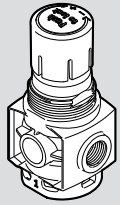


# MS2-LR-...-B

## Pressure regulator



# FESTO

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www.festo.com



Operating instruction

8189770  
2023-02b  
[8189772]

Translation of the original instructions

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### 1 Applicable documents

All available documents for the product → [www.festo.com/sp](http://www.festo.com/sp).

Document	Product	Contents
Assembly instructions	Mounting bracket MS2-WR	-

Tab. 1: Applicable documents

### 2 Safety

#### 2.1 Safety instructions

- Only use the product in its original condition without unauthorised modifications.
- Only use the product if it is in perfect technical condition.
- Observe the identifications on the product.
- Take into account the ambient conditions at the location of use.
- Before working on the product, switch off the compressed air supply and lock it to prevent it from being switched on again.

#### 2.2 Intended use

The pressure regulator regulates the compressed air in the downstream string at the specified outlet pressure. The function includes an integrated secondary exhaust and primary exhaust with backflow response.

### 3 Additional information

- Contact the regional Festo contact if you have technical problems → [www.festo.com](http://www.festo.com).
- Accessories → [www.festo.com/catalogue](http://www.festo.com/catalogue).

### 4 Product design

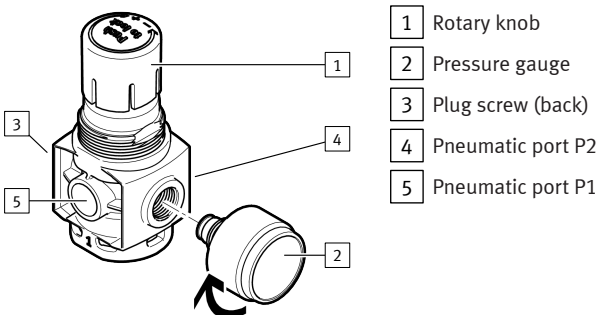


Fig. 1: Product design

### 5 Assembly

#### 5.1 Preparing assembly

For use with reduced particle emission:

- Remove soil from the product.

#### 5.2 Direct fastening

- Space required above the product: ≥ 20 mm
  - Space required under the product: ≥ 30 mm
  - Shut-off valves are installed in the compressed air supply line.
  - The maximum permissible wall thickness is 2.0 mm.
1. Slide the regulator head through the hole in the mounting surface.

2. Tighten the nut MS2-WRS → 3 Additional information. Tightening torque: 9 Nm ± 10%.

#### 5.3 Wall mounting

- Space required above the product: ≥ 20 mm
- Space required under the product: ≥ 30 mm
- Shut-off valves are installed in the compressed air supply line.
- Fasten the product to the mounting surface with the mounting accessories → 3 Additional information.

#### 5.4 Mounting pressure gauge

1. When using the Z variant:
  - Replace the plug screw and use the alternative port on the back of the product. Maximum tightening torque: 0.5 Nm
2. Turn the pressure gauge clockwise to the stop. The pressure gauge seal is pre-installed on the threaded connection journal.
3. Align scale. Unscrew pressure gauge anticlockwise and align the pressure gauge scale vertically (after screwing in to stop unscrew a maximum of 1 revolution).

### 6 Installation, pneumatic

1. Use fittings, seals and suitable tubing from the Festo catalogue → 3 Additional information.
2. Screw the fittings into the pneumatic ports.
3. Insert suitable tubing into the fitting to the stop.
  - Position tubing axial to the pneumatic ports.
  - Do not bend the tubing more than the minimum bending radius.

### 7 Commissioning

1. Pull the rotary knob to unlock it.
2. Turn the rotary knob completely in the - direction.
3. Pressurise the system slowly: turn the rotary knob in the + direction until the desired pressure is reached.
 

Maintain the permissible pressure regulation range → 10 Technical data. The input pressure p1 should be at least 0.05 MPa (0.5 bar; 7.3 psi) higher than the set output pressure p2 at all times.
4. Press the rotary knob to lock it.

### 8 Cleaning

- Clean the outside of the product as required with a soft cloth. Permissible cleaning agents:
  - Soap solution, maximum +60 °C
  - Petroleum ether, free of aromatic compounds

### 9 Fault clearance

Malfunction	Cause	Remedy
A low flow rate, the operating pressure is lost with air consumption.	The supply line is constricted.	- Check the line.
The pressure increases above the set working pressure.	The valve disc at the sealing seat is defective.	- Replace the product.
A continuous audible blowing noise at the rotary knob.	The valve seat is damaged.	- Replace the product.

Tab. 2: Fault clearance

### 10 Technical data

#### 10.1 Technical data, mechanical

MS2-LR-...-B	
Mounting position	Any
Vibration resistance in accordance with IEC 60068-2-6	Severity level 2
Shock resistance in accordance with IEC 60068-2-27	Severity level 2
Temperature of medium [°C]	-5 ... +50
Ambient temperature [°C]	-5 ... +50
Storage temperature [°C]	-5 ... +50

Tab. 3: Technical data, mechanical

#### Type of severity level (SL)

Vibration load					
Frequency range [Hz]		Acceleration [m/s <sup>2</sup> ]		Deflection [mm]	
SL1	SL2	SL1	SG2	SL1	SL2
2 ... 8	2 ... 8	-	-	±3.5	±3.5
8 ... 27	8 ... 27	10	10	-	-
27 ... 58	27 ... 60	-	-	±0.15	±0.35
58 ... 160	60 ... 160	20	50	-	-
160 ... 200	160 ... 200	10	10	-	-

Type of severity level (SL)					
Shock load					
Acceleration [m/s <sup>2</sup> ]		Duration [ms]		Shocks per direction	
SL1	SL2	SL1	SL2	SL1	SL2
±150	±300	11	11	5	5
Continuous shock load					
Acceleration [m/s <sup>2</sup> ]		Duration [ms]		Shocks per direction	
±150		6		1000	

Tab. 4: Type of severity level (SL)

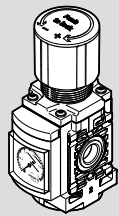
## 10.2 Technical data, pneumatic

MS2-LR-...-B		
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4]	
Information on the operating medium	Lubricated operation possible, in which case lubricated operation will always be required	
Pressure regulation range	[MPa]	0.05 ... 0.7
	[bar]	0.5 ... 7
	[psi]	7.25 ... 105
Operating pressure		
Pneumatic port M5	[MPa]	0.1 ... 1
	[bar]	1 ... 10
	[psi]	15 ... 145
Pneumatic port QS6	[MPa]	0.1 ... 0.8
	[bar]	1 ... 8
	[psi]	15 ... 116
Standard nominal flow rate		
Pneumatic port M5	[l/min]	170
Pneumatic port QS6	[l/min]	350

Tab. 5: Technical data, pneumatic

# MS4-LR-...-B

## Pressure regulator



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Operating instruction

8181881  
2023-02b  
[8181883]

Translation of the original instructions

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### 1 Applicable documents

All available documents for the product → [www.festo.com/sp](http://www.festo.com/sp).

Document	Product	Contents
Assembly instructions	Mounting bracket MS4/6-WR	-
Assembly instructions	Wall mounting kit MS...-WPE(-B)	-

Tab. 1: Applicable documents

### 2 Safety

#### 2.1 Safety instructions

- Only use the product in its original condition without unauthorised modifications.
- Only use the product if it is in perfect technical condition.
- Observe the identifications on the product.
- Take into account the ambient conditions at the location of use.
- Before working on the product, switch off the compressed air supply and lock it to prevent it from being switched on again.

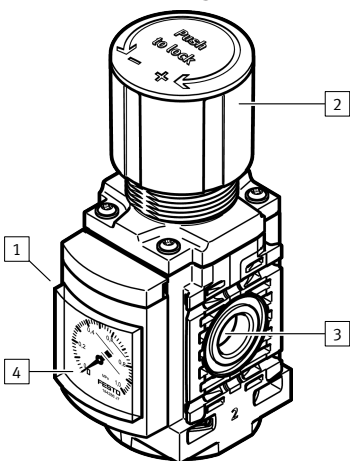
#### 2.2 Intended use

The pressure regulator regulates the compressed air in the downstream string at the specified outlet pressure. The function includes an integrated secondary exhaust and primary exhaust with backflow response.

### 3 Additional information

- Contact the regional Festo contact if you have technical problems → [www.festo.com](http://www.festo.com).
- Accessories → [www.festo.com/catalogue](http://www.festo.com/catalogue).

### 4 Product design



- 1 Pneumatic port P1
- 2 Rotary knob
- 3 Pneumatic port P2
- 4 Pressure gauge

Fig. 1: Product design

### 5 Assembly

#### 5.1 Preparing assembly

For use with reduced particle emission:

- Remove soil from the product.

### 5.2 Direct fastening

- Space required above the product:  $\geq 20$  mm
  - Space required under the product:  $\geq 30$  mm
  - Shut-off valves are installed in the compressed air supply line.
  - The maximum permissible wall thickness is 2.5 mm.
1. Pull the rotary knob upwards. If necessary, remove the padlock and push in the release lock.
  2. Slide the regulator head through the hole in the mounting surface.
  3. Tighten the hex nut MS4-WRS → 3 Additional information. Tightening torque:  $9 \text{ Nm} \pm 10\%$ .
  4. Press the rotary knob to lock it.

### 5.3 Wall mounting

- Space required above the product:  $\geq 20$  mm
- Space required under the product:  $\geq 30$  mm
- Shut-off valves are installed in the compressed air supply line.
- Fasten the product to the mounting surface with the mounting accessories → 3 Additional information.

### 6 Installation, pneumatic

1. Use fittings, seals and suitable tubing from the Festo catalogue → 3 Additional information.
2. Screw the fittings into the pneumatic ports.
3. Note the maximum screw-in depth of the connector thread. Screwing in deeper will reduce the flow rate and can damage the housing. Maximum screw-in depth: 8.5 mm
4. Insert suitable tubing into the fitting to the stop.
  - Position tubing axial to the pneumatic ports.
  - Do not bend the tubing more than the minimum bending radius.

### 7 Commissioning

1. Pull the rotary knob to unlock it.
2. Turn the rotary knob completely in the - direction.
3. Pressurise the system slowly: turn the rotary knob in the + direction until the desired pressure is reached. Maintain the permissible pressure regulation range → 10 Technical data. The input pressure  $p_1$  should be at least 0.05 MPa (0.5 bar; 7.3 psi) higher than the set output pressure  $p_2$  at all times.
4. Press the rotary knob to lock it.

### 8 Cleaning

- Clean the outside of the product as required with a soft cloth. Permissible cleaning agents:
  - Soap solution, maximum +60 °C
  - Petroleum ether, free of aromatic compounds

### 9 Fault clearance

Malfunction	Cause	Remedy
A low flow rate, the operating pressure is lost with air consumption.	The supply line is constricted.	- Check the line.
The pressure increases above the set working pressure.	The valve disc at the sealing seat is defective.	- Replace the product.
A continuous audible blowing noise at the rotary knob.	The valve seat is damaged.	- Replace the product.

Tab. 2: Fault clearance

### 10 Technical data

#### 10.1 Technical data, mechanical

MS4-LR-...-B	
Mounting position	Any
Vibration resistance in accordance with IEC 60068-2-6	Severity level 2
Shock resistance in accordance with IEC 60068-2-27	Severity level 2
Pneumatic port P1	G 1/4
Pneumatic port P2	
Temperature of medium [°C]	-5 ... +50
Ambient temperature [°C]	-5 ... +50
Storage temperature [°C]	-5 ... +50

Tab. 3: Technical data, mechanical

#### Type of severity level (SL)

Vibration load					
Frequency range [Hz]		Acceleration [ $\text{m/s}^2$ ]		Deflection [mm]	
SL1	SL2	SL1	SG2	SL1	SL2
2 ... 8	2 ... 8	-	-	$\pm 3.5$	$\pm 3.5$
8 ... 27	8 ... 27	10	10	-	-
27 ... 58	27 ... 60	-	-	$\pm 0.15$	$\pm 0.35$

Type of severity level (SL)					
58 ... 160	60 ... 160	20	50	–	–
160 ... 200	160 ... 200	10	10	–	–
Shock load					
Acceleration [m/s <sup>2</sup> ]		Duration [ms]		Shocks per direction	
SL1	SL2	SL1	SL2	SL1	SL2
±150	±300	11	11	5	5
Continuous shock load					
Acceleration [m/s <sup>2</sup> ]		Duration [ms]		Shocks per direction	
±150		6		1000	

Tab. 4: Type of severity level (SL)

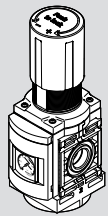
## 10.2 Technical data, pneumatic

MS4-LR-...-B		
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4]	
	Inert gases	
Information on the operating medium	Lubricated operation possible, in which case lubricated operation will always be required	
Pressure regulation range	[MPa]	0.03 ... 0.7
	[bar]	0.3 ... 7
	[psi]	4.35 ... 105
Operating pressure	[MPa]	0.1 ... 1
	[bar]	1 ... 10
	[psi]	15 ... 145
Standard nominal flow rate	[l/min]	1800

Tab. 5: Technical data, pneumatic

# MS6-LR-...-B

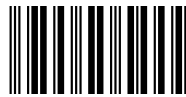
## Pressure regulator



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Operating instruction

8181899  
 2023-02b  
 [8181901]

Translation of the original instructions

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### 1 Applicable documents

All available documents for the product → [www.festo.com/sp](http://www.festo.com/sp).

Document	Product	Contents
Assembly instructions	Mounting bracket MS4/6-WR	-
Assembly instructions	Wall mounting kit MS...-WPE(-B)	-

Tab. 1: Applicable documents

### 2 Safety

#### 2.1 Safety instructions

- Only use the product in its original condition without unauthorised modifications.
- Only use the product if it is in perfect technical condition.
- Observe the identifications on the product.
- Take into account the ambient conditions at the location of use.
- Before working on the product, switch off the compressed air supply and lock it to prevent it from being switched on again.

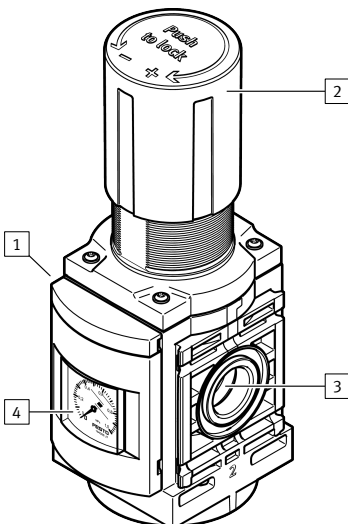
#### 2.2 Intended use

The pressure regulator regulates the compressed air in the downstream string at the specified outlet pressure. The function includes an integrated secondary exhaust and primary exhaust with backflow response.

### 3 Additional information

- Contact the regional Festo contact if you have technical problems → [www.festo.com](http://www.festo.com).
- Accessories → [www.festo.com/catalogue](http://www.festo.com/catalogue).

### 4 Product design



- 1 Pneumatic port P1
- 2 Rotary knob
- 3 Pneumatic port P2
- 4 Pressure gauge

Fig. 1: Product design

### 5 Assembly

#### 5.1 Preparing assembly

For use with reduced particle emission:

- Remove soil from the product.

#### 5.2 Direct fastening

- Space required above the product: ≥ 20 mm
  - Space required under the product: ≥ 30 mm
  - Shut-off valves are installed in the compressed air supply line.
  - The minimum permissible wall thickness is 3.5 mm.
1. Pull the rotary knob upwards. If necessary, remove the padlock and push in the release lock.
  2. Slide the regulator head through the hole in the mounting surface.
  3. Tighten the hex nut MS6-WRS → 3 Additional information. Tightening torque: 9 Nm ± 10%.
  4. Press the rotary knob to lock it.

#### 5.3 Wall mounting

- Space required above the product: ≥ 20 mm
- Space required under the product: ≥ 30 mm
- Shut-off valves are installed in the compressed air supply line.
- Fasten the product to the mounting surface with the mounting accessories → 3 Additional information.

### 6 Installation, pneumatic

1. Use fittings, seals and suitable tubing from the Festo catalogue → 3 Additional information.
2. Screw the fittings into the pneumatic ports.
3. Note the maximum screw-in depth of the connector thread. Screwing in deeper will reduce the flow rate and can damage the housing. Maximum screw-in depth: 13.5 mm
4. Insert suitable tubing into the fitting to the stop.
  - Position tubing axial to the pneumatic ports.
  - Do not bend the tubing more than the minimum bending radius.

### 7 Commissioning

1. Pull the rotary knob to unlock it.
2. Turn the rotary knob completely in the - direction.
3. Pressurise the system slowly: turn the rotary knob in the + direction until the desired pressure is reached.  
 Maintain the permissible pressure regulation range → 10 Technical data. The input pressure p1 should be at least 0.1 MPa (1 bar; 14.5 psi) higher than the set output pressure p2 at all times.
4. Press the rotary knob to lock it.

### 8 Cleaning

- Clean the outside of the product as required with a soft cloth.  
 Permissible cleaning agents:
  - Soap solution, maximum +60 °C
  - Petroleum ether, free of aromatic compounds

### 9 Fault clearance

Malfunction	Cause	Remedy
A low flow rate, the operating pressure is lost with air consumption.	The supply line is constricted.	- Check the line.
The pressure increases above the set working pressure.	The valve disc at the sealing seat is defective.	- Replace the product.
A continuous audible blowing noise at the rotary knob.	The valve seat is damaged.	- Replace the product.

Tab. 2: Fault clearance

### 10 Technical data

#### 10.1 Technical data, mechanical

MS6-LR-...-B	
Mounting position	Any
Vibration resistance in accordance with IEC 60068-2-6	Severity level 2
Shock resistance in accordance with IEC 60068-2-27	Severity level 2
Pneumatic port P1	G 1/2
Pneumatic port P2	
Temperature of medium [°C]	-5 ... +50
Ambient temperature [°C]	-5 ... +50
Storage temperature [°C]	-5 ... +50

Tab. 3: Technical data, mechanical

**Type of severity level (SL)**

Vibration load					
Frequency range [Hz]		Acceleration [m/s <sup>2</sup> ]		Deflection [mm]	
SL1	SL2	SL1	SG2	SL1	SL2
2 ... 8	2 ... 8	–	–	±3.5	±3.5
8 ... 27	8 ... 27	10	10	–	–
27 ... 58	27 ... 60	–	–	±0.15	±0.35
58 ... 160	60 ... 160	20	50	–	–
160 ... 200	160 ... 200	10	10	–	–
Shock load					
Acceleration [m/s <sup>2</sup> ]		Duration [ms]		Shocks per direction	
SL1	SL2	SL1	SL2	SL1	SL2
±150	±300	11	11	5	5
Continuous shock load					
Acceleration [m/s <sup>2</sup> ]		Duration [ms]		Shocks per direction	
±150		6		1000	

Tab. 4: Type of severity level (SL)

**10.2 Technical data, pneumatic**

<b>MS6-LR-...-B</b>		
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4]	
	Inert gases	
Information on the operating medium	Lubricated operation possible, in which case lubricated operation will always be required	
Pressure regulation range	[MPa]	0.03 ... 0.7
	[bar]	0.3 ... 7
	[psi]	4.35 ... 105
Operating pressure	[MPa]	0.1 ... 1
	[bar]	1 ... 10
	[psi]	15 ... 145
Standard nominal flow rate	[l/min]	6000

Tab. 5: Technical data, pneumatic