

Precision pressure regulators LRP/LRPS



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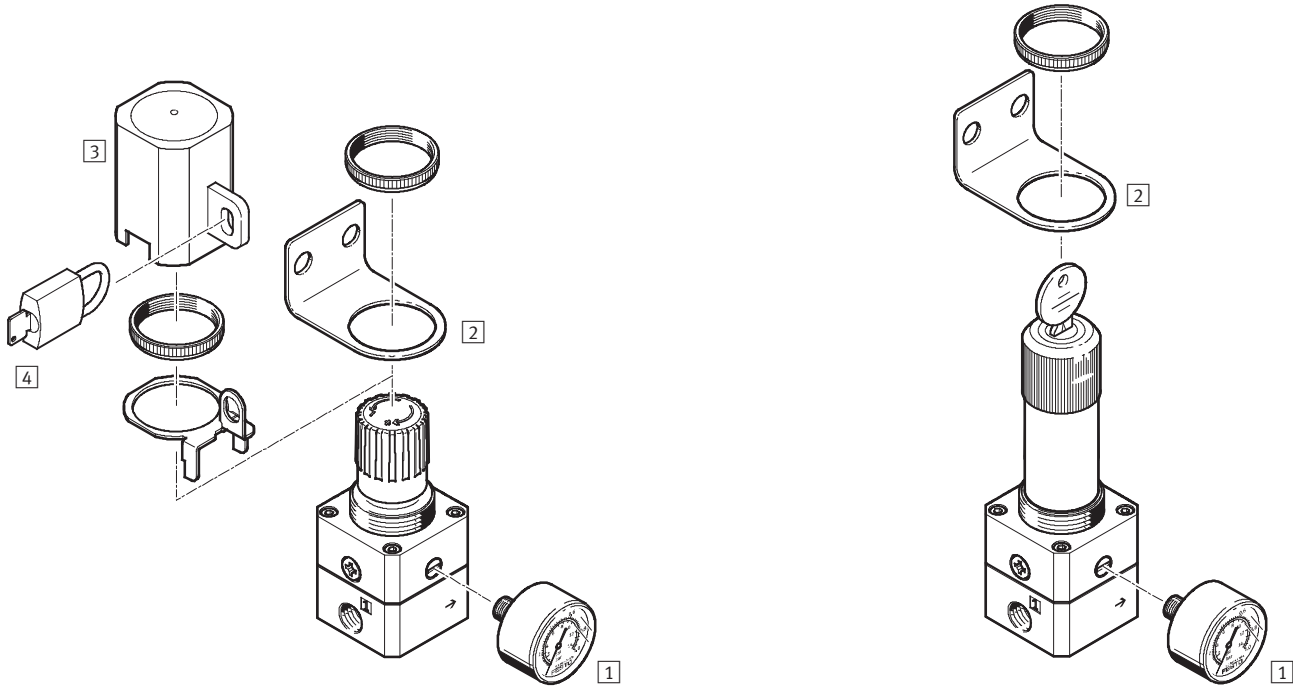
Peripherals overview and type codes

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Peripherals overview

Precision pressure regulator LRP

Lockable precision pressure regulator LRPS

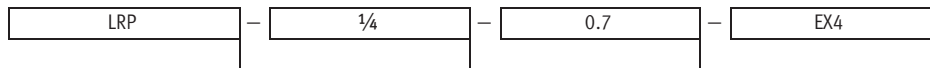


Mounting attachments and accessories

→ Page/Internet

		→ Page/Internet
1	Precision pressure gauge MAP	map
2	Mounting bracket HR-1/4-P	7
3	Regulator lock with lock plate LRVS-LRP-1/4	7
4	Padlock LRVS-D	7

Type codes



Service function

LRP	Precision pressure regulator
LRPS	Lockable precision pressure regulator

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

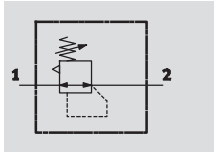
Explosion protection (only for LRP)

	None
EX4	For use in explosive areas in zones 1, 2 as well as 21, 22

Precision pressure regulators LRP/LRPS

Technical data

Function



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

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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 < 0.02 bar for flow rate characteristic curve
- Good response characteristics during rapid alteration of supply pressure and flow rate
- Supply pressure fluctuations are almost entirely compensated
- Product variants LRP-...-EX4 can be used in zones 1 and 2 of explosive gas atmospheres and in zones 21 and 22 of explosive dust atmospheres

General technical data				
LRP/LRPS-1/4-...	0.7	2.5	4	10
Pneumatic connection 1, 2	G1/4			
Constructional design	Pilot-actuated precision diaphragm regulating valve			
Regulating function	Output pressure constant, with secondary venting			
Type of mounting	Via accessories			
	Front panel mounting			
	In-line installation			
Mounting position	Any			
Actuator lock	Rotary knob with detent			
	Rotary knob with integrated lock			
Pressure regulation range [bar]	0.05 ... 0.7	0.05 ... 2.5	0.05 ... 4	0.1 ... 10
Max. hysteresis [bar]	0.02			
Pressure indicator	G1/8 prepared			

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

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

Operating and environmental conditions	
Operating pressure [bar]	1 ... 12
Operating medium	Compressed air in accordance with ISO 8573-1:2010 [7:4:4]
	Inert gases
Note on operating/pilot medium	Operation with lubricated medium not possible
Ambient temperature [°C]	-10 ... +60
Temperature of medium [°C]	-10 ... +60
Corrosion resistance class CRC ¹⁾	2

1) Corrosion resistance class 2 to Festo standard 940 070
Components subject to moderate corrosion stress. 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

Precision pressure regulators LRP/LRPS

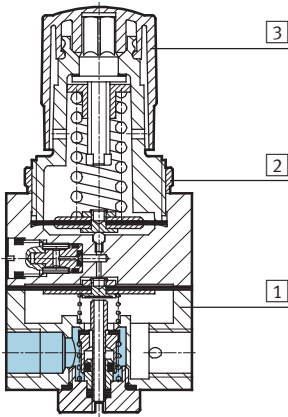
Technical data

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Weight [g]	LRP	LRP-...-EX4	LRPS
Type	LRP	LRP-...-EX4	LRPS
Precision pressure regulator	310	315	410

Materials

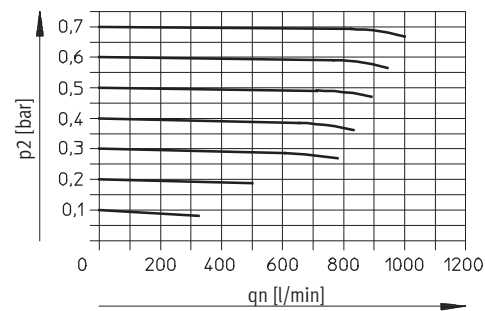
Sectional view



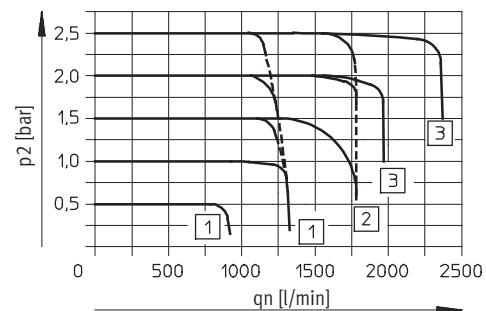
Precision pressure regulator		
1	Housing	Die-cast aluminium
2	Knurled nut	Aluminium
3	Rotary knob	PA
-	Seals	NBR
Note on materials		RoHS-compliant

Standard flow rate q_n as a function of output pressure p_2

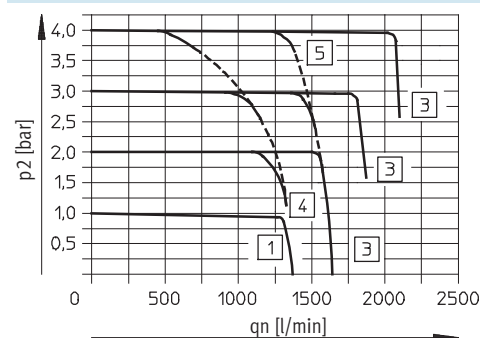
LRP/LRPS-1/4-0,7



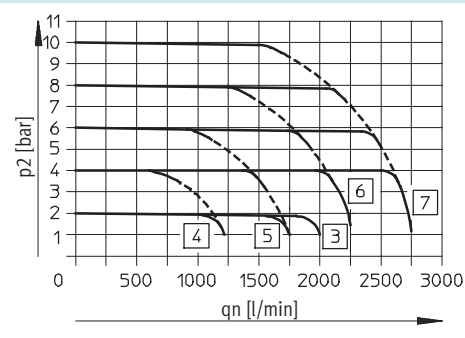
LRP/LRPS-1/4-2,5



LRP/LRPS-1/4-4



LRP/LRPS-1/4-10



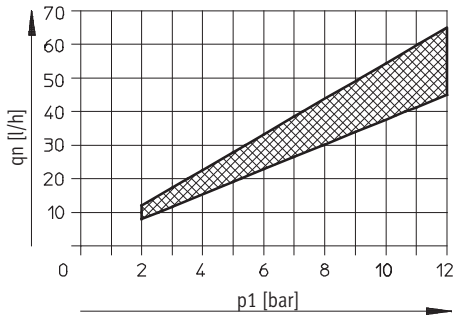
- 1 Supply pressure $p_1 = 5 \dots 12$ bar
- 2 Supply pressure $p_1 = 7 \dots 12$ bar
- 3 Supply pressure $p_1 = 10 \dots 12$ bar
- 4 Supply pressure $p_1 = 5$ bar

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

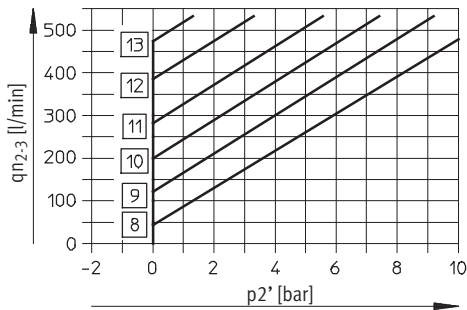
Precision pressure regulators LRP/LRPS

Technical data

Internal air consumption q_n as a function of supply pressure p_1



Standard flow rate q_{n2-3} of the secondary exhaust as a factor of the excess output pressure p_2'

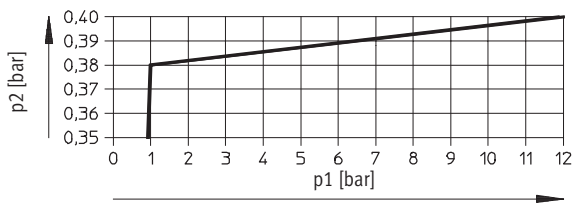


- 8 Output pressure $p_2 = 0.7$ bar
- 9 Output pressure $p_2 = 2$ bar
- 10 Output pressure $p_2 = 4$ bar
- 11 Output pressure $p_2 = 6$ bar
- 12 Output pressure $p_2 = 8$ bar
- 13 Output pressure $p_2 = 10$ bar

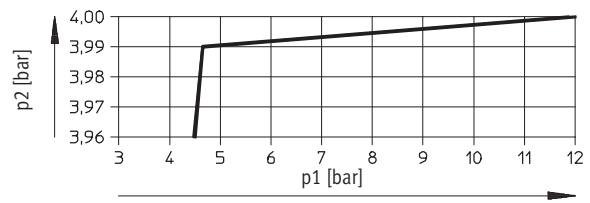
Supply pressure $p_1 = 5 \dots 12$ bar

Output pressure p_2 as a function of supply pressure p_1

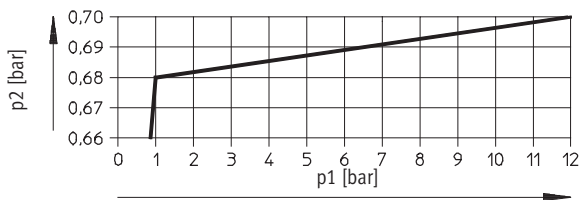
Primary pressure dependence $q_n = 35$ l/min



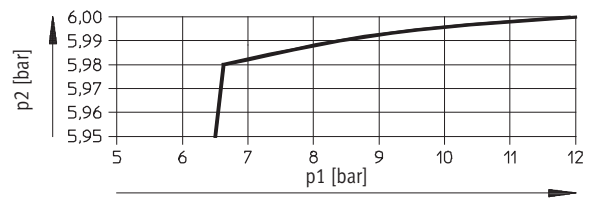
Primary pressure dependence $q_n = 220$ l/min



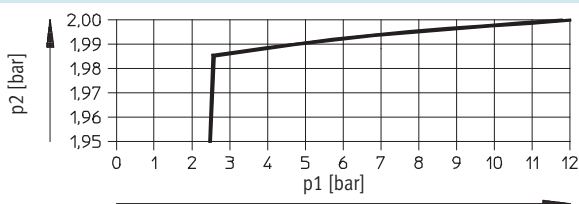
Primary pressure dependence $q_n = 55$ l/min



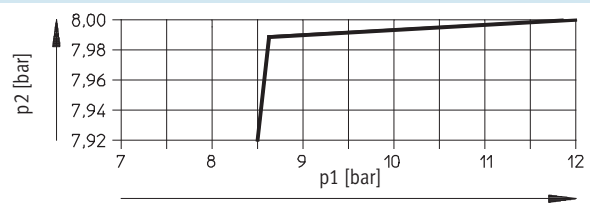
Primary pressure dependence $q_n = 340$ l/min



Primary pressure dependence $q_n = 120$ l/min



Primary pressure dependence $q_n = 420$ l/min



Precision pressure regulators LRP/LRPS

Technical data

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

1 Pressure gauge connection
2 Installation dimensions
3 Filter throttle
4 Earthing screw (only with LRP-...-EX4)

→ Flow direction

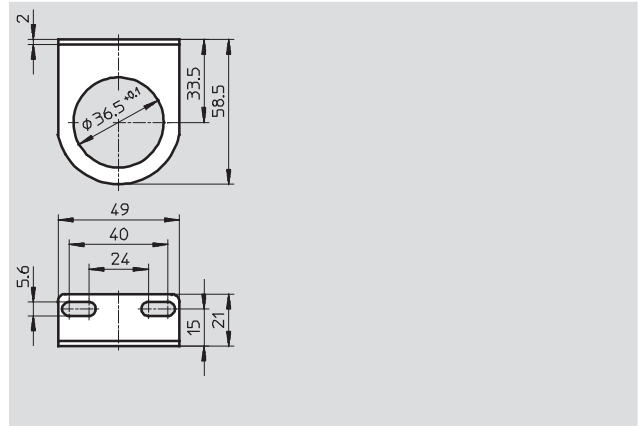
Ordering data				
Pressure regulation range [bar]	Precision pressure regulator LRP		Lockable precision pressure regulator LRPS	
	Part No.	Type	Part No.	Type
0.05 ... 0.7	159500	LRP-1/4-0,7	194690	LRPS-1/4-0,7
0.05 ... 2.5	162834	LRP-1/4-2,5	194691	LRPS-1/4-2,5
0.05 ... 4	159501	LRP-1/4-4	194692	LRPS-1/4-4
0.1 ... 10	159502	LRP-1/4-10	194693	LRPS-1/4-10
For use in explosive areas in zones 1, 2 as well as 21, 22				
0.05 ... 0.7	549918	LRP-1/4-0,7-EX4	-	-
0.05 ... 2.5	549919	LRP-1/4-2,5-EX4	-	-
0.05 ... 4	549920	LRP-1/4-4-EX4	-	-
0.1 ... 10	549921	LRP-1/4-10-EX4	-	-

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Accessories

Mounting bracket HR for wall mounting

Material:
Galvanised steel
Free of copper and PTFE



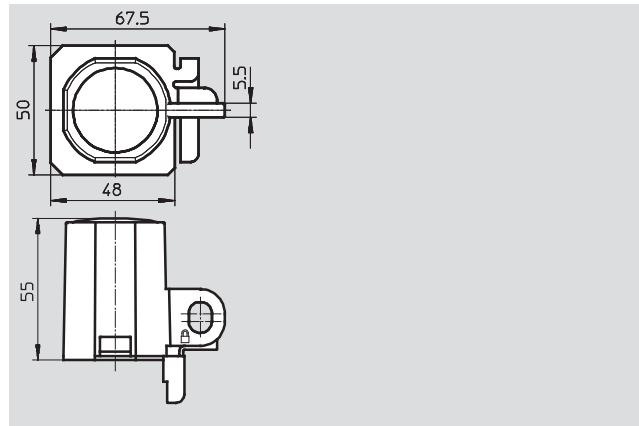
Ordering data		
CRC ¹⁾	Part No.	Type
2	159503	HR-¼-P

1) Corrosion resistance class 2 to Festo standard 940 070
Components subject to moderate corrosion stress. 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.

Regulator lock LRVS-LRP

Material:
Cap: Polyacetate
Lock plate: Steel
Knurled nut: Aluminium
Free of copper and PTFE

Ambient temperature:
-20 ... +60 °C



Ordering data		
Weight [g]	Part No.	Type
36	193785	LRVS-LRP-¼

Padlock LRVS-D

Material:
Housing: Brass

Ambient temperature:
-20 ... +60 °C



Ordering data		
Weight [g]	Part No.	Type
120	193786	LRVS-D

Product Range and Company Overview

A Complete Suite of Automation Services

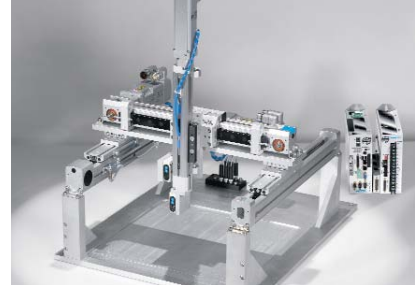
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