup> – Rotary Knob**

Long, lockable LD-AS

Type	B5	B6	L3
MS12-LR-...-LD-AS	2.54	1.54	3.76

1) Dimensions are in inches, unless otherwise noted.

Ordering Data						
Pressure gauge						
Connection		Long rotary knob, can be locked using accessories, pressure regulation range 7.4 ... 176 psi			Alternative operating principle, pressure regulation range 7.4 ... 235 psi	
		Part No.	Type	LT	Part No.	Type
1NPT ... 2NPT <sup>2)</sup>		537148	MS12-LR-G-D7-LD-AS	1D	541680	MS12-LR-G-D8-PO
						Q

LT = Lead time      1D typically ships same day/next day      3D typically ships within 3 days

2) Port plate must be ordered separately as an accessory → 1099

# Pressure Regulators MS12N-LR – Inch Series



Ordering Data – Configurable Products

**M** Mandatory Data →

Part No.	Series	Size	Thread	Function	Connection size	Pressure regulation range
535024	MS	12	N	LR	AQT AQU AQV AQW G	D6 D7 D8
<b>Order example</b>						
<b>535024</b>	<b>MS</b>	<b>12</b>	<b>N</b>	<b>LR</b>	<b>G</b>	<b>D8</b>

Ordering Table		Grid dimension [mm]	124	Conditions	Code	Enter code
<b>M</b>	Part No.	<b>535024</b>				
	Series	Standard			<b>MS</b>	MS
	Size	12			<b>12</b>	12
	Thread	NPT thread			<b>N</b>	N
	Function	Pressure regulator			<b>-LR</b>	-LR
	Connection size	Port plate 1 NPT (dimensions → 1099)			<b>-AQT</b>	
		Port plate 1¼ NPT (dimensions → 1099)			<b>-AQU</b>	
		Port plate 1½ NPT (dimensions → 1099)			<b>-AQV</b>	
		Port plate 2 NPT (dimensions → 1099)			<b>-AQW</b>	
		Module without connecting thread, without port plate			<b>-G</b>	
	Pressure regulation range	4.4 ... 103 psi			<b>-D6</b>	
		7.4 ... 176 psi			<b>-D7</b>	
		7.4 ... 235 psi			<b>-D8</b>	

Transfer order code

# Pressure Regulators MS12N-LR – Inch Series



Ordering Data – Configurable Products

## Options

Pressure gauge alternatives	Alternative pressure gauge scale	Rotary knob	Security	Alternative operating principle	Type of mounting	Reverse flow direction
VS A4	BAR MPa	LD	AS	PO	WP	Z
- VS	-	- LD	- AS	-	-	- Z

## Ordering Table

Grid dimension	[mm]	124	Conditions	Code	Enter code
0 Pressure gauge alternatives	Cover plate			-VS	
	Adapter plate for EN pressure gauge 1/4, without pressure gauge			-A4	
Alternative pressure gauge scale	bar		1	-BAR	
	MPa		1	-MPA	
Rotary knob	Long rotary knob		2	-LD	
Security	Lockable rotary knob			-AS	
Alternative operating principle	Pneumatically actuated		3	-PO	
Type of mounting	Mounting bracket (dimensions → 1100)		4	-WP	
Reverse flow direction	Flow direction from right to left			-Z	

1 **BAR, MPA** Not with pressure gauge alternatives VS, A4

2 **LD** Must be selected if alternative operating principle PO has not been selected

3 **PO** Not with rotary knob LD.

Not with security AS

4 **WP** Only with port plate AQT, AQU, AQV or AQW

Transfer order code

-  -  -  -  -  -  -

# Pressure Regulators MS12N-LR – Inch Series

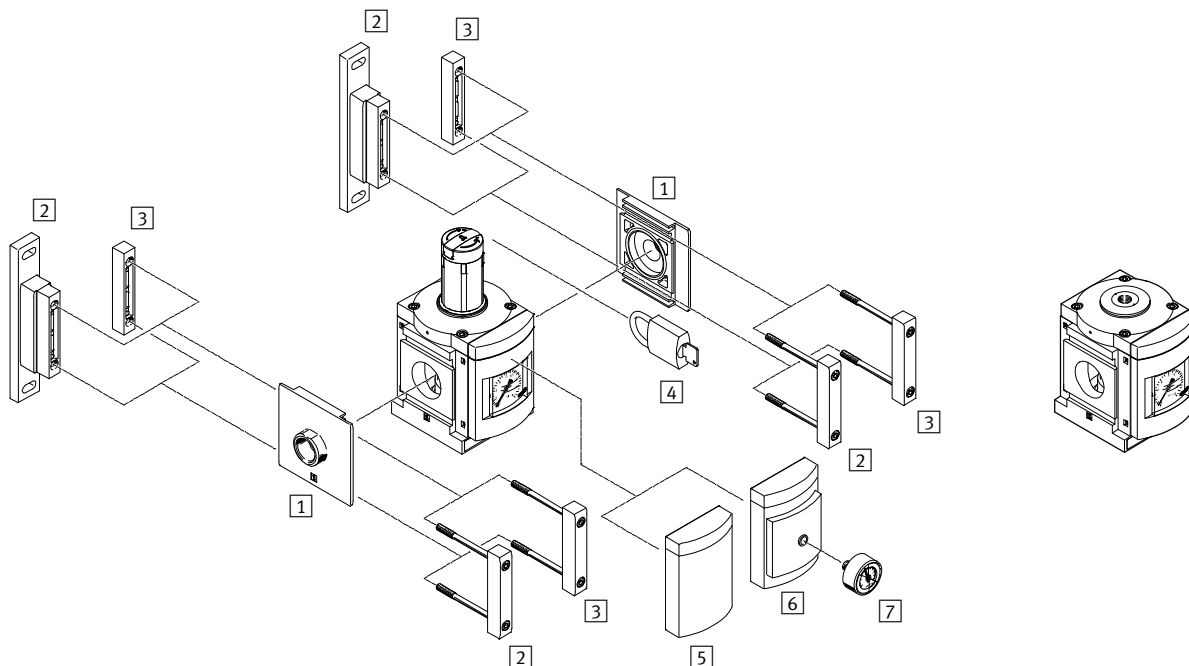
Accessories Overview

FESTO

## Mounting Attachments and Accessories

Standard

Variant PO  
pneumatically actuated



## Mounting Attachments and Accessories

		→ Page
1	Port plate MS12-AQ...	1099
2	Mounting bracket MS12-WP	1100
3	Body connector MS12-MV	1099
4	Padlock (except variant PO) LRVS-D	1101
5	Cover plate VS	1097
6	Adapter for EN pressure gauge 1/4 A4	1097
7	Pressure gauge MA	1101



# Pressure Regulators MS12N-LR – Inch Series

Accessories

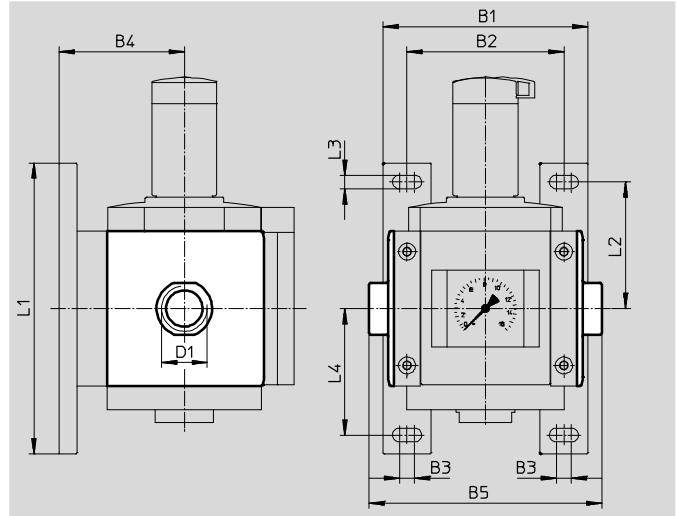
## 1 Port plate MS12-AQ...

- Adapter for pneumatic connection

Material:

Die-cast aluminum

Free of copper and PTFE



Dimensions and Ordering Data												
B1	B2	B3	B4	B5	D1	L1	L2	L3	L4	Weight [lb]	Part No.	Type
6.38	4.88	0.47	3.90	7.24	1 NPT	9.06	3.94	0.43	3.94	2.60	537139	MS12-AQT
				7.24	1¼ NPT						537140	MS12-AQU
				7.24	1½ NPT						537141	MS12-AQV
				7.72	2 NPT						537142	MS12-AQW

## 3 Body connector MS12-MV

- For connecting modules

Material:

Die-cast aluminum,

Free of copper and PTFE



Ordering Data			
Size	Weight [lb]	Part No.	Type
MS12	1.00	537134	MS12-MV

# Pressure Regulators MS12N-LR – Inch Series



Accessories

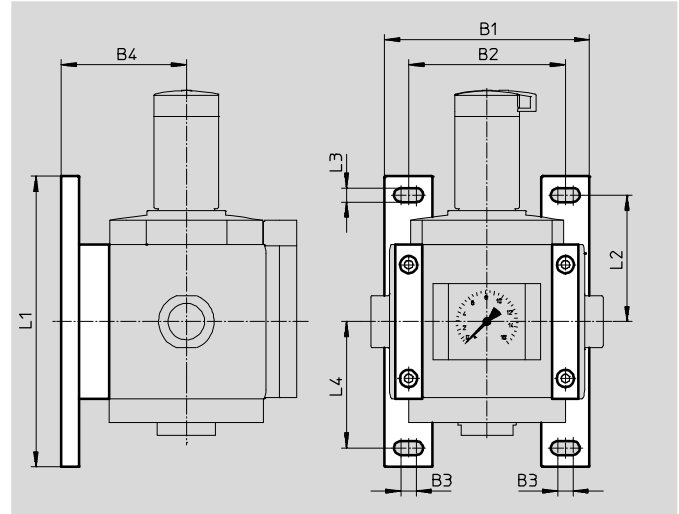
## 3 Mounting bracket MS12-WP

- To connect the modules for wall mounting
- In combination with a port plate for mounting an individual unit on a wall

Material:

Die-cast aluminum

Free of copper and PTFE




### Dimensions and Ordering Data


Size	B1	B2	B3	B4	L1	L2	L3	L4	Weight [[b]	Part No.	Type
MS12	6.38	4.88	0.47	3.90	9.06	3.94	0.43	3.94	1.40	537133	MS12-WP

# Pressure Regulators MS12N-LR – Inch Series



Accessories

7 Ordering Data – Pressure Gauge MA					Technical data → <a href="http://www.festo.com/catalog/ma">www.festo.com/catalog/ma</a>	
	Nominal size	Pneumatic connection	Indicating range		Part No.	Type
			[bar]	[psi]		
	Pressure gauge MA, DIN EN 837-1					
	1.57	R $\frac{1}{4}$	0 ... 16	0 ... 232	<b>187080</b>	<b>MA-40-16-R<math>\frac{1}{4}</math>-EN</b>
	Pressure gauge MA, DIN EN 837-1, with red-green range					
	1.97	R $\frac{1}{4}$	–	0 ... 232	<b>526790</b>	<b>MA-50-232-R<math>\frac{1}{4}</math>-PSI-E-RG</b>

4 Ordering Data – Padlock LRVS-D			
	Description	Weight [lb]	Part No. Type
	for regulators, filter/regulators and manual on-off valves	0.24	<b>193786 LRVS-D</b>

# Pressure Regulators MS12N-LR – Inch Series



Replacement Parts

Ordering Data – Wearing Parts Kits			
Size	Description	Part No.	Type
MS12	Snap-ring, membrane, bellows, O-rings, screws, stem	673586	MS12-LR/LFR

- For spare parts go to: [www.festo.com/en/spare\\_parts\\_service](http://www.festo.com/en/spare_parts_service)

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Subject to change