

PR-1 Series

Adjustable Pressure Reducing Regulator



The PR-1 Series is a versatile pressure reducing regulator designed to fulfill a wide range of needs in instrumentation sample systems and other applications such as semiconductor processing gases. Many features of the PR-1 make it ideal for a wide range of applications controlling pressures at low to moderate flows in gas or liquid service. 316L body material is used to facilitate welded connections. Stainless steel caps and adjusting screws prevent atmospheric corrosion and maintain appearance. Enhanced internal body surface finish of better than 25 Ra plus electropolishing allows easier cleaning and potentially less particle contamination in the flow stream.

Five different seat materials, three alternate orifice sizes and seven pressure control ranges with stainless diaphragms offer the user a wide spectrum of capabilities for pressure control with inlet pressures up to 6000 psig and standard operating temperatures up to 500° F (260° C).

Features & Specifications

- Gas or liquid service
- 316L stainless steel, Inconel®, PTFE, and Tefzel® (or optional main seat material choice) only in flow stream
- Electropolished 316L body with better than 25 Ra diaphragm cavity surface finish
- Stainless steel cap with SS adjusting screw
- Inlet pressures of up to 6000 psi
- Adjustable outlet pressure ranges of 0–10, 0–25, 0–50, 0–100, 0–250, 0–500 and 0–750 psig
- Operating temperatures of –40° F up to +500° F (–40° C up to +260° C)
- 20 micron filters
- Bubble-tight shutoff under most conditions
- Cv flow coefficients 0.025, 0.06, 0.20, and 0.50 (0.06 standard)

Options

- Wetted materials of construction: Monel®, Hastelloy®, and titanium
- Diaphragm attached poppet
- Special fittings
- Diaphragm assist spring for vacuum purging
- Panel mount (1 $\frac{3}{8}$ " mounting hole)
- Relief valves
- Special diaphragm assembly for water service
- SS inlet pressure gauges
- SS outlet pressure gauges
- Base-mounting brackets
- Captured vent
- Self-relieving

Circle Seal Controls

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pressure regulators

PR-1 Series

How to Order

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REPAIR KIT

BODY MATERIALS

- 1 316L stainless steel
- 4 Monel®
- 5 Hastelloy® B
- 6 Hastelloy® C
- 7 Titanium
- 0 Inconel® 625

PORT CONFIGURATION

- A Standard (one inlet & one outlet port)
- For more port configurations, see page 35.

PROCESS PORT TYPES

- 0 1/8" FNPT
- 1 1/4" FNPT
- 3 1/4" sch 80 pipe (1/4" FNPT gauge ports)
- 4 3/8" FNPT
- 8 SAE J514 (1/4" NPT gauge ports)
- 9 MS33649 (1/4" NPT gauge ports)
- A 1/4" ISO 7-Rc taper
- H 1/2" sch 160 pipe
- K 1/4" sch 40 pipe

CAVITY FINISH

- 1 < 25 Ra, standard

SEAT MATERIALS

- A Tefzel®
- B CF PTFE
- C Polyimide, high temperature service
- H PCTFE (formerly Kel-F® 81)
- I High-density PTFE
- N Polyimide, low temperature service
- Q PEEK™

FLOW COEFFICIENT

- 3 0.06 (standard)
- 5 0.2
- C 0.025
- H 0.50

OUTLET RANGE

- C 0-10 psig
- D 0-25 psig
- E 0-50 psig
- G 0-100 psig
- I 0-250 psig
- J 0-500 psig
- L 0-6 psig
- W 0-750 psig

CAP ASSEMBLY

- 1 Standard stainless steel
- 4 Panel mount, stainless steel
- 5 Captured vent, aluminum
- 6 Captured vent, panel mount, aluminum
- 8 Tamper-proof, stainless steel
- 9 Fine adjust, 1/2" panel mount, aluminum
- 0 Fine adjust, 1 1/8" panel mount, aluminum
- A Captured vent, tamper-proof, aluminum
- E Tamper-proof, panel mount, aluminum
- H 1/4" NPT dome-loaded, stainless steel

DIAPHRAGM FACING/BACKING

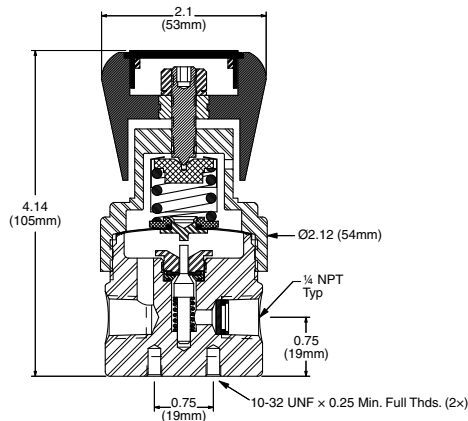
- 1 PTFE/stainless steel
- 2 PTFE/Viton® (0-50 psig max.)
- 6 Tefzel® ring/stainless steel
- 7 Viton®/stainless steel
- 8 PTFE/Inconel®
- 9 PTFE/Hastelloy® B
- 0 PTFE/Hastelloy® C
- A PTFE/tantalum
- B PTFE/Inconel® 625
- J Tefzel® ring/Inconel®

DIAPHRAGM TYPE

- 1 Standard diaphragm
- 2 Diaphragm attached poppet
- 3 Self-relieving
- 4 Vacuum assist spring, standard diaphragm
- 5 Vacuum assist spring, diaphragm attached poppet
- 6 Vacuum assist spring, self-relieving
- 7 Liquid service

Outline & Mounting Dimensions

Weight = 1.9 lbs (0.86kg)



For Your Safety

It is solely the responsibility of the system designer and user to select products suitable for their specific application requirements and to ensure proper installation, operation, and maintenance of these products. Material compatibility, product ratings and application details should be considered in the selection. Improper selection or use of products described herein can cause personal injury or property damage.

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