

## 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. 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.

Three different seat materials, three alternate orifice sizes and 7 pressure control ranges with INCONEL® 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®, Titanium and 6MO
- Panel mount (1 $\frac{3}{8}$ " mounting hole)
- Special diaphragm assembly for water service
- SS inlet pressure gauges
- SS outlet pressure gauges
- Base-mounting brackets
- Captured vent
- Self-relieving

pressure regulators

# PR-1 Series

## How to Order

### PR1 –

#### BODY MATERIAL

- 1 316L stainless steel, stainless steel diaphragm
- 4 MONEL®, INCONEL® diaphragm
- 5 HASTELLOY® B, INCONEL® diaphragm
- 6 HASTELLOY® C, INCONEL® diaphragm
- 7 Titanium, INCONEL® diaphragm
- B 6MO, INCONEL® diaphragm
- C SS316L, INCONEL® diaphragm

#### PORT CONFIGURATION

- A Standard
- For more port configurations see page 33.

#### PROCESS PORT TYPES

##### (GAUGE PORT TYPES, IF SPECIFIED)

- 1 ¼" FNPT (¼" FNPT gauge ports), standard
- 4 ⅜" FNPT (¼" FNPT gauge ports)

#### SURFACE FINISH OF DIAPHRAGM CAVITY

- 1 < 25 Ra, standard

#### SEAT MATERIAL

- A Tefzel®
- B CF PTFE
- H PCTFE (formerly Kel-F® 81)
- P PEEK™ High Temp Service, Metal Knob
- Q PEEK™ Low Temp Service, Plastic Knob

#### OPTIONS

- A EB33
- B EB5
- D Helium leak test
- E Pressure test certificate
- F Certificate of Conformity
- G CMTR
- S 70 Micron inlet filter screen for liquid app.
- 9 Sulfinert coating

#### CAP ASSEMBLY

- 1 Standard, stainless steel
- 4 Panel mount, stainless steel
- 7 Captured vent, stainless steel
- 8 Tamper-proof, stainless steel
- J Captured vent, panel mount, stainless steel

#### DIAPHRAGM FACING/BACKING MATERIAL

- 1 PTFE/metal backing, standard
- 6 Tefzel® ring/metal backing

#### DIAPHRAGM TYPE

- 1 Standard diaphragm
- 3 Self-relieving
- 7 Liquid Service

#### 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
- W 0–750 psig

#### FLOW COEFFICIENT (Cv)

- 3 0.06, standard
- 5 0.2
- C 0.025
- H 0.5

NOTE: Contact the factory for any additional requirements.

## Maximum Temperature & Operating Inlet Pressures

SEAT MATERIAL	MAXIMUM TEMPERATURE*	@	MAXIMUM OPERATING INLET PRESSURE
Tefzel®	150° F (66° C)	@	3600 psig (24.82 MPa)
PCTFE (formerly Kel-F® 81)	175° F (80° C)	@	6000 psig (41.37 MPa)
PEEK™	500° F (260° C)	@	3600 psig (24.82 MPa)
PEEK™	175° F (80° C)	@	6000 psig (41.37 MPa)
CF PTFE	175° F (80° C)	@	3600 psig (24.82 MPa)

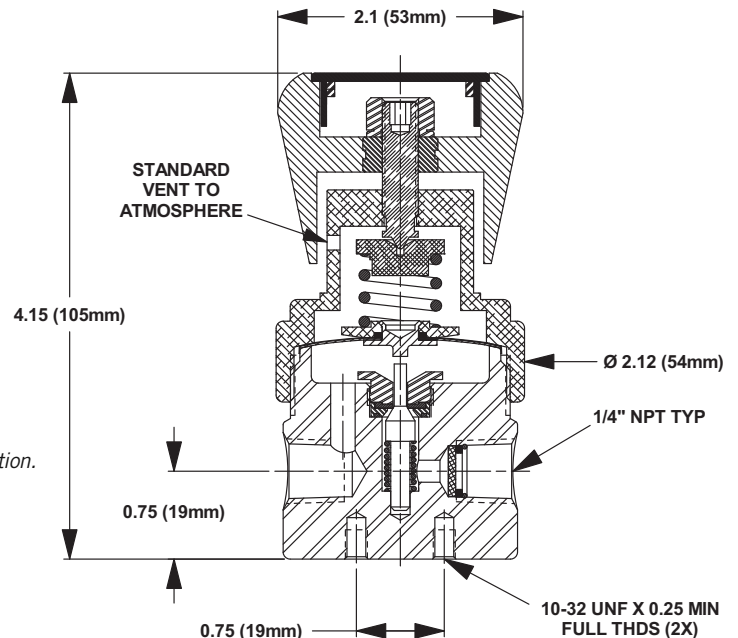
\* Temperatures in excess of 175° F (80° C) require a metal knob or the tamper-proof option.

INCONEL® and MONEL® are registered trademarks of Special Metals Corporation.  
 Tefzel® is a registered trademark of the DuPont Company.  
 HASTELLOY® is a registered trademark of Haynes International, Inc.  
 Kel-F® is a registered trademark of 3M Company.  
 PEEK™ is a trademark of Victrex PLC.

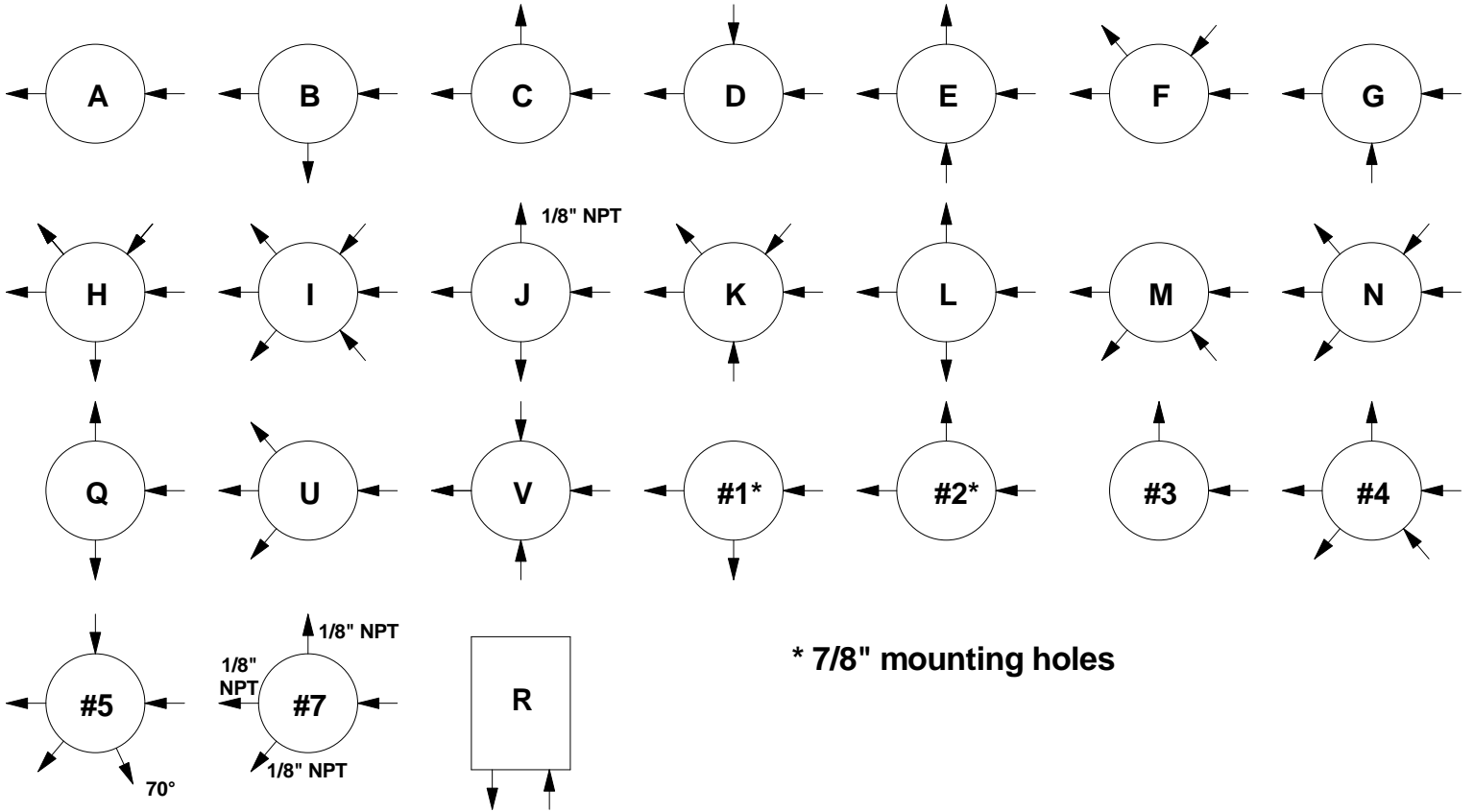
## Outline and Mounting Dimensions

Panel mount option requires 1.390 (35.3mm) minimum diameter panel cut out. 0.150 maximum panel thickness.

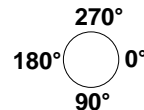
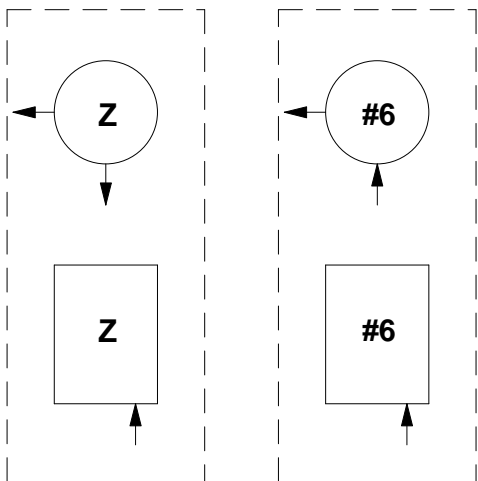
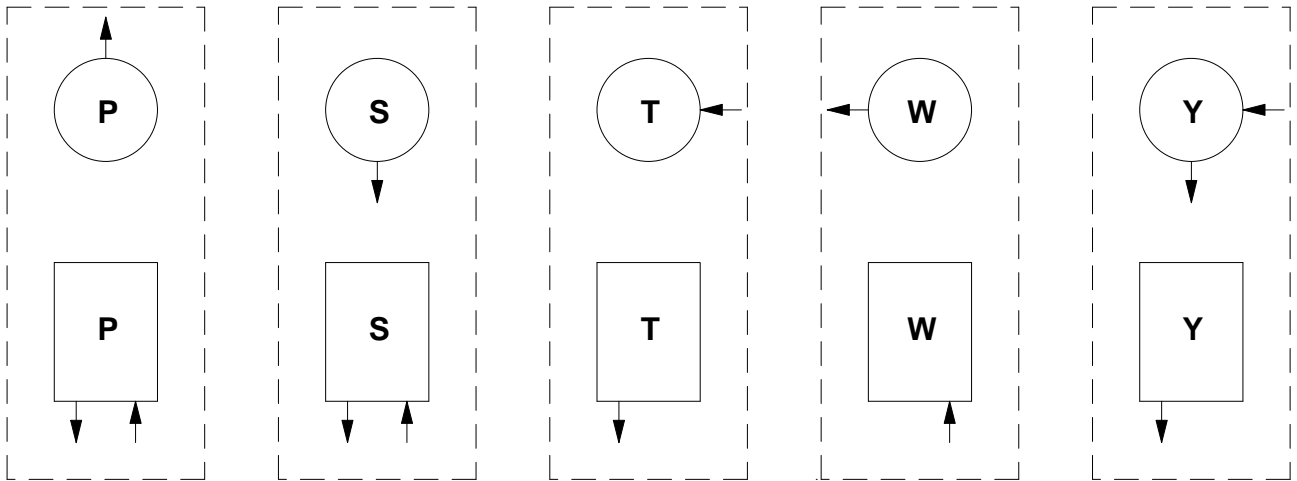
Weight = 1.9 lbs (0.86 kg)



# Port Locations



\* 7/8" mounting holes

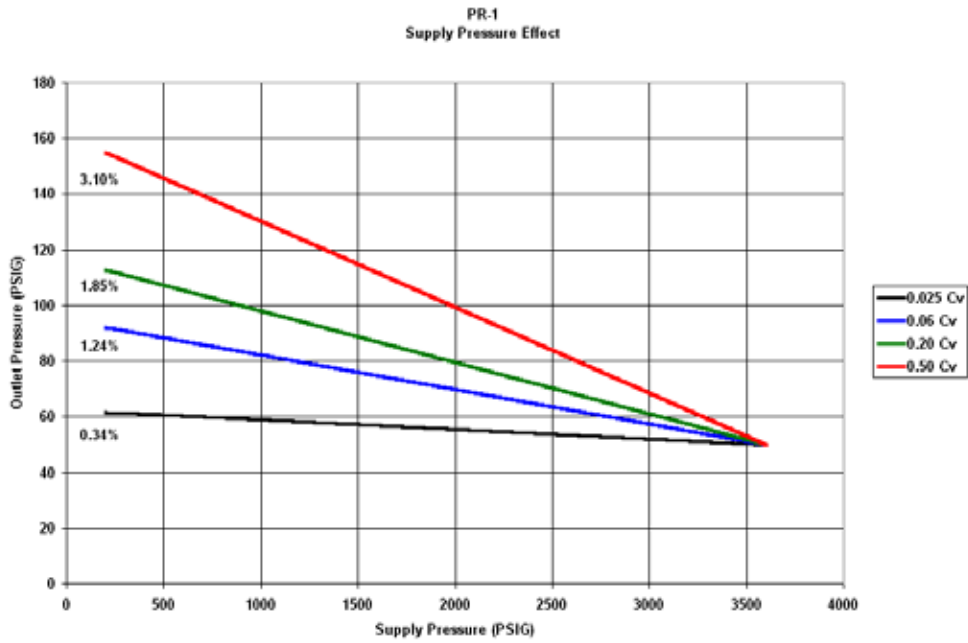


LOCATION OF PORTS FROM TOP VIEW

Arrow pointing toward body is inlet.  
Arrow pointing away from body is outlet.

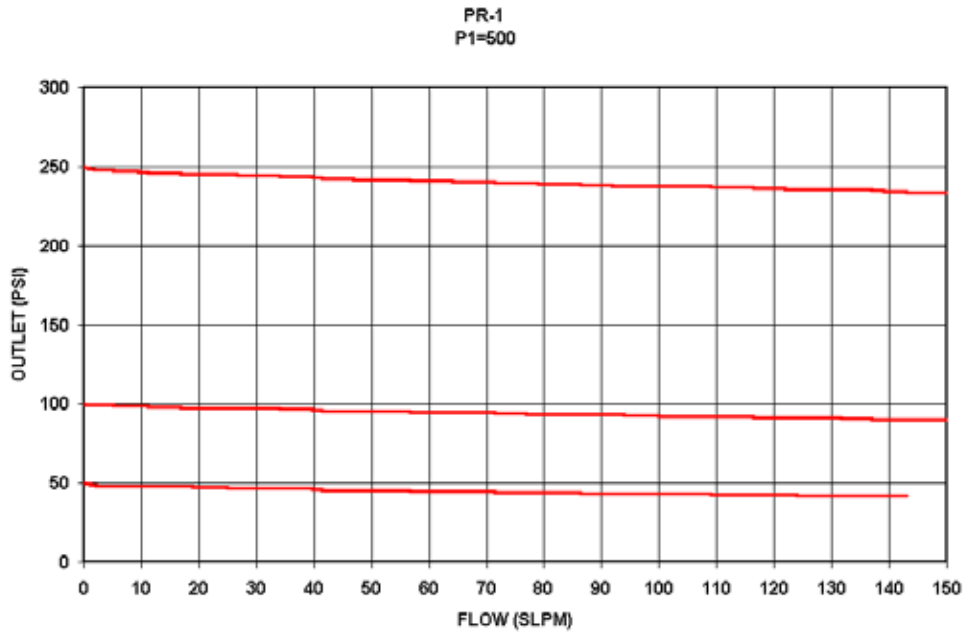
## PR-1 Series Pressure Regulator Supply Pressure Effect

### SUPPLY PRESSURE EFFECT

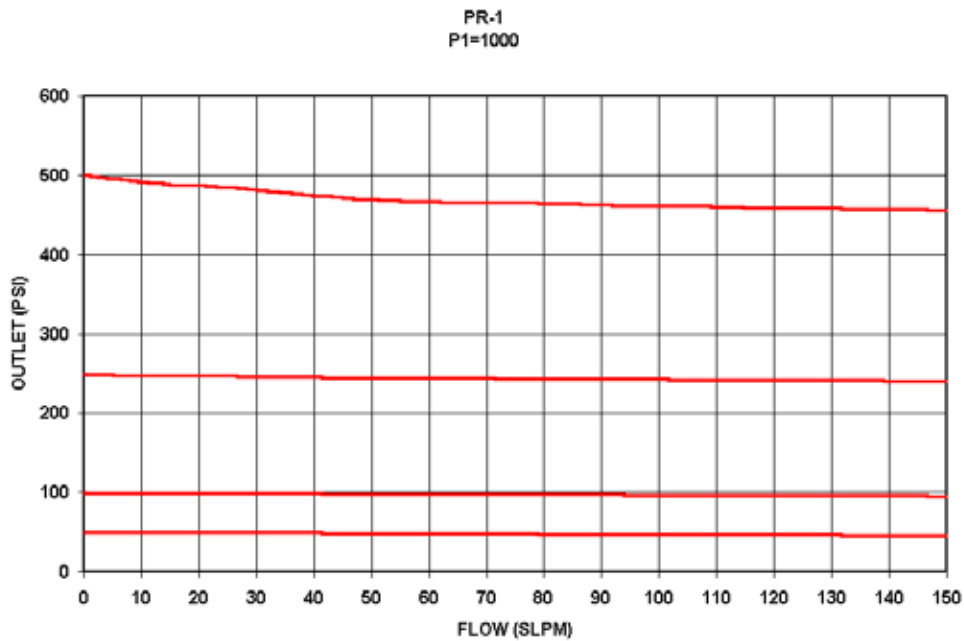


## PR-1 Series Pressure Regulator Flow Curves

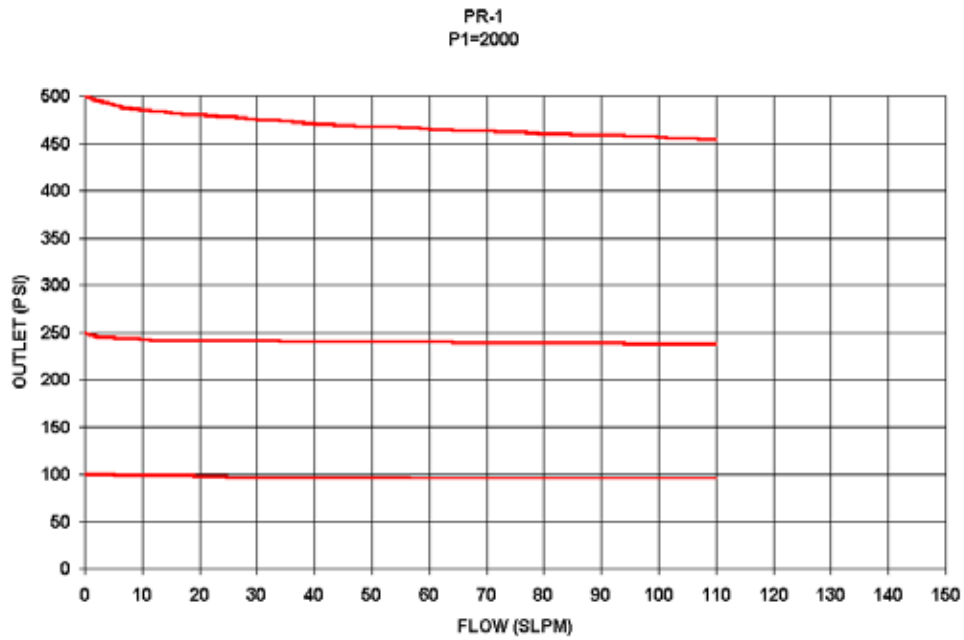
0-500 CONTROL RANGE



0-1000 CONTROL RANGE



## 0-2000 CONTROL RANGE



## 0-3500 CONTROL RANGE

