

# SEMICONDUCTOR & SPECIALTY GAS APPLICATIONS- PRESSURE REDUCING REGULATOR

## FR1S Series Compact Piston Line Pressure Regulator

### Feature

- Compact design, small size
- Inner small volume
- 40 µm filter element installed at the inlet

### Technical Data

- Media contacting material  
316,316L SS or Brass (nickel plated)for body  
Seat: PCTFE,PEEK or Vespel  
Piston:316L  
O-ring:Viton,Kalrez or Buna-N  
Filter: 316L
- Function  
Test pressure: 150% of max rated pressure  
Burst pressure: 300% of the max rated pressure  
Leak rate:  
Internal:Bubble-tight  
External:Bubble-tight
- Flow coefficient (Cv):0.06
- Weight(only regulator):0.93lbs(0.4kg)
- Body port: inlet, outlet - 1/4" NPT female thread
- Working condition:  
Maximum inlet pressure: 6000 psig  
Controlled pressure ranges:0~8,0~500,0~1500 psig  
Working temperature:-15°F~+165°F (-26°C~+74°C)



## FR2 Series Normal Diaphragm Line Pressure Regulator Max.Inlet Pressure: 1500 psig.

### Feature

- Excellent sensitivity and set point pressure stability
- Inner small volume
- 40 µm filter element installed at the inlet

### Technical Data

- Single-stage regulator
- Maximum control pressure:3000 or 4500 psig
- Material of the internal components:  
Seat: PEEK,PCTFE,PEEK  
Diaphragm:Alloy  
Filter: 316L
- Working temperature: -40°F~+165°F (-40°C~+74°C)
- Leak rate: (helium):  
Internal:≤1x10<sup>-7</sup> mbar-l/s  
External:≤1x10<sup>-9</sup> mbar-l/s
- Flow coefficient (Cv):0.06
- Weight(only regulator):≈0.86 kg
- Body port: inlet, outlet, pressure gauge port - 1/4" NPT female thread



## FR2 Series Normal Diaphragm Line Pressure Regulator Max.Inlet Pressure: 1500 psig.

### Feature

- Piston sensing design with greater outlet pressure adjustment range
- Inner small volume
- 40 µm filter element installed at the inlet
- Special cleaning and packaging processes for oxygen-rich environments

### Technical Data

- Single-stage regulator
- Maximum control pressure:6000 psig
- Controlled pressure ranges:0~3000 psig
- Material of the internal components:  
Main seat: PEEK,PCTFE,PEEK  
Diaphragm: 316L  
Filter: 316L
- Working temperature:-15°F~+165°F(-26°C~+74°C)
- Leak rate:  
Internal:Bubble-tight  
External: Bubble-tight
- Flow coefficient (Cv):  
Without vent: 0.06、0.2、0.5
- Weight(only regulator):≈1 kg  
Body port: inlet, outlet, pressure gauge port - 1/4" NPT female thread



## FR4 Series Medium Flow Line Pressure Regulator

### Feature

- High flow rate (Cv 1.1) and high sensitivity
- Large diameter convoluted diaphragm to increase pressure sensitivity
- Balanced spool design reduces pressure supply effect
- Special cleaning and packaging processes for oxygen-rich environments

### Technical Data

- Single-stage regulator
- Maximum control pressure:500 and 3000 psig
- Controlled pressure ranges:0~500psig
- Material of the internal components:  
Seat: PTFE、PCTFE、PEEK  
Diaphragm:316L
- Working temperature: -40°F~+140°F (-40°C~+60°C)
- Leak rate: Helium:  
Internal:Bubble-tight  
External:≤1x10<sup>-9</sup>mbar-l/s
- Flow coefficient (Cv):1.1
- Weight(only regulator):≈1.45kg
- Body port: inlet, outlet -1/2" NPT female thread  
Pressure gauge port -1/4"NPT female thread



**FRH Series High Pressure Piston Line Pressure Regulator**  
Max.Inlet Pressure: 10000 psig.

Feature

- Maximum control pressure: 10000 psig
- Piston sensing design with greater outlet pressure adjustment range

Technical Data

- Maximum control pressure:  
Stainless Steel :10000 psig  
Brass:6000 psig
- Material of the internal components:  
Seat: PEEK  
Piston: 316  
Filter: 316L
- Working temperature:-15°F~+165°F (-26°C~+74°C)
- Leak rate:  
Internal: Bubble-tight  
External: Bubble-tight
- Flow coefficient (Cv):0.05,0.2
- Weight:≈ 2.0 kg
- Body ports: inlet, outlet and pressure gauge ports -1/4"NPT female thread



**Ordering Number Description**

**A B C D E F G H I**

**SS - FR1 - 3 - 50 - FN4 - B - B - FN4 - W**

A	Body Material
SS	316 SS
HC	AlloyC-276

B	Series
FR1S	
FR2	
FR3	
FR4	
FRH	

C	Inlet Pressure Range
3	3000 psig
36	3600 psig
6	6000 psig
10	10000 psig

D	Outlet Pressure Range
25	0-25PSI
50	0-50PSI
100	0-100PSI
250	0-250PSI
500	0-500PSI
750	0-750PSI
1500	0-1500PSI
2500	30-2500PSI
4000	50-4000PSI
6000	60-6000PSI
10000	200-10000PSI

E	Inlet Size
FN4	1/4NPT Female NPT
FN8	1/2NPT Female NPT
F4	1/4" inch double ferrule fitting
F8	1/2" inch double ferrule fitting

F	Inlet pressure gauge port
B	Leave port with pressure gauge
0	No watch, no mouth
K	No gauge, no gauge port
PST	Leave the mouth open with a plug

G	Outlet pressure gauge port
	Specify in the same way as the P1

H	Outlet Size
FN4	1/4NPT Female NPT
FN8	1/2NPT Female NPT
F4	1/4" inch double ferrule fitting
F8	1/2" inch double ferrule fitting

I	Way to install
	Default=No special requirements
Y	Panel mounting
U	Bottom with bolt mounting

J	Circulation mode
	Default=Right in, left out
Fl	Left in, right out

K	Cleaning and Packaging
	Default = Standard cleaning and packaging for general industrial use
W	degreasing and oxygen-rich cleaning
W1	Normally open actuator

Non-standard products or customized product models are indicated separately by our technician for the model.

**SEMICONDUCTOR & SPECIALTY GAS APPLICATIONS PRESSURE BACK PRESSURE REGULATOR**

**BPY Series Diaphragm Back Pressure Regulator**  
Maximum control pressure: 250 psig

Feature

- Excellent sensitivity and set point pressure stability
- Inner small volume
- Special cleaning and packaging processes for oxygen-rich environments

Technical Data

- Maximum control pressure:500 psig
- Material of the main components:  
Seat: PCTFE,PTFE,PEEK  
Diaphragm: 316L
- Working temperature:-40°F~+140°F (-40°C~+60°C)
- Leak rate( Helium):  
Internal: Bubble-tight  
External:≤1x10<sup>-9</sup> mbar-l/s
- Flow coefficient (Cv): 0.06,0.2
- Weight:≈0.86kg
- Body ports: inlet, outlet and pressure gauge ports - 1/4" Female NPT



**BPM Series Piston Back Pressure Regulator**  
Maximum control pressure: 1000 psig

Feature

- Excellent sensitivity and set point pressure stability
- Inner small volume
- Special cleaning and packaging processes for oxygen-rich environments

Technical Data

- Maximum control pressure:500 psig
- Material of the main components:  
Seat: PCTFE,PTFE,PEEK  
Diaphragm: 316L
- Work Tmeperature:-40°F~+140°F (-40°C~+60°C)
- Leak rate: (Helium):  
Internal: Bubble-tight  
External:≤1x10<sup>-9</sup> mbar-l/s
- Flow coefficient (Cv):1.1
- Body ports: inlet, outlet and pressure gauge ports - 1/4" and 1/2" Female NPT

