

FR1000 Series

UHP Single Stage, Pressure Reducing Regulator



Consistent, Long Life Performance

The FR1000 Series ultra high purity, non-tied diaphragm, pressure reducing regulator provides precise control of process gas resulting in a stable flow and pressure supply to downstream systems making it an excellent choice for valve manifold boxes, gas cabinets, and many other point of use semiconductor manufacturing applications.

The standard Hastelloy C-22® diaphragm and integrated filtration promotes long life performance while the metal-to-metal diaphragm seal assures high leak integrity.



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Product Features:

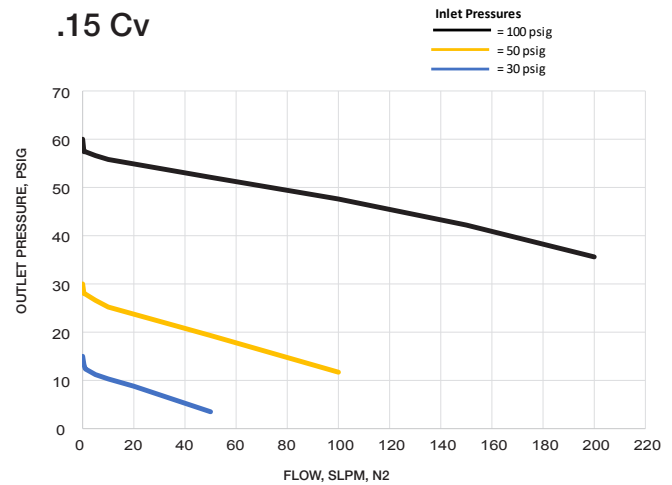
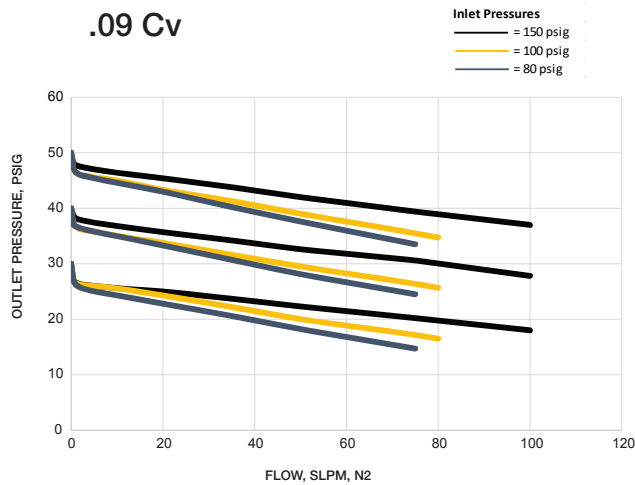
- 316L stainless steel body
- Manufactured for ultra high purity gas delivery applications
- Metal-to-metal diaphragm seal standard
- Passivated & electropolished
- Integrated filtration
- Hastelloy® diaphragm standard
- 10 μ in. Ra surface finish



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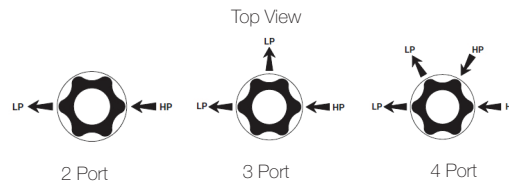
FR1000 Series

Flow Curves

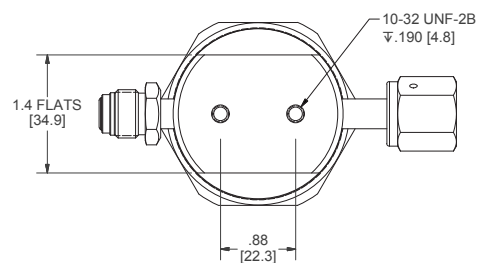
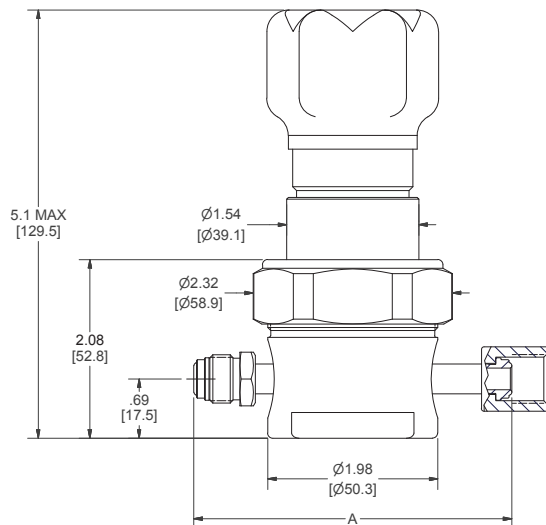


Additional flow curves available upon request

Porting Configurations



Dimensional Drawings



DIMENSION TABLE

Connection Type	End to End Dimension (A)
1/4" Face Seal	3.70 ± .02 in. (94 ± .5 mm)
1/4" Tube Stub	2.96 ± .02 in. (75 ± .5 mm)
3/8" Face Seal	4.70 ± .02 in. (119.4 ± .5 mm)
3/8" Tube Stub	2.96 ± .02 in. (75 ± .5 mm)

All dimensions in inches. Metric dimensions are for reference only.

Safety Guide and Installation and Operating Instructions available at
www.parker.com/veriflo

FR1000 Series

Ordering Information

Build an FR1000 Series regulator by replacing the numbered symbols with an option from the corresponding tables below.

Contact factory for most up to date lead time information.

Blue = Configurations that have selections in blue may have an extended lead time and a minimum order quantity.

Sample: **FR1003 S 9 K 4P X X FS FF TH**
Finished: **FR1003S9K4PXXFSFFTH**

1 Basic Series Configuration

FR1001 = 1 - 10 psig*
FR1003 = 1 - 30 psig
FR1006 = 2 - 60 psig
FR1010 = 2 - 100 psig
FR1015 = 5 - 150 psig

* 300 psig maximum inlet pressure.

2 Body Material

S = 316L SS
D = 316L SS Double Melt*

* Captured bonnet with 1/8" FNPT vent port standard with 316L SS double melt body

3 Flow Capacity

9 = .09 Cv
15 = .15 Cv

4 Seat Material

K = PCTFE
V = Polyimide

5 Porting*

2P = 2 Ports
3P = 3 Ports
4P = 4 Ports

* Refer to the Regulator Porting Guide, 25000156, for additional porting configurations.

6 Outlet Gauge*

X = No Gauge
03 = 0 - 30 psig
0L = 0 - 60 psig
01 = 0 - 100 psig
2 = 0 - 200 psig
4 = 0 - 400 psig

* Only include with "3P" or "4P" body configurations.

7 Inlet Gauge*

X = No Gauge
01 = 0 - 100 psig
4 = 0 - 400 psig
10 = 0 - 1000 psig
20 = 0 - 2000 psig
30 = 0 - 3000 psig
40 = 0 - 4000 psig

* Only include with "4P" body configuration.

8 Port Style

FS = 1/4" Face Seal
TS = 1/4" Tube Stub
FS6 = 3/8" Face Seal*
TS6 = 3/8" Tube Stub

* Provided with 1/2" face seal nuts.

** Extended lead times for configurations with non-matching end connections.

9 Port Configuration

M = Male
F = Female
I = Internal Face Seal
(gauge ports only)

* 1/4" FS-M Gauge Ports are Standard
Any other Gauge Port configuration may have an extended lead time.

10 Optional Features

Blank = none
TH = Ni-Cr-Mo alloy
(Hastelloy® or equivalent) poppet
THR = Ni-Cr-Mo alloy
(Hastelloy® or equivalent) poppet and seat retainer

FR1000 Series

Specifications

Wetted Materials of Construction	
Body	316L SS (std), 316L SS Double Melt
Diaphragm	Ni-Cr-Mo alloy (Hastelloy® or equivalent)
Poppet	316L SS (std), Ni-Cr-Mo alloy (Hastelloy® or equivalent)
Poppet Spring	316 SS
Seat Retainer	316L SS (std), Ni-Cr-Mo alloy (Hastelloy® or equivalent)
Filter Screen	Ni-Cr-Mo alloy (Hastelloy® or equivalent), 74 µm
Seat	PCTFE (std), Polyimide
Finish	Passivated & Electropolished

For additional information on materials of construction, functional performance and operating conditions refer to Veriflo report RI.EN.RP017.

All specifications subject to change without notice.

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Functional Performance	
Flow Capacity (Cv)	.09 (std) .15
Internal Leakage (seat)	$\leq 4 \times 10^{-8}$ scc/sec He
External Leakage (Inboard)	$\leq 2 \times 10^{-10}$ scc/sec He
Supply Pressure Effect	
.09 Cv	0.6 psig/100 psig
.15 Cv	1.5 psig/100 psig
Internal Volume	0.61 in ³ (10 cm ³) ¹
Proof Pressure	5250 psig
Burst Pressure	10,500 psig
Operating Conditions	
Maximum Inlet Pressure	300 psig ³ or 3500 psig ²
Temperature	-40°F to 150°F ² (-40°C to 65°C)

1. Internal volume includes "FS" end connections.
2. Pressure rating based on nominal temperature conditions. Refer to Veriflo Report RI.EN.RP017 for specific information regarding regulator performance at temperature.
3. Applies to the "FR1001" model configuration, 10 psig outlet pressure range.

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