

Precision pressure regulators LRP/LRPS

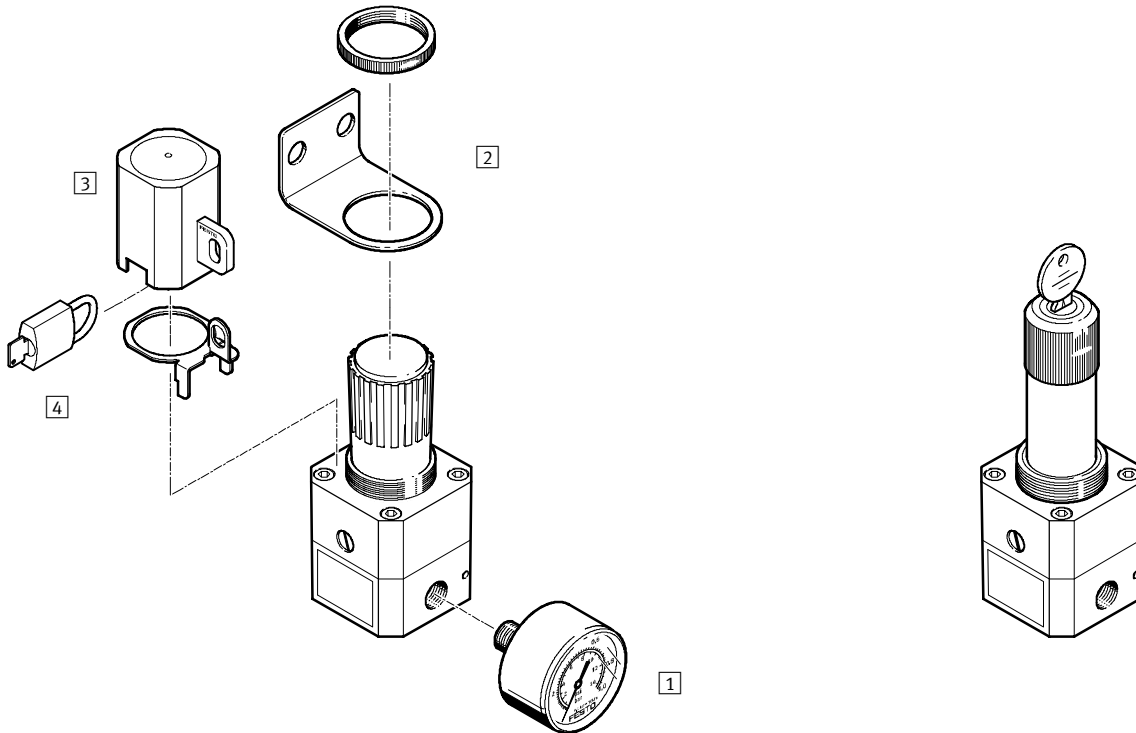
Peripherals overview and type codes



Peripherals overview

Precision pressure regulator LRP

Precision pressure regulator LRPS, lockable



Individual units
Precision pressure regulators

4.2

Mounting attachments and accessories	Brief description	→ Page
1 Pressure gauge MA	The pressure gauges measure pressure in bar and the psi display range or in MPa	3 / 4.8-9
2 Mounting bracket HR-1/4-P	For wall mounting	3 / 4.2-5
3 Regulator lock with lock plate LRVS-LRP-1/4	Prevents unintentional, and in conjunction with an LRVS padlock, unauthorised adjustment of the rotary knob	3 / 4.2-5
4 Padlock LRVS-D	Accessory for LRVS	3 / 4.2-5

Type codes

LRP — 1/4 — 0.7

Service function

LRP	Precision pressure regulator
LRPS	Precision pressure regulator, lockable

Pneumatic connection

1/4	Thread G1/4
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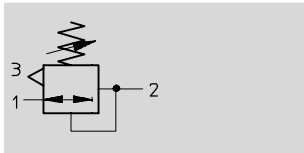
Pressure regulation range

0.7	0.05 ... 0.7 bar
2.5	0.05 ... 2.5 bar
4	0.05 ... 4 bar
10	0.1 ... 10 bar

Precision pressure regulators LRP/LRPS

Technical data

Function



- Flow rate
800 ... 2,300 l/min
- Temperature range
-10 ... +60 °C
- Input pressure
1 ... 12 bar



The precision pressure regulator controls operating pressure (secondary side) with a diaphragm pilot control, which acts upon the main seat and thus achieves improved regulating characteristics.

- Precision pressure adjustment possible both in static and dynamic applications
- Pressure hysteresis of $\leq 0.02\text{ bar}$ for flow rate characteristic curve
- Good response characteristics during rapid modification of input pressure and flow rate
- Input pressure fluctuations are almost entirely compensated

General technical data		
Type	Precision pressure regulator LRP	Precision pressure regulator, lockable LRPS
Pneumatic connection	G $\frac{1}{4}$	
Operating medium	Filtered compressed air, lubricated or unlubricated, grade of filtration $\leq 40\ \mu\text{m}$	
Design	Pilot-actuated precision diaphragm regulating valve	
Type of mounting	Via accessories	
	Panel mounting	
	In-line installation	
Mounting position	Any	
Max. hysteresis [mbar]	20	
Input pressure [bar]	1 ... 12	
Pressure regulation range [bar]		
0.7	0.05 ... 0.7	
2.5	0.05 ... 2.5	
4	0.05 ... 4	
10	0.1 ... 10	

Standard nominal flow rate ¹⁾ qnN [l/min]	
Pressure regulation range	LRP/LRPS
0.7	800
2.5	1,800
4	2,000
10	2,300

1) measured at p₁ = 12 bar, Δp₂ = 100 mbar

Ambient conditions		
Ambient temperature [°C]	-10 ... +60	
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 surrounding industrial atmosphere or media such as cooling or lubricating agents.

Precision pressure regulators LRP/LRPS

Technical data



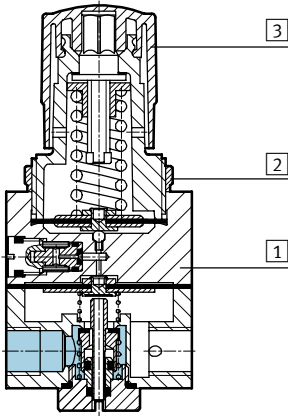
Individual units
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Weights [g]		
	LRP	LRPS
Precision pressure regulator	380	470

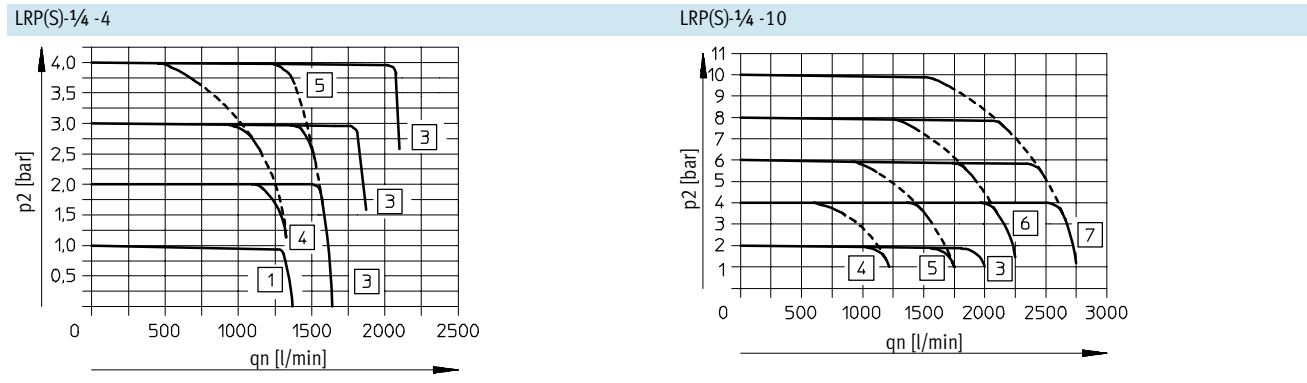
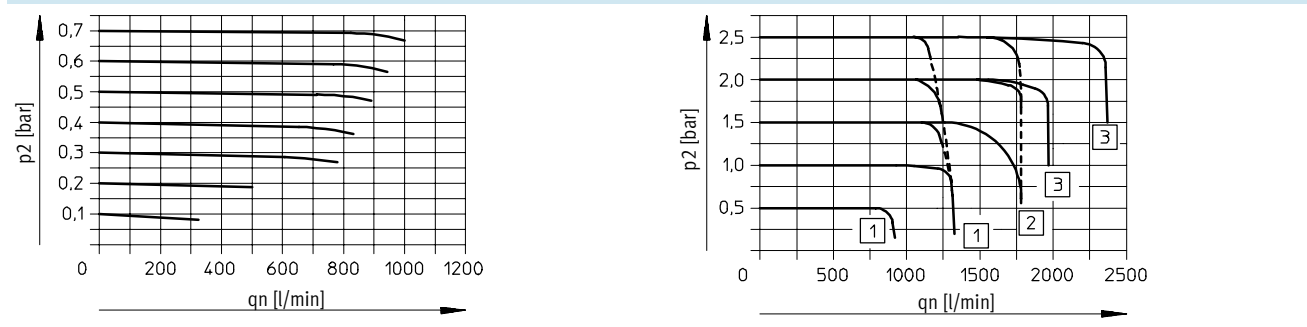
Materials

Sectional view



Precision pressure regulator		
1	Housing	Aluminium
2	Knurled nut	Polycarbonate/polyamide
3	Rotary knob	LRP: Polyacetate LRPS: Aluminium
-	Seals	Nitrile rubber

Standard flow rate q_n as a function of the output pressure p_2



- 1 Input pressure $p_1 = 5 \dots 12$ bar
- 2 Input pressure $p_1 = 7 \dots 12$ bar
- 3 Input pressure $p_1 = 10 \dots 12$ bar
- 4 Input pressure $p_1 = 5$ bar

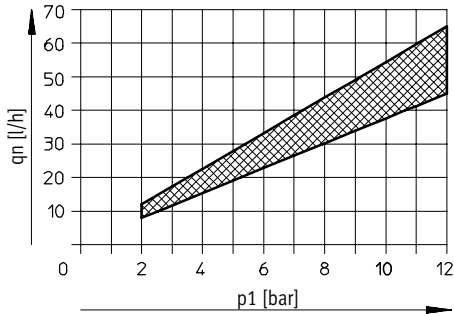
- 5 Input pressure $p_1 = 7$ bar
- 6 Input pressure $p_1 = 10$ bar
- 7 Input pressure $p_1 = 12$ bar

Precision pressure regulators LRP/LRPS

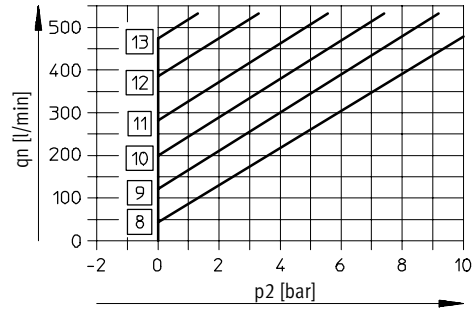
Technical data



Internal air consumption q_n as a function of supply pressure p_1



Standard flow rate q_n as a function of output excess pressure p_2



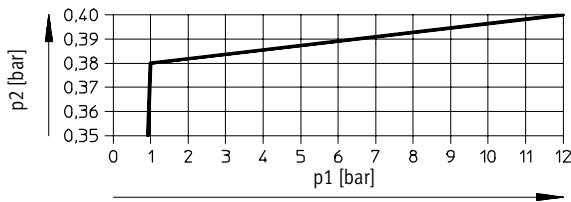
- 8 Output excess pressure $p_2 = 0.7$ bar
- 9 Output excess pressure $p_2 = 2$ bar
- 10 Output excess pressure $p_2 = 4$ bar

- 11 Output excess pressure $p_2 = 6$ bar
- 12 Output excess pressure $p_2 = 8$ bar
- 13 Output excess pressure $p_2 = 10$ bar

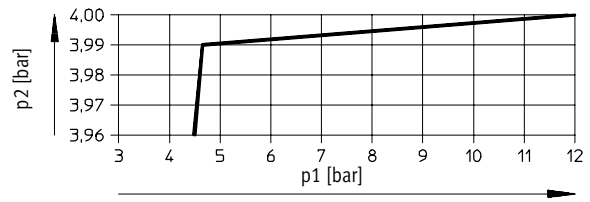
Primary pressure $p_1 = 10$ bar

Output pressure p_2 as a function of input pressure p_1

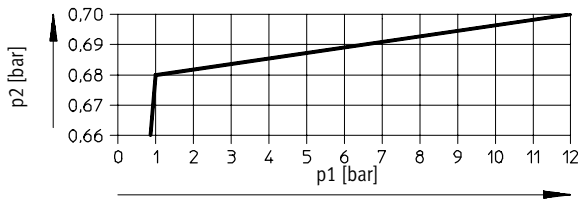
Primary pressure dependence $q_n = 35$ l/min



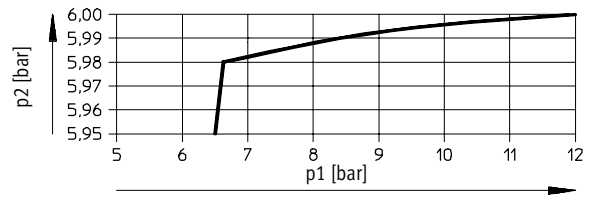
Primary pressure dependence $q_n = 220$ l/min



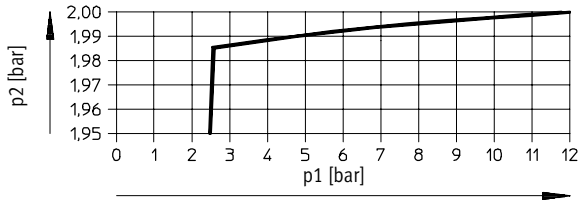
Primary pressure dependence $q_n = 55$ l/min



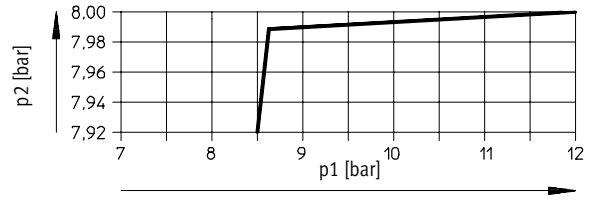
Primary pressure dependence $q_n = 340$ l/min



Primary pressure dependence $q_n = 120$ l/min



Primary pressure dependence $q_n = 420$ l/min



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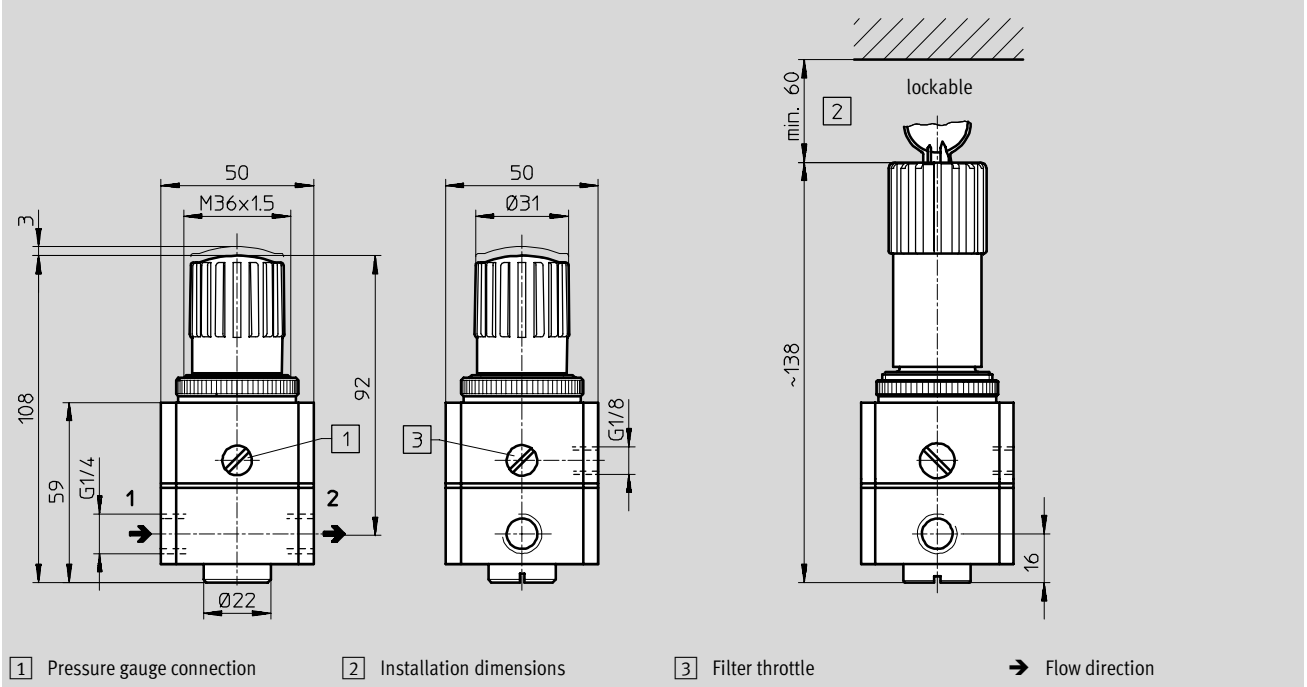
Technical data

FESTO

Individual units
Precision pressure regulators

4.2

Dimensions Download CAD data → www.festo.com/en/engineering



Ordering data				
Pressure regulation range [bar]	Precision pressure regulator LRP		Precision pressure regulator, lockable LRPS	
	Part No.	Type	Part No.	Type
0.05 ... 0.7	159 500	LRP-1/4-0,7	194 690	LRPS-1/4-0,7
0.05 ... 2.5	162 834	LRP-1/4-2,5	194 691	LRPS-1/4-2,5
0.05 ... 4	159 501	LRP-1/4-4	194 692	LRPS-1/4-4
0.1 ... 10	159 502	LRP-1/4-10	194 693	LRPS-1/4-10

Core Range

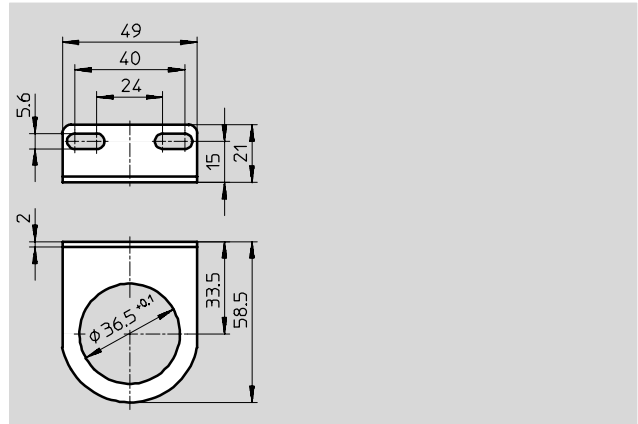
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Accessories

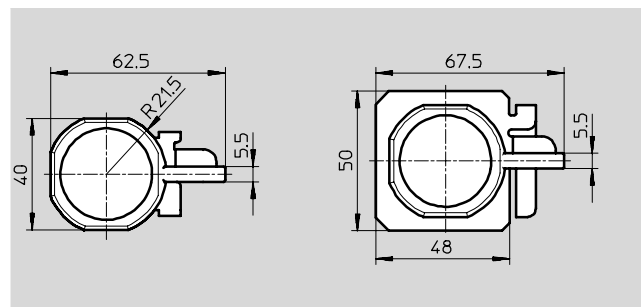
Mounting bracket HR for wall mounting

Material:
Galvanised steel



Ordering data		Part No.	Type
Mounting bracket		159 503	HR-1/4-P

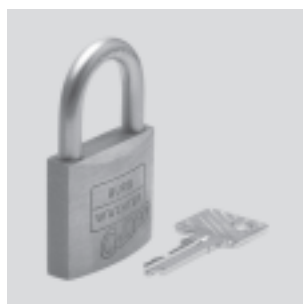
Regulator lock LRVS-LRP



Ordering data			
	Connection	Weight [g]	Part No. Type
Regulator lock	G1/4	36	193 785 LRVS-LRP-1/4

Padlock LRVS-D

Material:
Housing: Brass



Ordering data			
	Weight [g]	Part No.	Type
Padlock	120	193 786	LRVS-D

Core Range