

# Series AVR-1

## Ordering Information

### BASIC SERIES

AVR-1

S

C

2

03

RV

### MATERIALS

S = Stainless Steel  
M = Monel

### SEAT MATERIALS

K = Kel-F81®  
C = Ceramic Filled Teflon®  
P = Polyimide

### OPTIONAL FEATURES

PM = Panel Mount  
RV = Relief Valve  
Porting Configurations  
3PR, 3PG and 4PV

### OUTLET GAUGE\*

03 = 0-30 psi  
01 = 0-100 psi  
4 = 0-400 psi  
6 = 0-600 psi  
X = No Gauge

### PRESSURE RANGE

1 = 0-25 psig  
2 = 0-50 psig  
3 = 0-100 psig  
4 = 0-250 psig  
5 = 0-500 psig

\* Outlet guage available in stainless steel only

## REPAIR PARTS

## Repair Parts

See Spare Parts List.



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PCTFE (formerly known as Kel-F81®, a registered trademark of 3M Company.  
Hastelloy C22® is a registered trademark of Haynes.

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# Series AVR-1

## Pressure Reducing Regulator



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### Steam Heated Vaporizing Pressure Reducing Regulator

The AVR-1 Series steam heated vaporizing regulator is designed to heat and/or vaporize a gas or liquid sample before entering an analyzer system.



### features

- ▶ Low internal volume
- ▶ Standard Hastelloy C22<sup>®</sup> diaphragm for superior strength and corrosion resistance
- ▶ Convolute diaphragm provides outlet pressure stability with changes in flow
- ▶ Integral diaphragm stop provides additional safety measure
- ▶ Meets NACE standard MR-01-75

### materials of construction

#### Wetted

Body . . . . . 316L stainless steel or Monel  
Seat . . . . . PCTFE  
(formerly known as Kel-F81<sup>®</sup>),  
ceramic filled Teflon<sup>®</sup> or polyimide  
Seals . . . . . Teflon<sup>®</sup> and PEEK  
Diaphragm . . . . . Hastelloy C22<sup>®</sup>  
Poppet . . . . . 316 stainless or Hastelloy<sup>®</sup>  
Poppet spring . . . . . Inconel<sup>®</sup>  
Steam tube connection . . . . . 316 SS or  
Monel .50" OD x .049"

#### Nonwetted

Cap . . . . . 303 stainless steel  
Cap nut . . . . . 316L stainless steel  
Adjusting screw . . . . . 416 Stainless Steel

### operating conditions

Inlet pressure . . . . . 3500 psi  
(241.0 bar) maximum  
Outlet pressure . . . . . 0-25 psi (0-1.7 bar)  
0-50 psi (0-3.5 bar)  
0-100 psi (0-7.0 bar)  
0-250 psi (0-17.2 bar)  
0-500 psi (0-35.0bar)  
Maximum steam pressure . . . . . 650 psi  
(45.0) bar  
Temperature of flow media . -40°F to 500°F  
(-40°C to 260°C)

### functional performance

Design proof pressure . . 7000 psi (482 bar)  
Design burst pressure . . . 11,500 psi (793 bar)  
Flow capacity . . . . . Cv 0.06  
(ANSI/ISA S 75.02 1988 using water)  
Supply pressure effect . . .7 psi per 100 psi  
(.05 bar per 7 bar)

#### Leakage

Outboard . . . . . 1 x 10<sup>-9</sup> scc/sec He  
Inboard . . . . . 1 x 10<sup>-9</sup> scc/sec He  
Internal volume . . . . . Inlet = 2.6 cc  
Total 7.7 cc

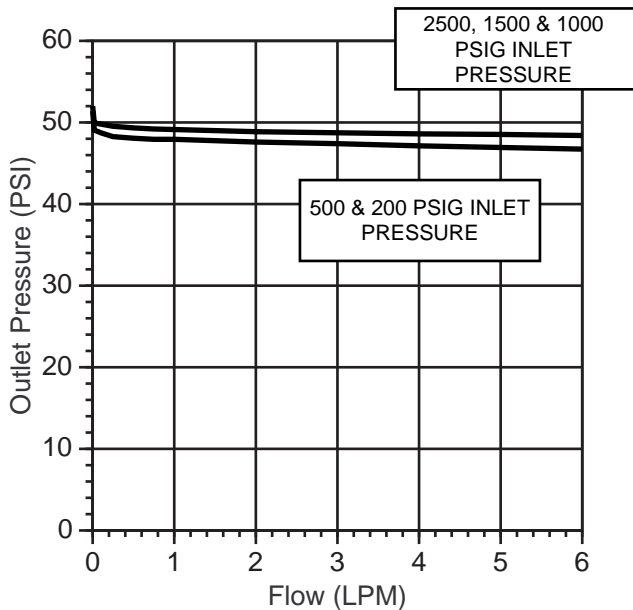
### standard connections

1/8" inlet and 1/4" outlet female pipe threads (NPTF)

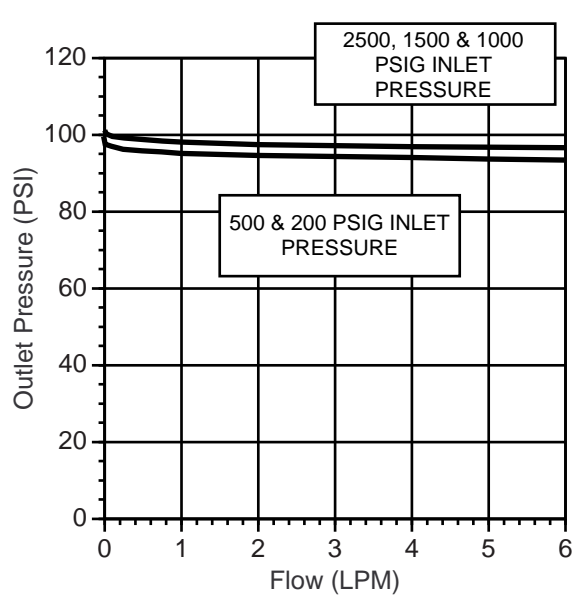
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## Flow Curve

AVR-1, 0-50 psig outlet range Cv .06, Air



AVR-1, 0-250 psig outlet range Cv .06, Air



## Seat Operating Parameters

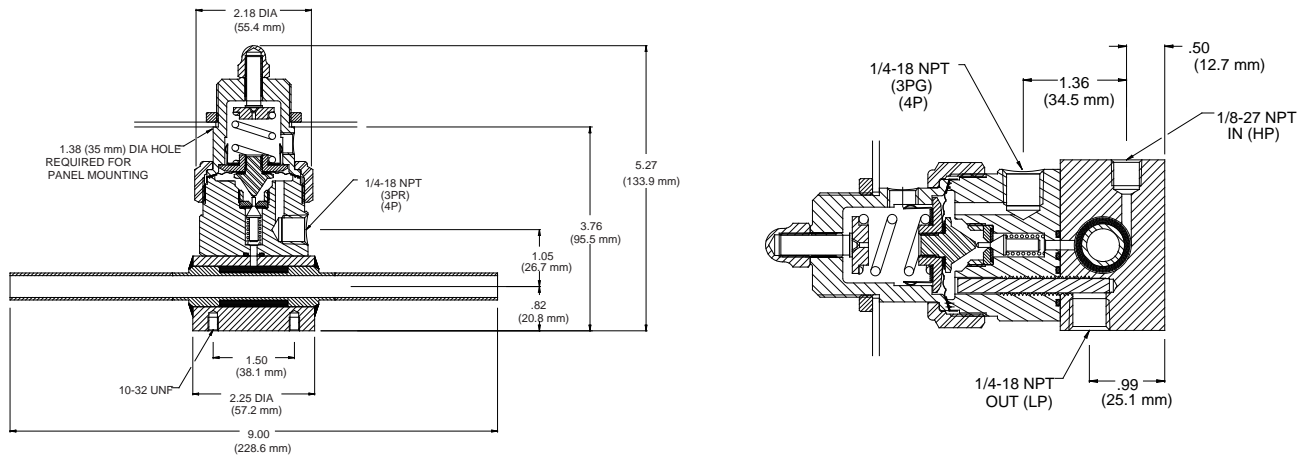
### Maximum Operating Limits

Seat Material	Temperature	Inlet Pressure
PCTFE (formerly Kel-F81®)	150°F (66°C)	3500 psig (241 bar)
Ceramic filled Teflon®	275°F (135°C)	3500 psig (241 bar)
Polyimide	600°F (315°C)	3500 psig (241 bar)

The above temperatures are that of the flow media. If the ambient temperature exceeds 400°F (204°C), please consult the factory for advice. Polyimide is not suitable for steam service or streams containing ammonia. Materials of construction are listed on page one of this bulletin. If there are questions regarding chemical compatibility of any of these materials, please consult the factory for advice.

# Series AVR-1

## Cross Sectional View and Installation Dimensions



## Porting Configurations

Below are the standard porting configurations that are available. One of these will need to be selected for the ordering information on page four of this bulletin.

The standard unit is equipped with a 1/8" NPT inlet port and a 1/4" NPT outlet port, located in the bottom section of the unit (2P). Extra outlet ports are 1/4" NPT.

The cross sectional drawings above illustrate the location of the extra outlet port(s) in the top section of the unit.

