

High-Sensitivity, Spring-Loaded Pressure-Reducing Regulators—LRS(H)4 Series

Features

- Diaphragm sensing
- Large diaphragm for higher accuracy
- Diaphragm materials: PTFE and 316L SS for most pressure control ranges
- Bottom mounting
- Low torque minimizes stem wear
- Nonventing
- Cartridge poppet assembly in LRS4 for ease of service

- Panel mounting—no disassembly required

Options

- External feedback
- Filter, 25 µm
- NACE MR0175/ISO 15156-compliant models
- Self-venting
- Special cleaning to ASTM G93 Level C



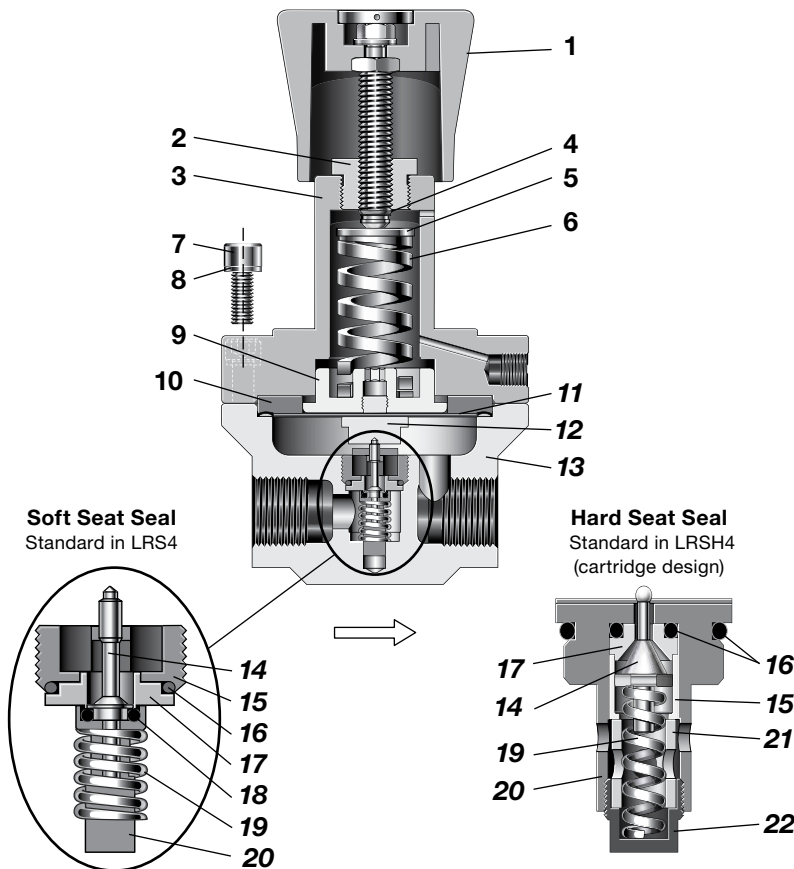
Technical Data

Series	Maximum Inlet Pressure psig (bar)	Maximum Outlet Control Pressure psig (bar)	Sensing Type	Temperature Range °F (°C)	Flow Coefficient (C _v)	Seat Diameter in. (mm)	Inlet and Outlet Connections	Gauge / Vent Connections	Weight lb (kg)
LRS4	507 (35.0)	290 (20.0)	Diaphragm	-4 to 176 (-20 to 80) See Pressure-Temperature Ratings , page 8.	0.73	0.23 (6.0)	1/2 in. NPT	Gauge: 1/4 in. NPT Vent: 1/8 in. NPT	5.7 (2.6)
LRS4H	5800 (400)				0.10	0.087 (2.2)			

See pages 22 to 23 for flow data.

Materials of Construction

LRS Series Regulator with Soft Seat Seal



Component	Material / Specification
1 Knob assembly with adjusting screw, nuts	Red ABS with A2-70
2 Spring housing cover	431 SS / A276
3 Spring housing	316L SS / A479 or EN10088
4 C-ring	A2
5 Spring guide	316L SS / A479 or EN10088
6 Set spring	CR50V4
7 Cap screw	A4-80
8 Washer	A2
9 Bottom spring guide	316L SS / A479 or EN10088
10 Clamp ring	
11 Diaphragm	PTFE or 316L SS
12 Diaphragm screw	316L SS / A479 or EN10088
13 Body	
14 Poppet	
15 Seat retainer	
16 O-ring	EPDM, FKM, or FFKM
17 Seat	LRS 316L SS / A479 or EN10088
	LRS4H PCTFE or PEEK
18 Seat seal (LRS only)	EPDM, FKM, or FFKM
19 Poppet spring	302 SS / A240
20 Poppet housing	316L SS / A479 or EN10088
21 Fluid case	
22 Cartridge plug	

Wetted lubricants: *Silicone-based, synthetic hydrocarbon-based*

Wetted components listed in *italics*. Gauge plugs (not shown): 431 SS / A276.

Flow Data

The graphs illustrate the change or “droop” in outlet pressures as the flow rate increases. For more flow curve information, contact your authorized Swagelok representative.

LRS4 Series

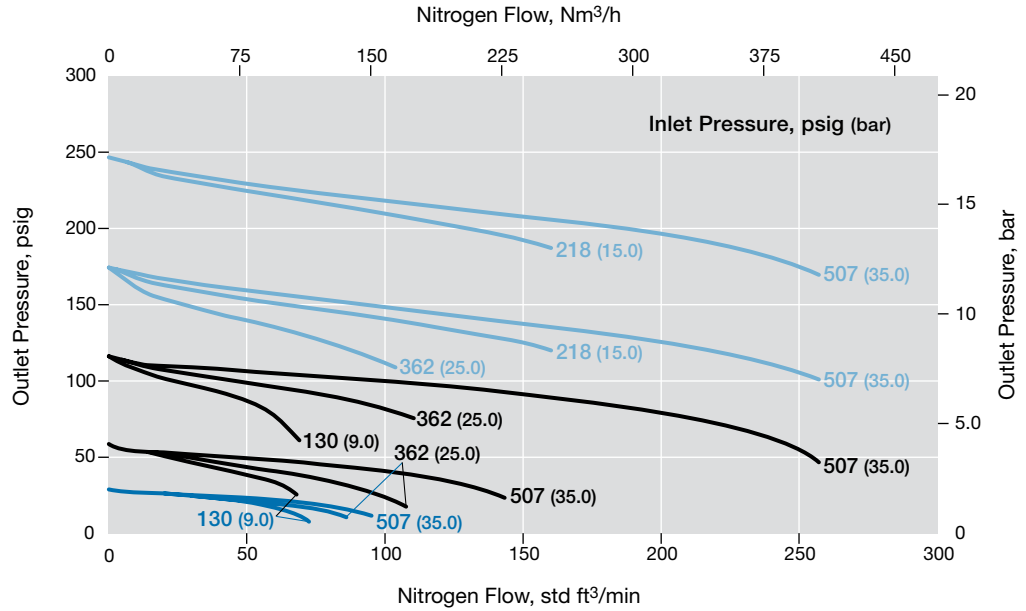
Flow Coefficient: 0.73

Maximum Inlet Pressure: LRS4—507 psig (35.0 bar)

Outlet Pressure Control Range: 0 to 290 psig (0 to 20.0 bar)

Pressure Control Range

- 0 to 43 psig (0 to 3.0 bar)
- 0 to 145 psig (0 to 10.0 bar)
- 0 to 290 psig (0 to 20.0 bar)



LRS4 Series with Optional External Feedback

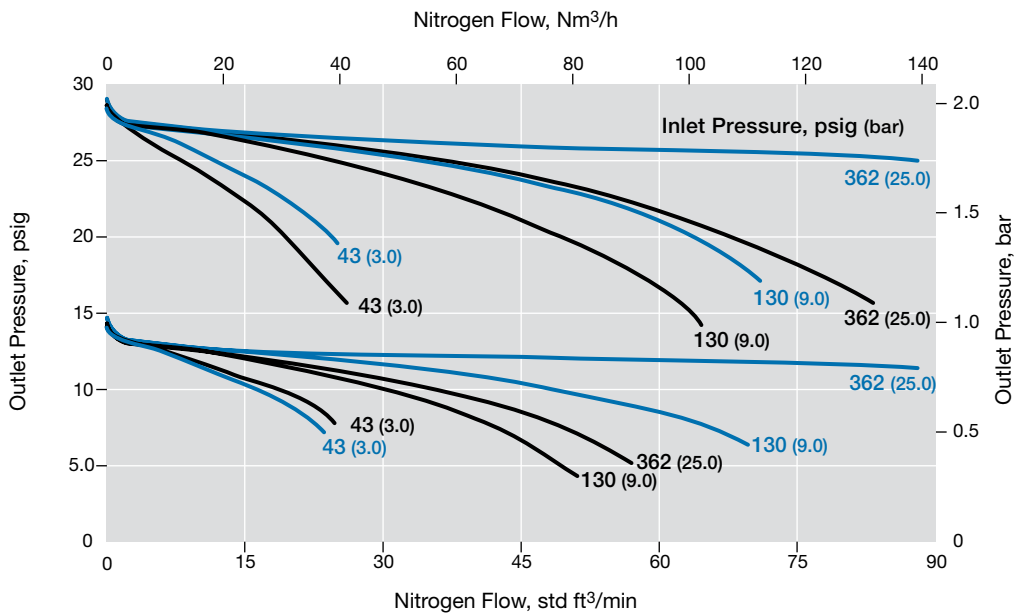
Flow Coefficient: 0.73

Maximum Inlet Pressure: LRS4—507 psig (35.0 bar)

Outlet Pressure Control Range: 0 to 290 psig (0 to 20.0 bar)

Comparative Flow

- External Feedback
- Standard



Flow Data

The graphs illustrate the change or “droop” in outlet pressures as the flow rate increases. For more flow curve information, contact your authorized Swagelok representative.

LRS4 Series with Optional 316L SS Diaphragm

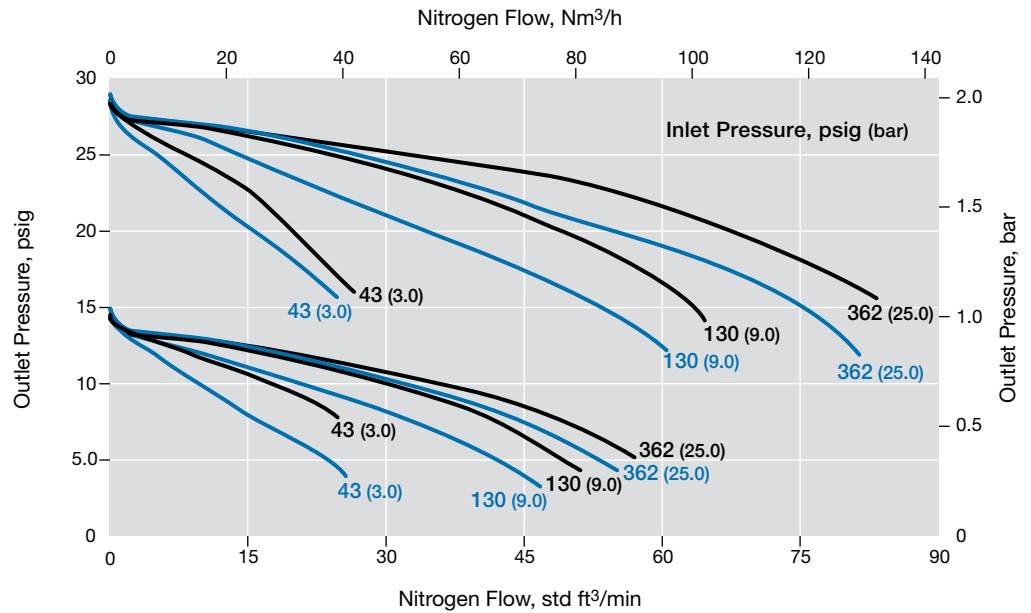
Flow Coefficient: 0.73

Maximum Inlet Pressure: LRS4—507 psig (35.0 bar)

Outlet Pressure Control Range: 0 to 290 psig (0 to 20.0 bar)

Comparative Flow

- 316L SS Diaphragm
- Standard



LRS4 Series

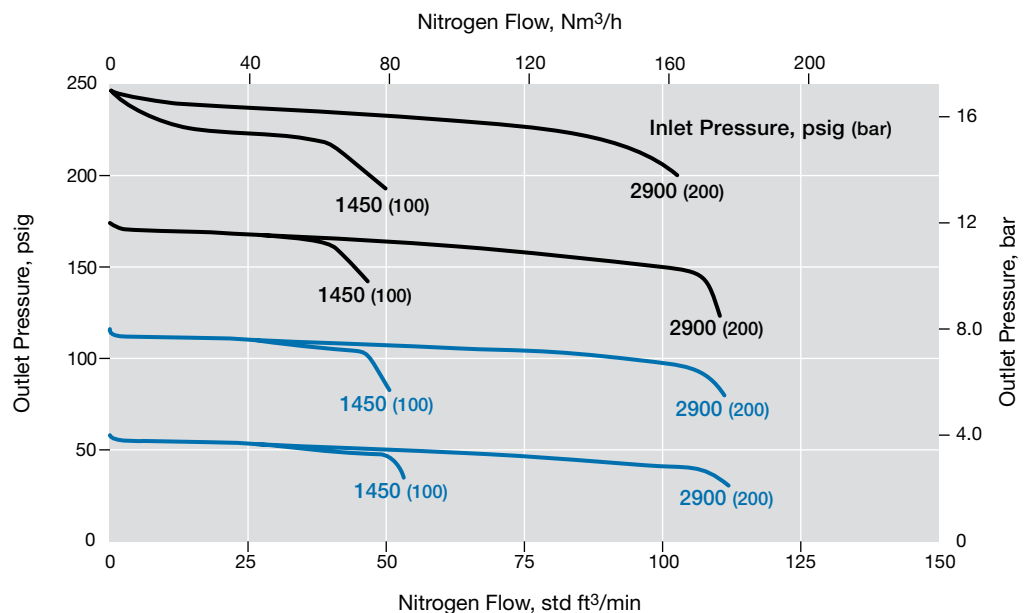
Flow Coefficient: 0.10

Maximum Inlet Pressure: LRS4—5800 psig (400 bar)

Outlet Pressure Control Range: 0 to 290 psig (0 to 20.0 bar)

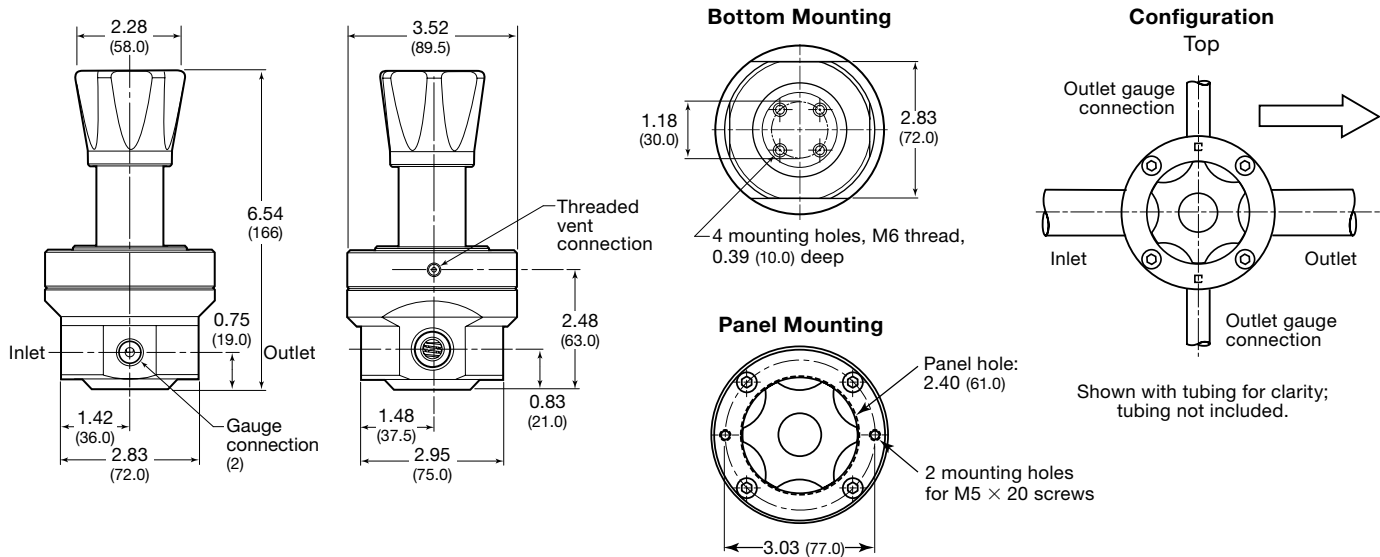
Pressure Control Range

- 0 to 130 psig (0 to 9.0 bar)
- 0 to 290 psig (0 to 20.0 bar)



Dimensions

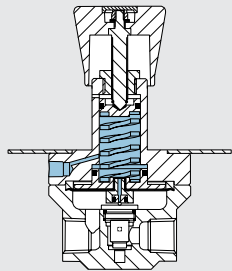
Dimensions, in inches (millimeters), are for reference only and are subject to change.



Options

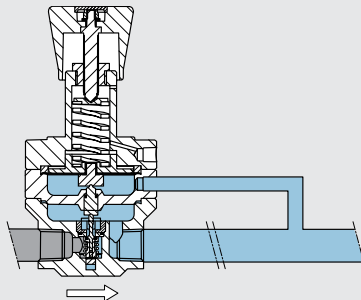
Self Venting

Threaded vent connection is below the panel in self-venting version.



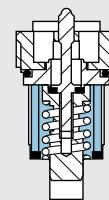
External Feedback

Compensates for pressure loss (droop).

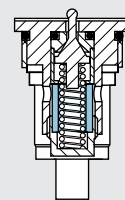


25 µm Filter

Reduces potential seat damage; will reduce flow.



LRS4 series cartridge



LRSH4 series cartridge

Ordering Information

Build an LRS4 or LRSH4 series regulator ordering number by combining the designators in the sequence shown below.

1 **2** **3** **4** **5** **6** **7** **8**
LRS N4 - 02 - 1 - V T V - S

1 Series

LRS = 507 psig (35 bar) maximum inlet pressure

LRSH = 5800 psig (400 bar) maximum inlet pressure

2 Inlet / Outlet

N4 = 1/2 in. female NPT

3 Body Material

02 = 316L SS

4 Pressure Control Range

1 = 0 to 43 psig (0 to 3.0 bar)

2 = 0 to 130 psig (0 to 9.0 bar)

3 = 0 to 290 psig (0 to 20.0 bar)

5 Seal Material

V = Fluorocarbon FKM

N = Nitrile

E = EPDM

6 Diaphragm

T = PTFE

M = 316L SS: only for 0 to 43 psig (0 to 3.0 bar) and 0 to 130 psig (0 to 9.0 bar) pressure control ranges

7 Seat Seal Material

LRS series (seat seal)

V = Fluorocarbon FKM

E = EPDM

F = FFKM

LRSH series (seat)

K = PCTFE

P = PEEK

8 Options

EF = External feedback

F = Filter, 25 µm

N = NACE MR0175/ISO 15156

S = Self venting

G93 = ASTM G93 Level C-cleaned