

Line Pressure Regulators

FLR-1 Series Compact Diaphragm Regulators

Features

- Similar to FCR-1 Series Regulators with larger orifice to provide higher flow capacity
- Three port configurations available
- 316L SS body for corrosive or toxic gases, Nickel-plated Brass body for non-corrosive gases
- With special cleaning and packaging, applicable to oxygen-enriched environments
- Configuration with filter installed at inlet as standard
- Panel mounted or installed with screw at the bottom

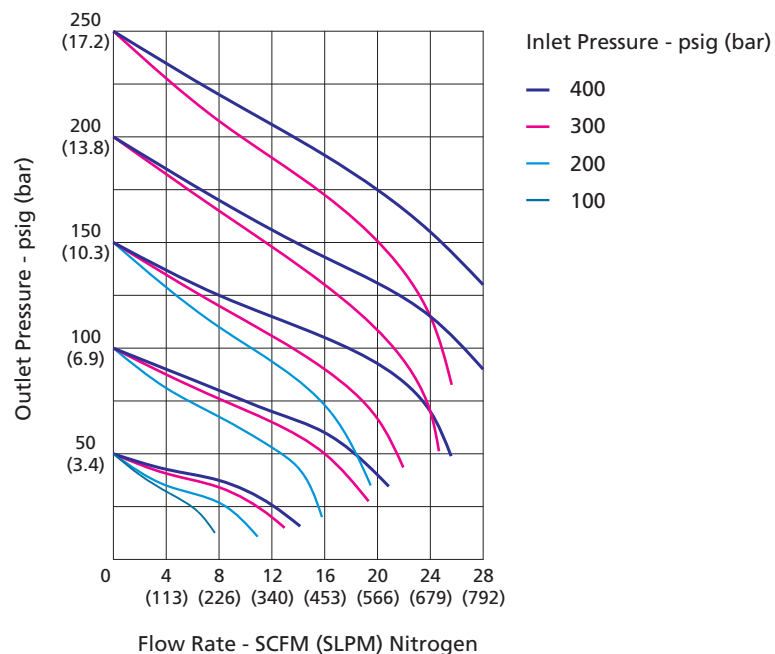
Technical Data

- Single-stage regulator
- Maximum inlet pressure: 500 or 1500 psig
- Outlet pressure range: 0~25, 0~50, 0~100 or 0~250 psig
- Material of the internal components:
 - Seat: PCTFE
 - Diaphragm: Hastelloy
 - Filter: 316L
- Temperature: $-40^{\circ}\text{F} \sim +165^{\circ}\text{F}$ ($-40^{\circ}\text{C} \sim +74^{\circ}\text{C}$)
- Leak rates:
 - Internal: $\leq 1 \times 10^{-7}$ mbar·l/s helium
 - External: $\leq 1 \times 10^{-9}$ mbar·l/s helium
- Flow coefficient (Cv): 0.14
- Weight (regulator only): ≈ 1.98 lbs (0.9 kg)
- Body ports: 1/4" female NPT for inlet, outlet and gauge



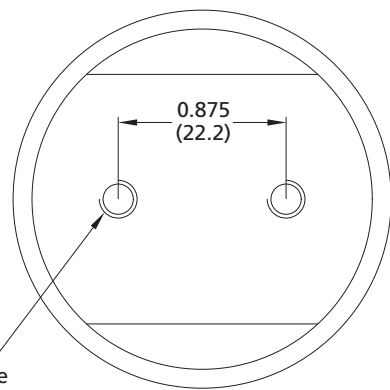
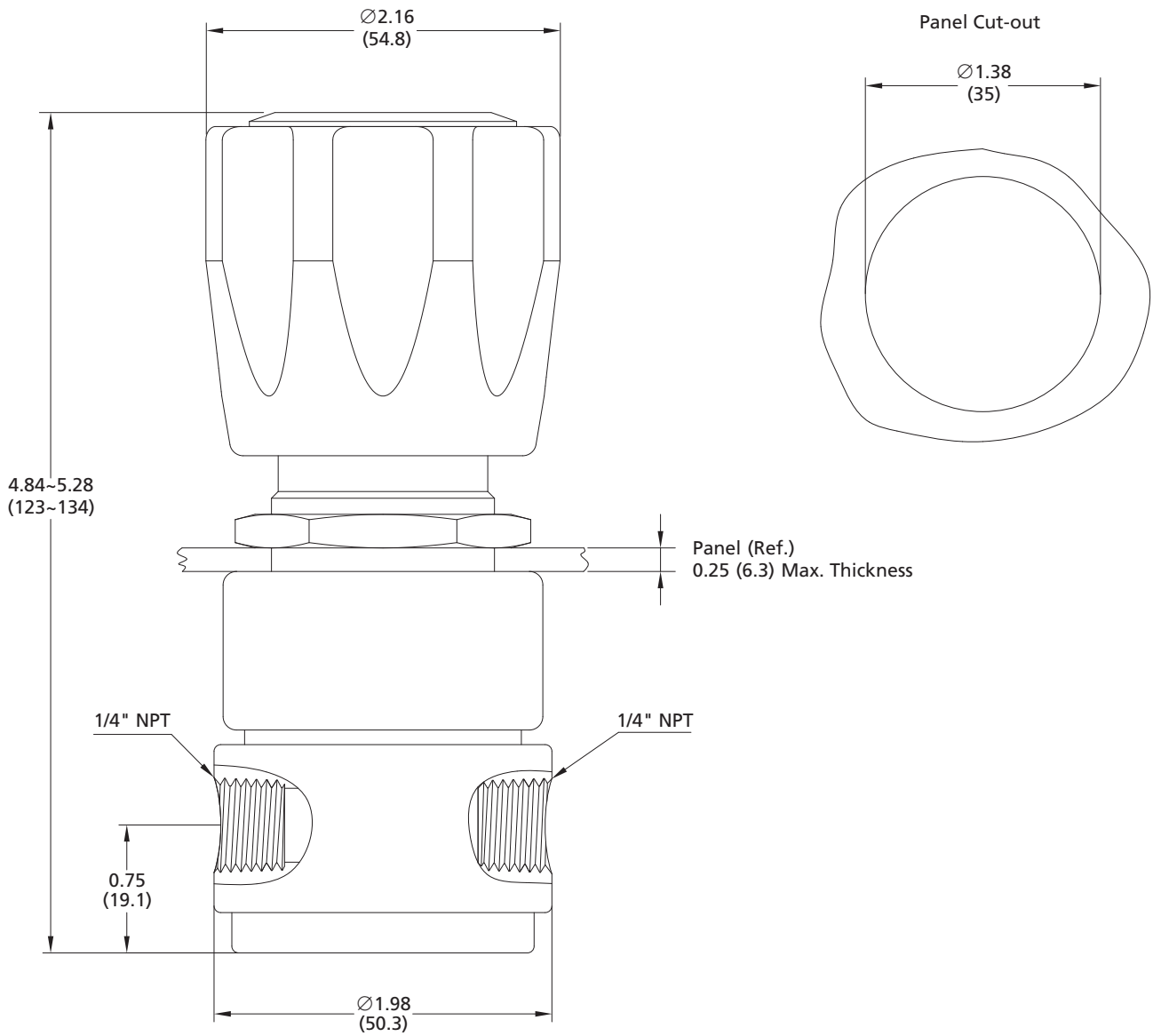
Model: FLR-16L-15-100-00-00-Z

Typical Flow Chart

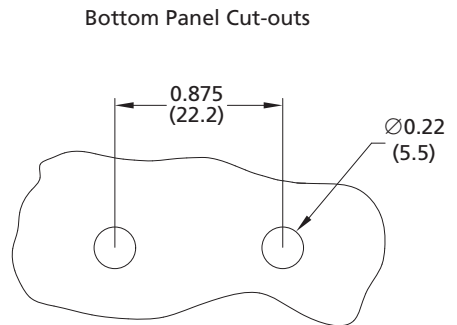


Dimensions

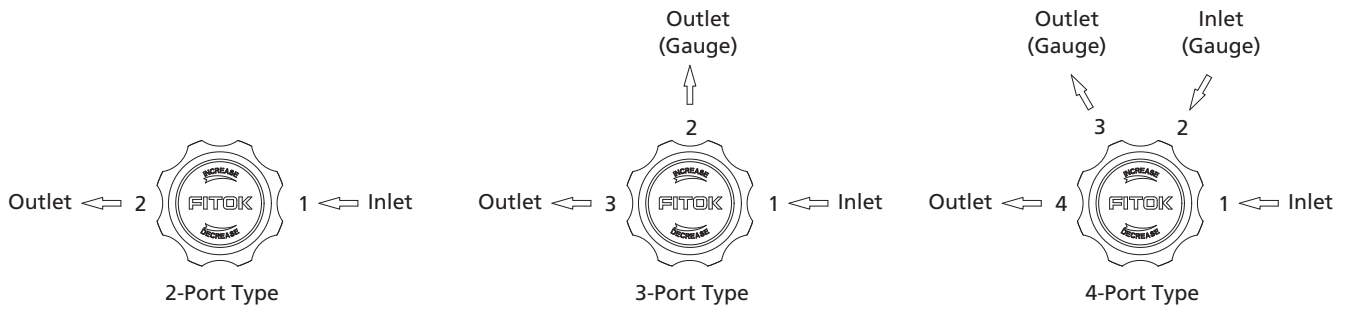
Dimensions, in inches (millimeters), are for reference only.



2xM5x0.8-6H thread
The holes are compatible with 10-32 mounting screws



Port Configurations



Part Number Description

FLR - 16L - 15 - 100 - 00 - B - B - 00 - Z

| Body Material | Inlet Pressure P1 | Connection 1 | Connection 2 | Connection 3 | Connection 4 | Installation Type |
|-------------------------|-------------------|--|--|----------------------|----------------------|---------------------------------------|
| 6L 316L SS | 05 500 psig | 00 1/4" Female NPT | B With Gauge (psi/bar) | Same as Connection 2 | Same as Connection 1 | Not Required |
| SS 316 SS | 15 1500 psig | 01 1/4" Male NPT | M With Gauge (psi/MPa) | | | Z Installed with One Panel Nut |
| HC Hastelloy C-276 | | 10 1/4" Tube Fitting | P Plug | | | N Installed with Screws at the Bottom |
| B Brass (Nickel-plated) | | 11 3/8" Tube Fitting | 00 1/4" Female NPT | | | |
| | | 20 6 mm Tube Fitting | 01 1/4" Male NPT | | | |
| | | 21 8 mm Tube Fitting | 10 1/4" Tube Fitting | | | |
| | | Other connections are available upon request | 11 3/8" Tube Fitting | | | |
| | | | 20 6 mm Tube Fitting | | | |
| | | | 21 8 mm Tube Fitting | | | |
| | | | Other connections are available upon request | | | |

Notes:
 1. Most configurations are available.
 2. Before ordering, please read **Installation Instructions and Cautions** on A-77.
 Examples of part number:
 a. 2-port type (1 in, 1 out): FLR-16L-15-25-00-00
 b. 3-port type (1 in, 2 out): FLR-16L-05-100-00-B-00

Line Pressure Regulators

FLR-2 Series Piston Regulators

Features

- ⦿ Applicable to non-corrosive gases or low-viscosity liquids
- ⦿ Easy to assemble and disassemble, convenient replacement of springs with different output ranges
- ⦿ Robust piston-sensed design to provide safety and reliability
- ⦿ With special cleaning and packaging, applicable to oxygen-enriched environments
- ⦿ Three port configurations available
- ⦿ Panel mounted or installed with screws at the bottom

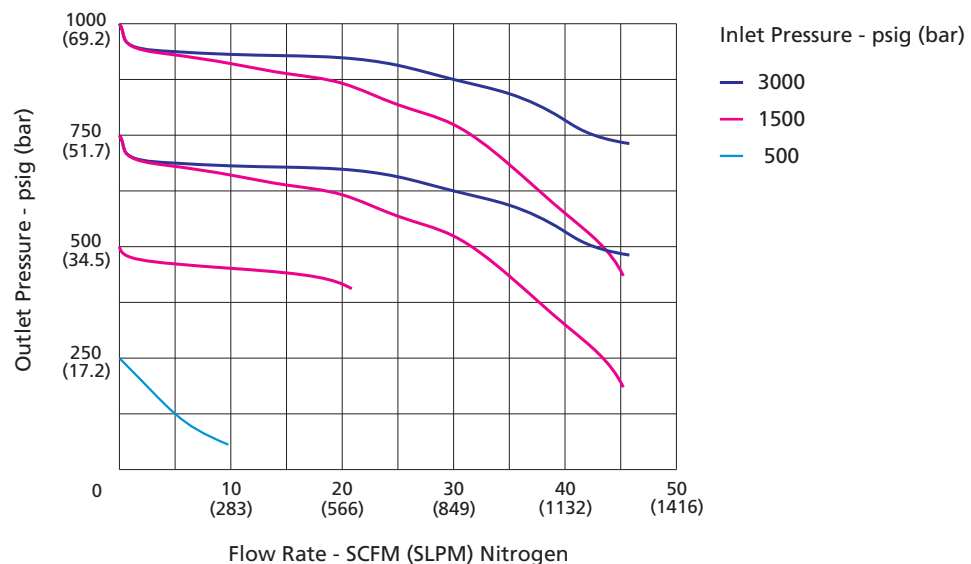
Technical Data

- ⦿ Single-stage regulator
- ⦿ Maximum inlet pressure: 3000 or 4500 psig
- ⦿ Outlet pressure range: 0~250, 0~500, 0~750 or 0~1000 psig
- ⦿ Material of the internal components:
 - Main Seat: PCTFE (PEEK for Venting Model)
 - Vent Seat: PCTFE
 - Piston: 316L
 - O-ring: Viton or Kalrez
 - Filter: 316L
- ⦿ Temperature: -15°F~+165°F (-26°C~+74°C)
- ⦿ Leak rates:
 - Internal: Bubble-tight
 - External: Bubble-tight
- ⦿ Flow coefficient (Cv):
 - Without vent: 0.06
 - Vent: 0.1
- ⦿ Weight (regulator only): ≈1.98 lbs (0.9 kg)
- ⦿ Body ports: 1/4" female NPT for inlet, outlet and gauge



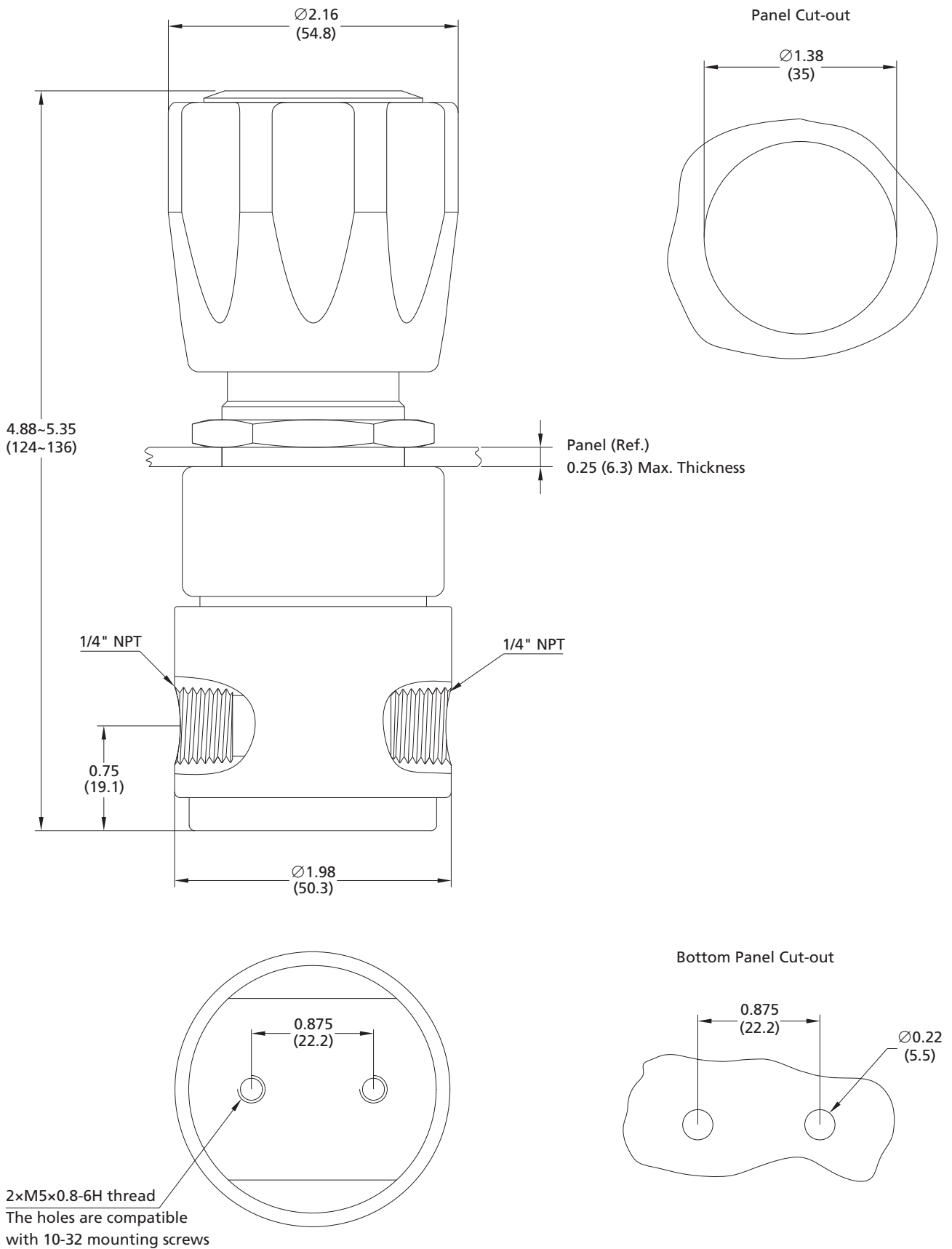
Model: FLR-2SS-45-1000-00-00-Z

Typical Flow Chart

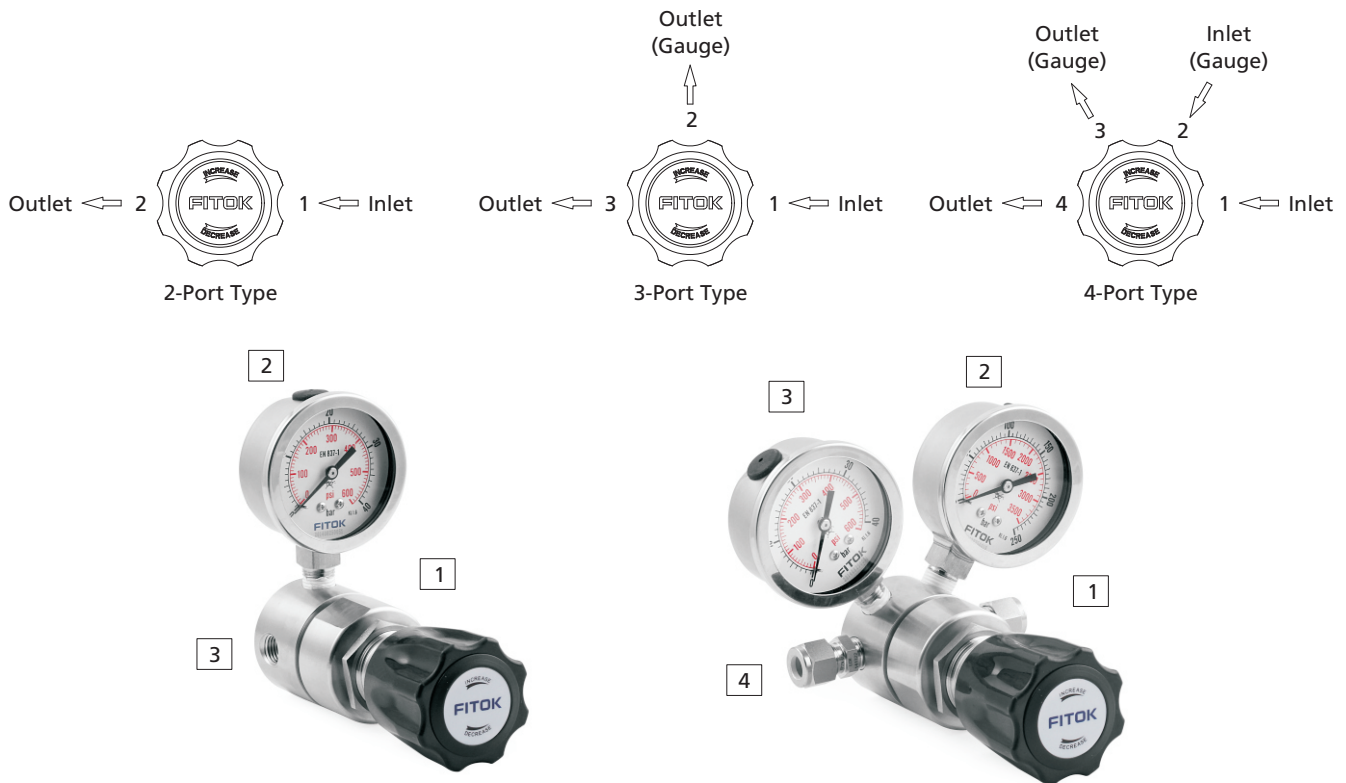


Dimensions

Dimensions, in inches (millimeters), are for reference only.



Port Configurations



Part Number Description

FLR - 2V Z 6L - 45 - 500 - 10 - B - B - 10 - Z

| Vent Option | Inlet Pressure P1 | Connection 1 | Connection 2 | Connection 3 | Connection 4 |
|-------------------------|--------------------------|--|--|---------------------------------------|----------------------|
| Without | 30 3000 psig | 00 1/4" Female NPT | B With Gauge (psi/bar) | Same as Connection 2 | Same as Connection 1 |
| V With | 45 4500 psig | 01 1/4" Male NPT | M With Gauge (psi/MPa) | | |
| O-ring Material | Outlet Pressure Range P2 | 10 1/4" Tube Fitting | P Plug | Installation Type | |
| Viton | 250 0~250 psig | 11 3/8" Tube Fitting | 00 1/4" Female NPT | Not Required | |
| Z Kalrez | 500 0~500 psig | 20 6 mm Tube Fitting | 01 1/4" Male NPT | Z Installed with One Panel Nut | |
| Body Material | 750 0~750 psig | 21 8 mm Tube Fitting | 10 1/4" Tube Fitting | N Installed with Screws at the Bottom | |
| 6L 316L SS | 1000 0~1000 psig | Other connections are available upon request | 11 3/8" Tube Fitting | | |
| SS 316 SS | | | 20 6 mm Tube Fitting | | |
| B Brass (Nickel-plated) | | | 21 8 mm Tube Fitting | | |
| | | | Other connections are available upon request | | |

Notes:

1. Most configurations are available.
2. Before ordering, please read **Installation Instructions and Cautions** on A-77.

Examples of part number:

- 2-port type (1 in, 1 out): FLR-26L-30-250-00-00
- 3-port type (1 in, 2 out): ,FLR-25S-45-1000-00-00-00

Line Pressure Regulators

FLR-3 Series Medium Flow Diaphragm Regulators

Features

- ⦿ For high inlet pressure applications
- ⦿ Balanced poppet
- ⦿ With large orifice to minimize outlet pressure change when inlet pressure reduces
- ⦿ Large diameter convoluted diaphragm to increase pressure sensitivity
- ⦿ 316L SS body for corrosive or toxic gases, Brass body for non-corrosive gases
- ⦿ With special cleaning and packaging, applicable to oxygen-enriched environments
- ⦿ Three port configurations available
- ⦿ Panel mounted or installed with screws at the bottom
- ⦿ Fitted with captured vent as standard

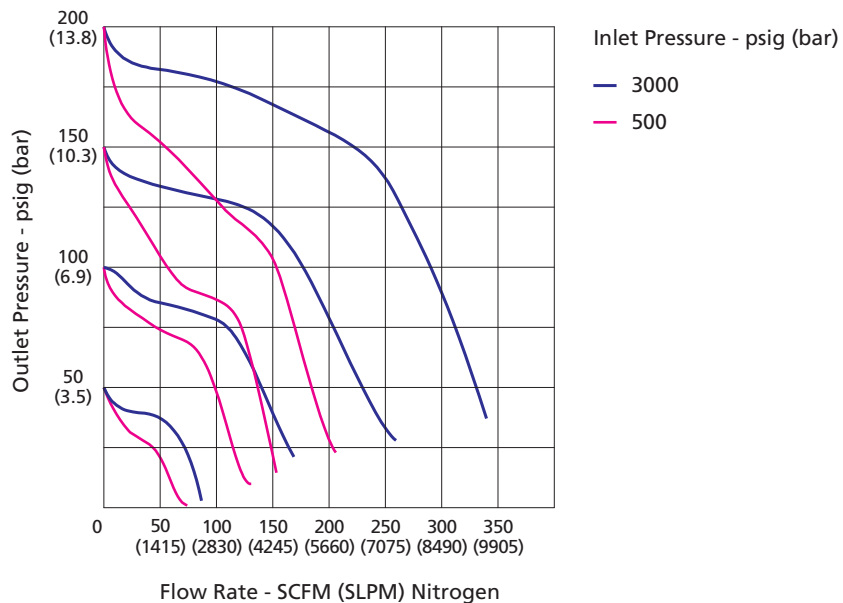


Model: FLR-3SS-30-100-04-04-Z

Technical Data

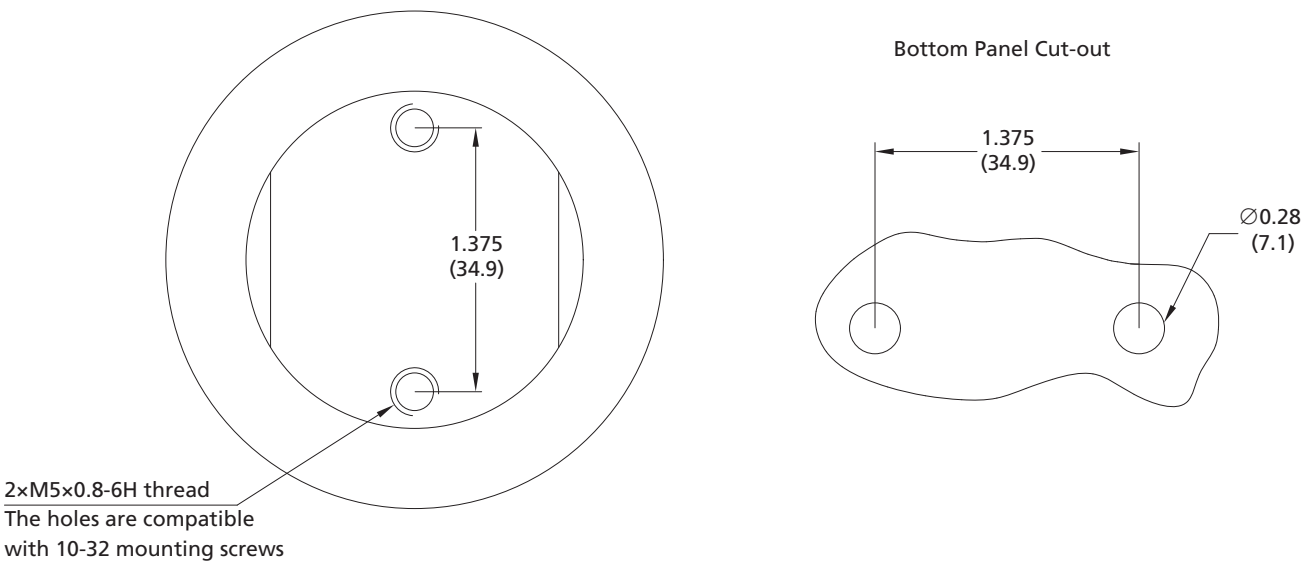
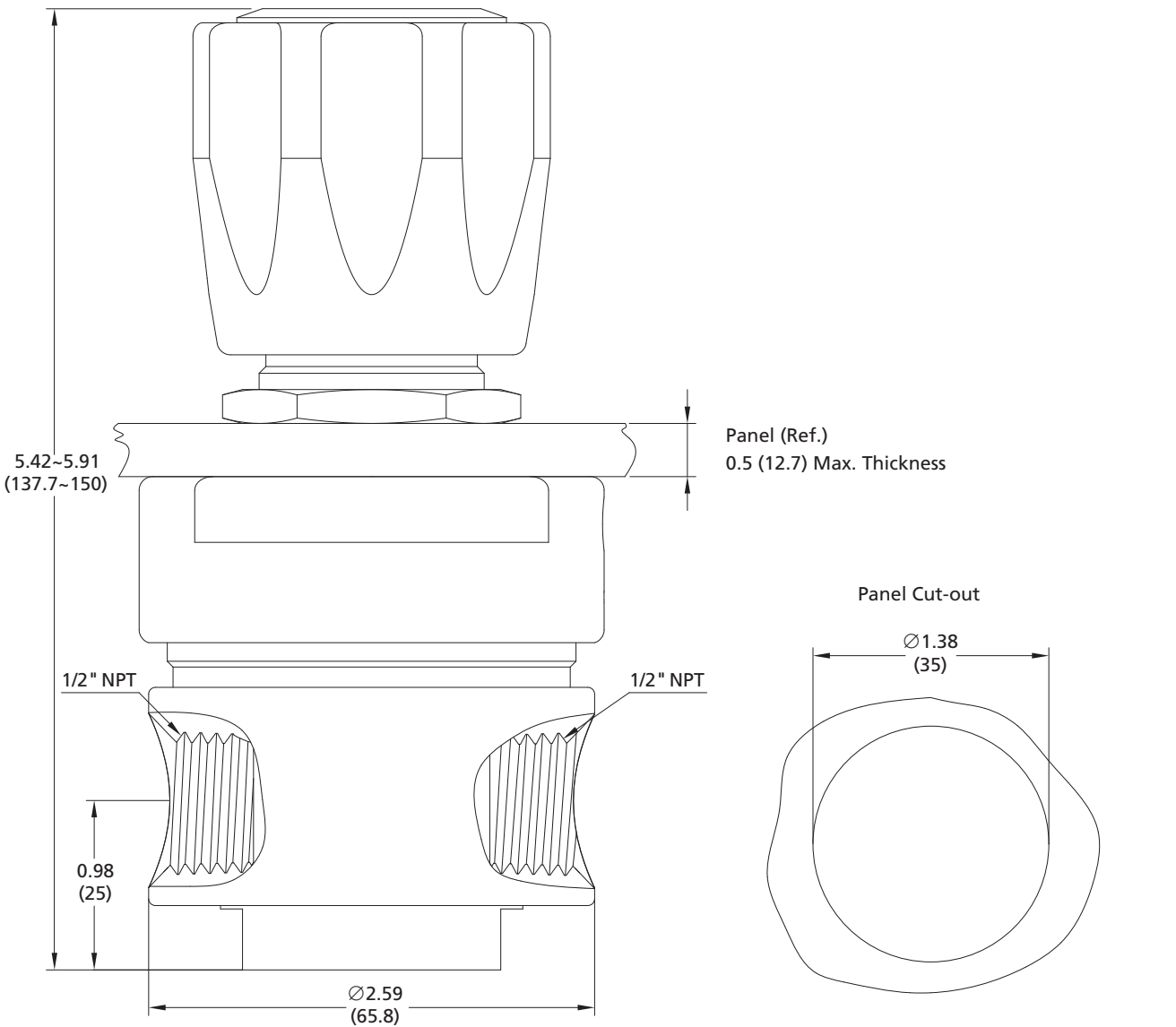
- ⦿ Single-stage regulator
- ⦿ Maximum inlet pressure: 500 or 3000 psig
- ⦿ Outlet pressure range: 0~25, 0~50, 0~100, 0~150 or 0~200 psig
- ⦿ Material of the internal components:
 - Seat: PCTFE
 - Diaphragm: Hastelloy
- ⦿ Temperature: -40°F~+140°F (-40°C~+60°C)
- ⦿ Leak rates:
 - Internal: Bubble-tight
 - External: $\leq 1 \times 10^{-9}$ mbar·l/s helium
- ⦿ Flow coefficient (Cv): 1.0
- ⦿ Weight (regulator only): ≈ 3.53 lbs (1.6 kg)
- ⦿ Body ports: 1/2" female NPT for inlet, outlet
1/4" female NPT for gauge

Typical Flow Chart

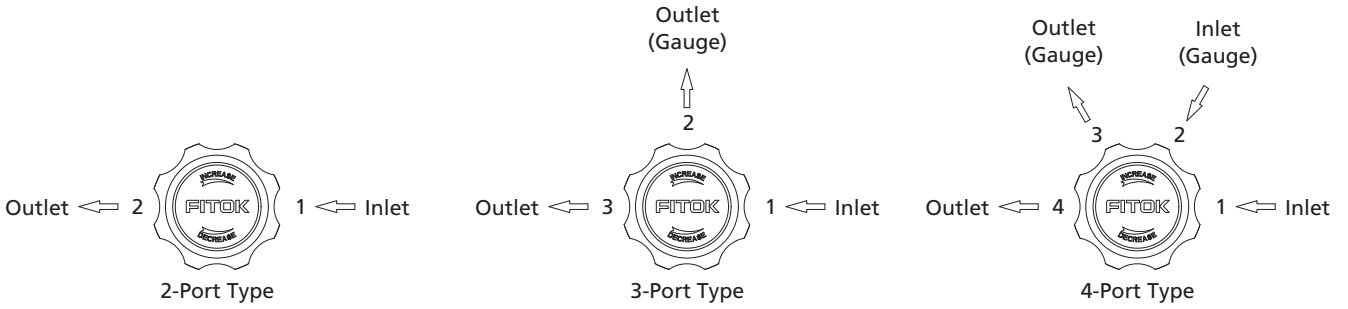


Dimensions

Dimensions, in inches (millimeters), are for reference only.



Port Configurations



Gas Control Equipment

Related Products

Technical References

Part Number Description

FLR - 3B - 30 - 100 - 04 - B - B - 04 - Z

| Body Material | | Inlet Pressure P1 | | Connection 1 | | Connection 2 | | Connection 3 | | Connection 4 | |
|---------------|---------|-------------------|-----------|--|--------------------|--|----------------------|------------------------------|--|---------------------------------------|--|
| 6L | 316L SS | 05 | 500 psig | 04 | 1/2" Female NPT | B | With Gauge (psi/bar) | 3 Ports Same as Connection 1 | | Same as Connection 1 | |
| SS | 316 SS | 30 | 3000 psig | 11 | 3/8" Tube Fitting | M | With Gauge (psi/MPa) | 4 Ports Same as Connection 2 | | | |
| B | Brass | | | 12 | 1/2" Tube Fitting | P | Plug | | | | |
| | | | | 22 | 10 mm Tube Fitting | 00 | 1/4" Female NPT | | | | |
| | | | | 23 | 12 mm Tube Fitting | 01 | 1/4" Male NPT | | | | |
| | | | | Other connections are available upon request | | 10 | 1/4" Tube Fitting | | | | |
| | | | | | | 11 | 3/8" Tube Fitting | | | | |
| | | | | | | 20 | 6 mm Tube Fitting | | | | |
| | | | | | | 21 | 8 mm Tube Fitting | | | | |
| | | | | | | Other connections are available upon request | | | | | |
| | | | | | | | | | | Installation Type | |
| | | | | | | | | | | Not Required | |
| | | | | | | | | | | Z Installed with One Panel Nut | |
| | | | | | | | | | | M Installed with Two Panel Nuts | |
| | | | | | | | | | | N Installed with Screws at the Bottom | |

- Notes:
- Most configurations are available.
 - Before ordering, please read **Installation Instructions and Cautions** on A-77.
- Examples of part number:
- 2-port type (1 in, 1 out): FLR-36L-30-150-04-04
 - 3-port type (1 in, 2 out): FLR-3SS-05-200-04-00-04

Line Pressure Regulators

FLR-5 Series High Flow Diaphragm Regulators

Features

- ⦿ Suitable for low pressure and high flow applications
- ⦿ Large diameter convoluted diaphragm to increase pressure sensitivity
- ⦿ 316L SS body for corrosive gases, and Brass body for non-corrosive gases
- ⦿ Fitted with captured vent as standard
- ⦿ With special cleaning and packaging, applicable to oxygen-enriched environments
- ⦿ Panel mounted or installed with screws at the bottom

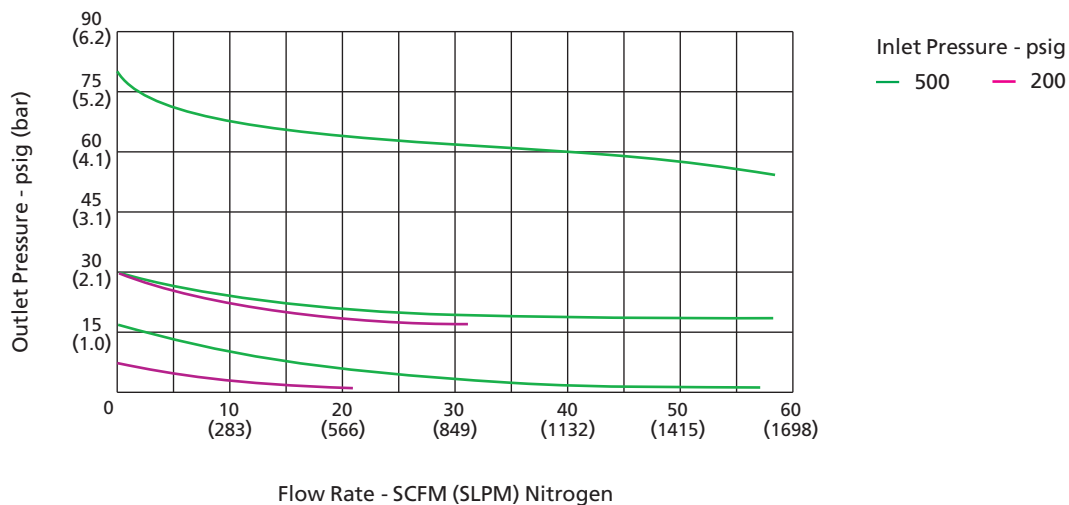
Technical Data

- ⦿ Single-stage regulator
- ⦿ Maximum inlet pressure: 500 psig
- ⦿ Outlet pressure ranges: 0~15, 0~30, 0~75, 0~150 psig
- ⦿ Material of the internal components:
 - Seat: PCTFE
 - Diaphragm: Hastelloy
- ⦿ Temperature: -40°F~+165°F (-40°C~+74°C)
- ⦿ Leak rates:
 - Internal: Bubble-tight
 - External: $\leq 1 \times 10^{-9}$ mbar.l/s helium
- ⦿ Flow coefficient (Cv): 1.8
- ⦿ Weight (regulator only): ≈ 5.95 lbs (2.7 Kg)
- ⦿ Body ports: 3/4" female NPT for inlet, outlet,
1/4" female NPT for gauge



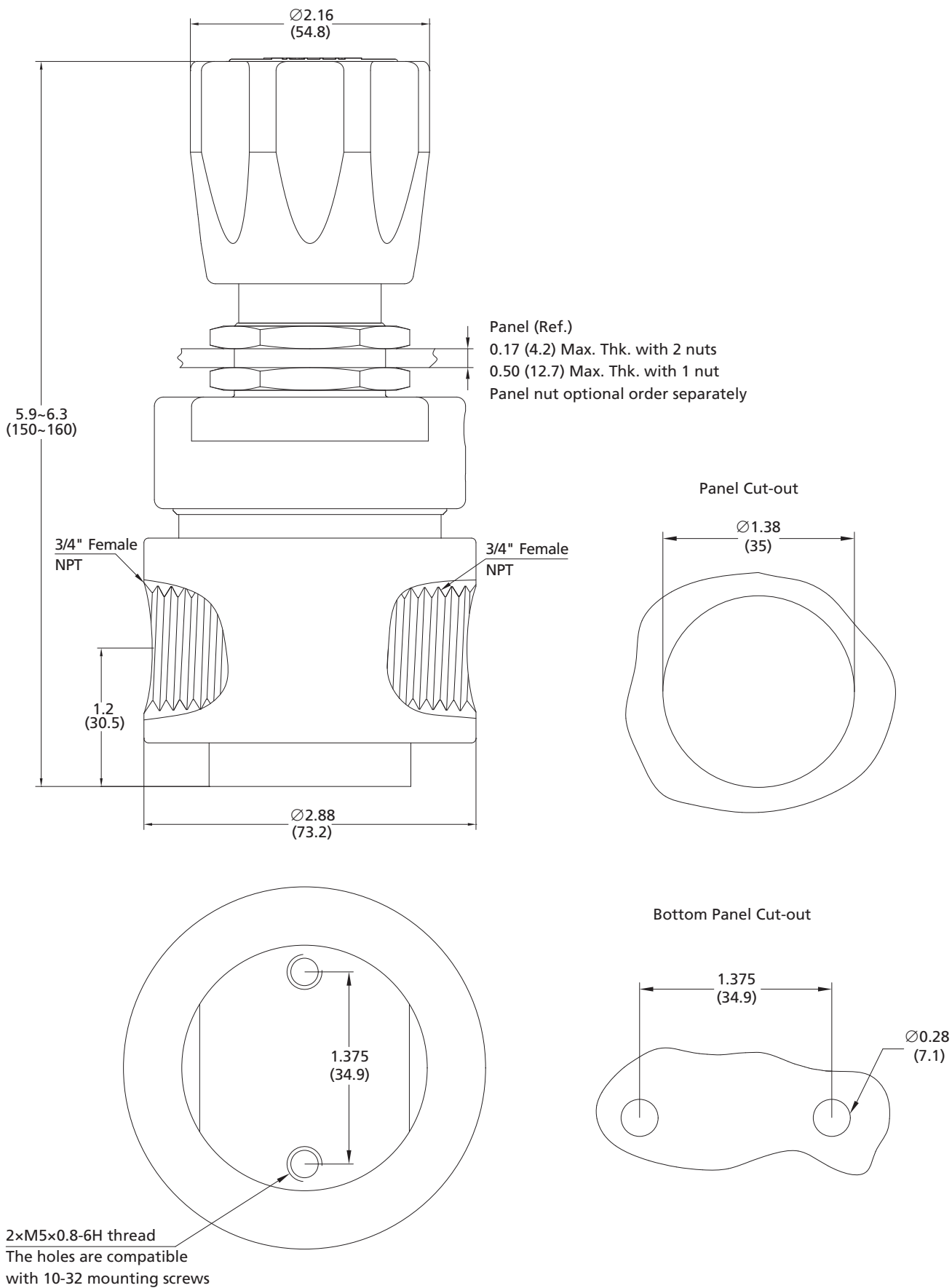
Model: FLR-56L-05-100-04-04-Z

Typical Flow Chart

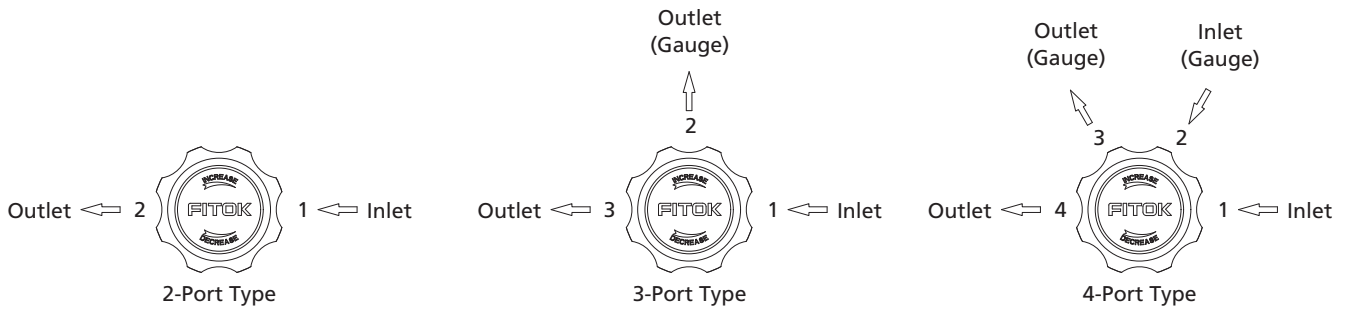


Dimensions

Dimensions, in inches (millimeters), are for reference only.



Port Configurations



Part Number Description

FLR - 56L - 05 - 150 - 05 - B - B - 05 - Z

| Body Material | |
|---------------|---------|
| 6L | 316L SS |
| SS | 316 SS |
| B | Brass |

| Inlet Pressure P1 | |
|-------------------|----------|
| 05 | 500 psig |

| Outlet Pressure Range P2 | |
|--------------------------|------------|
| 15 | 0~15 psig |
| 30 | 0~30 psig |
| 75 | 0~75 psig |
| 150 | 0~150 psig |

| Connection 1 | |
|--|--------------------|
| 05 | 3/4" Female NPT |
| 14 | 3/4" Tube Fitting |
| 16 | 1" Tube Fitting |
| 25 | 16 mm Tube Fitting |
| 26 | 18 mm Tube Fitting |
| 27 | 20 mm Tube Fitting |
| 28 | 22 mm Tube Fitting |
| Other connections are available upon request | |

| Connection 2 | |
|--|----------------------|
| B | With Gauge (psi/bar) |
| M | With Gauge (psi/MPa) |
| P | Plug |
| 00 | 1/4" Female NPT |
| 01 | 1/4" Male NPT |
| 10 | 1/4" Tube Fitting |
| 11 | 3/8" Tube Fitting |
| 20 | 6 mm Tube Fitting |
| 21 | 8 mm Tube Fitting |
| Other connections are available upon request | |

| Connection 3 | |
|----------------------|--|
| Same as Connection 2 | |

| Connection 4 | |
|----------------------|--|
| Same as Connection 1 | |

| Installation Type | |
|-------------------|-------------------------------------|
| Not Required | |
| Z | Installed with One Panel Nut |
| M | Installed with Two Panel Nuts |
| N | Installed with Screws at the Bottom |

Notes:

- Most configurations are available.
- Before ordering, please read **Installation Instructions and Cautions** on A-77.

Examples of part number:

- 2-port type (1 in, 1 out): FLR-56L-05-150-05
- 3-port type (1 in, 2 out): FLR-56L-05-30-05-B-05
- 4-port type (2 in, 2 out): FLR-5SS-05-150-05-B-B-05

Line Pressure Regulators

FBR-1 Series Miniature Piston Regulators

Features

- ⦿ Applicable to non-corrosive gases or low-viscosity liquids
- ⦿ Easy to assemble and disassemble, convenient replacement of springs with different output ranges
- ⦿ Robust piston-sensed design to provide safety and reliability
- ⦿ With special cleaning and packaging, applicable to oxygen-enriched environments

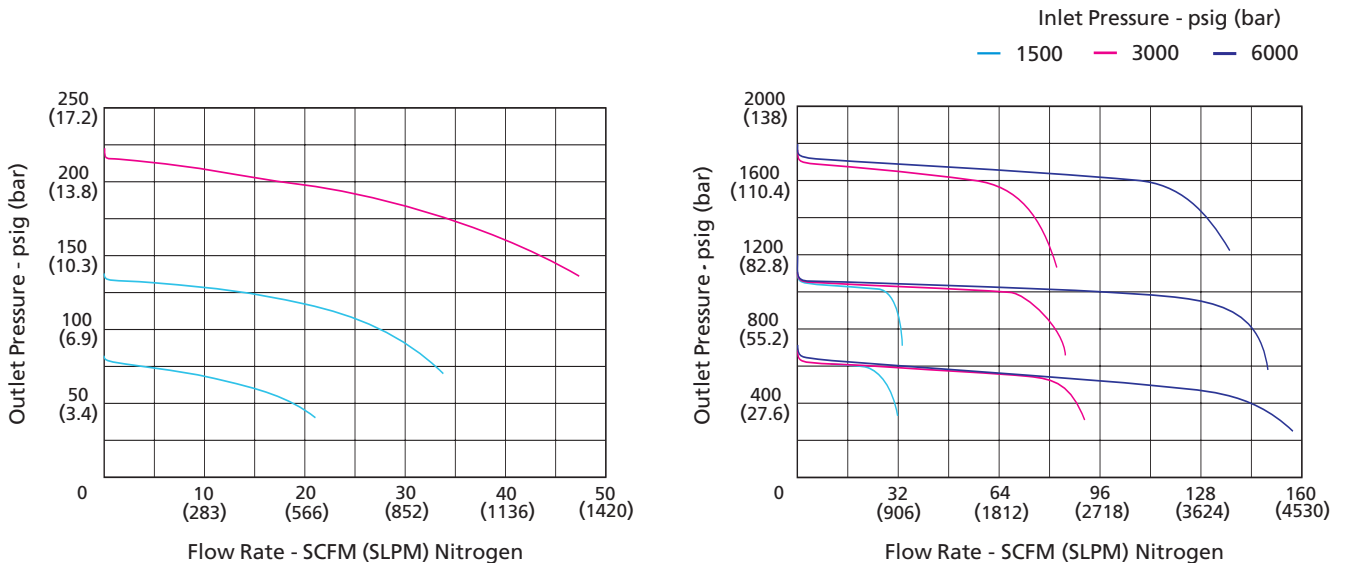


Model: FBR-15S-60-220-00-00-00

Technical Data

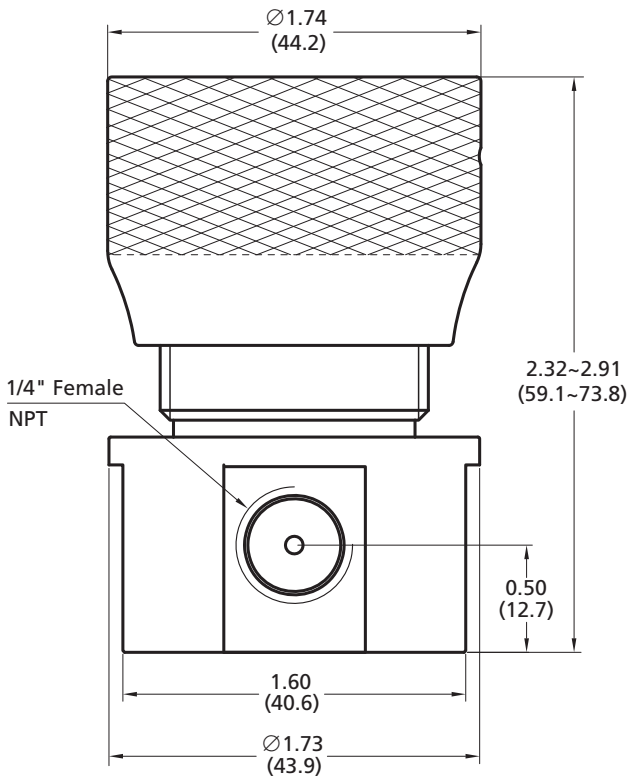
- ⦿ Media contact materials
 - Body: 316, 316L or Brass (Nickel-plated)
 - Seat: PCTFE, PEEK or Vespel
 - Piston: Aluminium Alloy
 - O-ring: Viton, Kalrez or Buna-N
 - Filter: 316L
- ⦿ Operating conditions
 - Maximum rated inlet pressure: 6000 psig
 - Outlet pressure ranges: 0~80, 0~140, 0~220, 0~700, 0~1200, 0~1800 psig
 - Temperature: -15°F~+165°F (-26°C~+74°C)
- ⦿ Functional performance
 - Test pressure: 150% of maximum rated pressure
 - Burst pressure: 300% of maximum rated pressure
 - Leak rates:
 - Internal: Bubble-tight
 - External: Bubble-tight
- ⦿ Flow coefficient (Cv): 0.06
- ⦿ Weight(regulator only): 0.93 lbs (0.4 kg)
- ⦿ Body ports: 1/4" female NPT for inlet and outlet

Typical Flow Chart

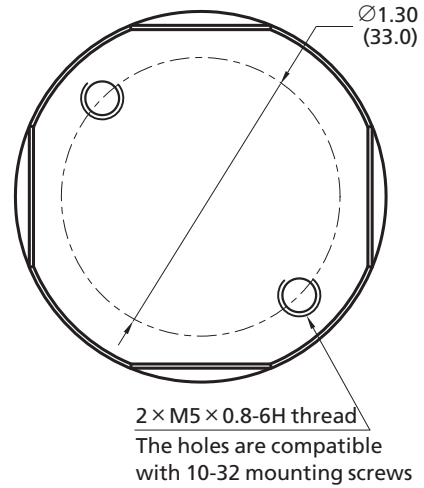


Dimensions

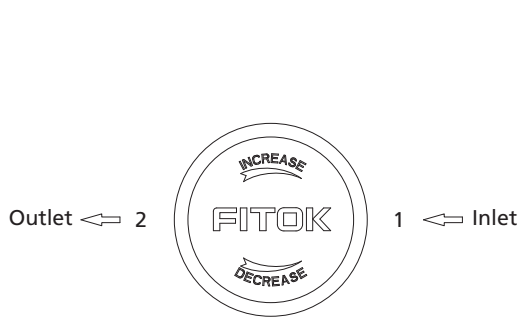
Dimensions, in inches (millimeters), are for reference only.



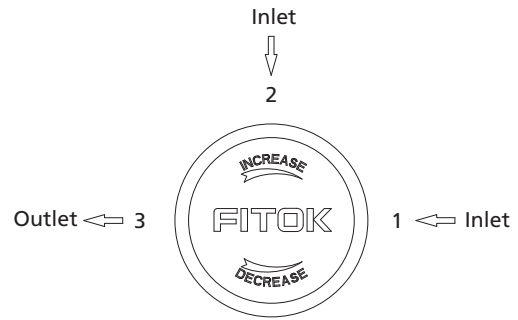
Bottom Panel Cut-outs



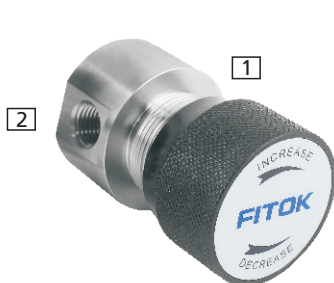
Port Configurations



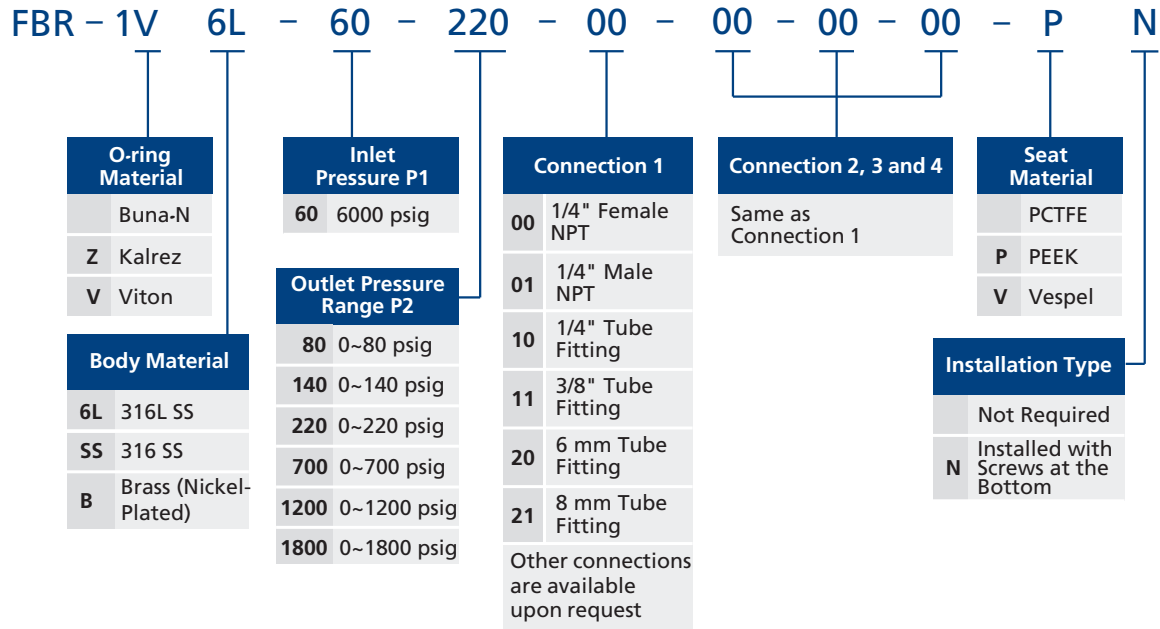
2-Port Type



4-Port Type



Part Number Description



Notes:

1. Most configurations are available.
2. Before ordering, please read **Installation Instructions and Cautions** on A-77.

Examples of part number:

- a. 2-port type (1 in, 1 out): FBR-16L-60-80-00-00
- b. 4-port type (2 in, 2 out): FBR-16L-60-80-00-00-00-00

High Pressure Regulators

HPR-10 Series High Pressure Piston Regulators

Features

- ⦿ 316 Stainless steel or brass body optional
- ⦿ Robust piston sensed design
- ⦿ Stable outlet pressure and easy tune
- ⦿ 7 different outlet pressure ranges
- ⦿ All pressure ranges can be vented to 0 psig
- ⦿ Applicable to general gases or liquid
- ⦿ Panel mountable

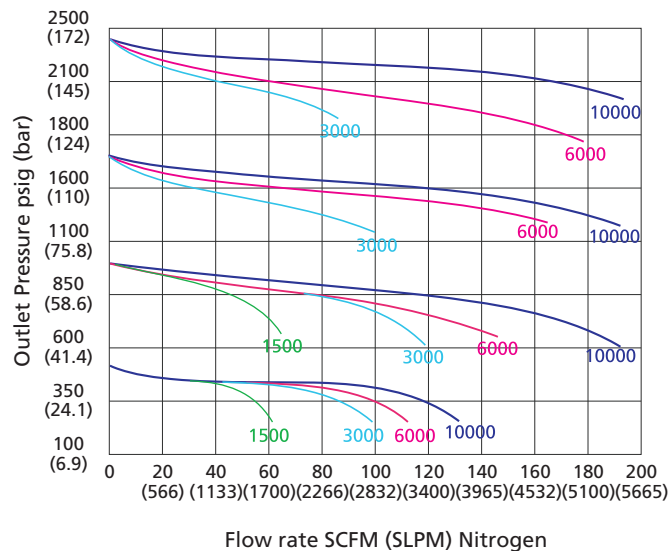
Technical Data

- ⦿ Maximum inlet pressure:
Stainless: 10000 psig
Brass: 6000 psig
- ⦿ Outlet pressure range: 10~500, 15~800, 15~1500, 30~2500, 50~4000, 60~6000 or 200~10000 psig
- ⦿ Materials of the internal components:
Seat: PEEK
Piston: 316L
O-rings: Viton or NBR
Filter: 316L
- ⦿ Temperature: -15°F~+165°F (-26°C~+74°C)
- ⦿ Leak rates:
Internal: Bubble-tight
External: Bubble-tight
- ⦿ Flow coefficient (Cv): 0.06
- ⦿ Weight: ≈5.75 lbs (2.6 kg)
- ⦿ Body ports: 1/4" female NPT for inlet, outlet and gauge



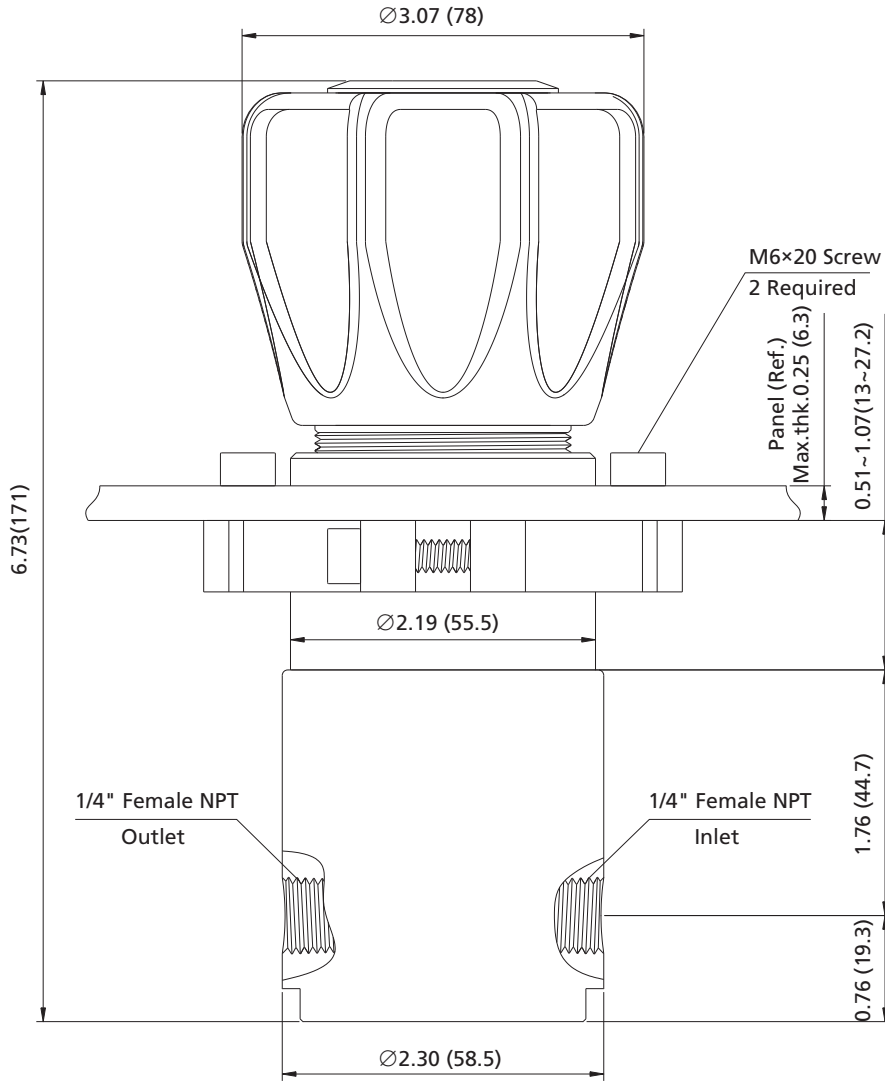
Model: HPR-10SSN-100-100-00-00-ZV

Flow Chart



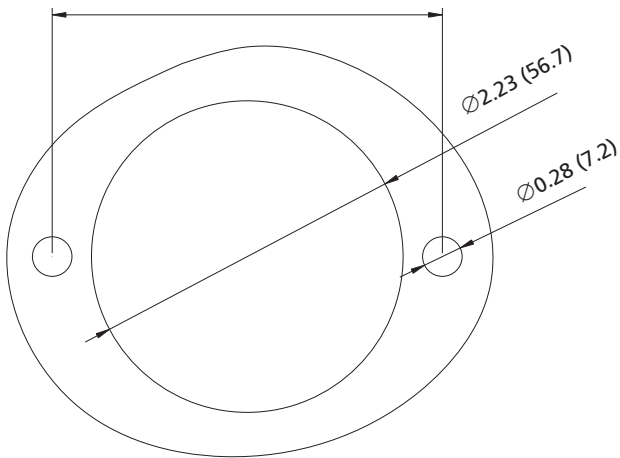
Dimensions

Dimensions, in inches (millimeters), are for reference only.

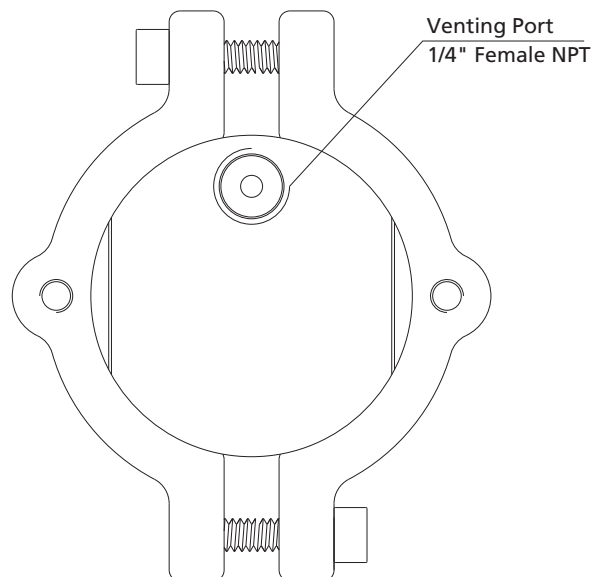


Panel Cut-outs

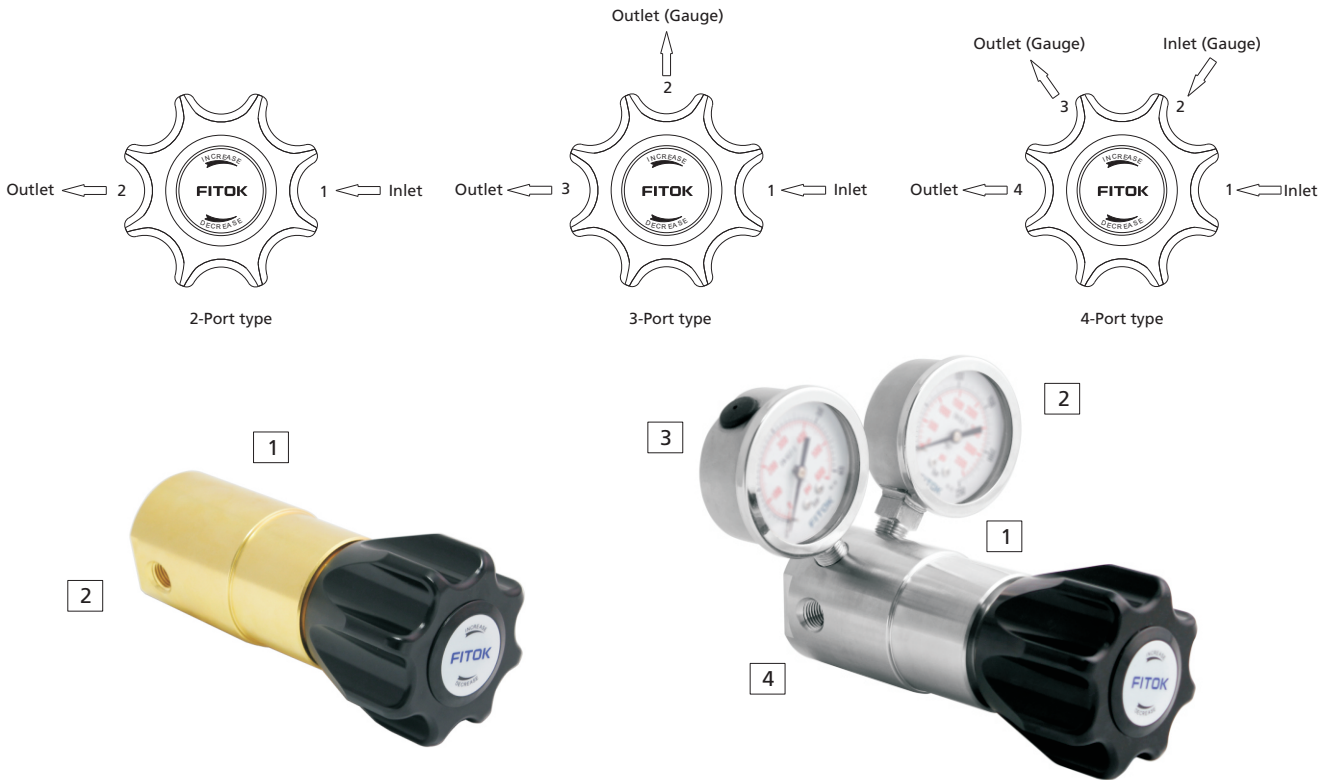
2.79 (71.0)



Bottom View



Port Configurations



Part Number Description

| | | | | | |
|--|---------------------------------|--|--|---------------------------------|----------------------|
| HPR - 10BN - 60 - 10 - 12 - B - B - 00 - ZV-F2 | | | | | |
| Body Material | Inlet Pressure P1 | Connection 1 | Connection 2 | Connection 3 | Panel Mount |
| SS 316 SS | 60 6000 psig | 00 1/4" Female NPT | B With Gauge (psi/bar) | Same as Connection 2 | Without |
| B Brass (Max. Inlet Pressure 6000 psig) | 100 10000 psig | 01 1/4" Male NPT | M With Gauge (psi/MPa) | Connection 4 | Z With |
| O-ring Material | Outlet Pressure Range P2 | 10 1/4" Tube Fitting | P Plug | | Same as Connection 1 |
| Viton | 5 10~500 psig | 11 3/8" Tube Fitting | 00 1/4" Female NPT | Product Technology Grade | Without |
| N NBR | 8 15~800 psig | 20 6 mm Tube Fitting | 01 1/4" Male NPT | | V With |
| | 15 15~1500 psig | 21 8 mm Tube Fitting | 10 1/4" Tube Fitting | | General Purpose |
| | 25 30~2500 psig | Other connections are available upon request | 11 3/8" Tube Fitting | | |
| | 40 50~4000 psig | | 20 6 mm Tube Fitting | | |
| | 60 60~6000 psig | | 21 8 mm Tube Fitting | Special Cleaning and Packaging | |
| | 100 200~10000 psig | | Other connections are available upon request | | |

Notes:

1. Most configurations are available but not everyone.
2. Venting port can not be blocked.
3. For liquid services, install the regulator with the venting port pointed vertically down.
4. Before ordering, please read **Installation Instructions and Cautions** on A-77.

Examples of part number:

- a. 2-port type (1 in, 1 out): HPR-10SS-60-40-00-00
- b. 3-port type (1 in, 2 out): HPR-10B-60-60-00-B-00
- c. 4-port type (2 in, 2 out): HPR-10SS-100-25-00-B-B-00

Line Pressure Regulators

HPL-06 Series High Pressure High Flow Regulators

Features

- ⦿ For high pressure and high flow applications
- ⦿ Large piston sensor gives excellent sensitivity
- ⦿ Balanced valve design ensures stable downstream pressure
- ⦿ Three port configurations available
- ⦿ Panel mounting available
- ⦿ With special cleaning and packaging, applicable to oxygen-enriched environments

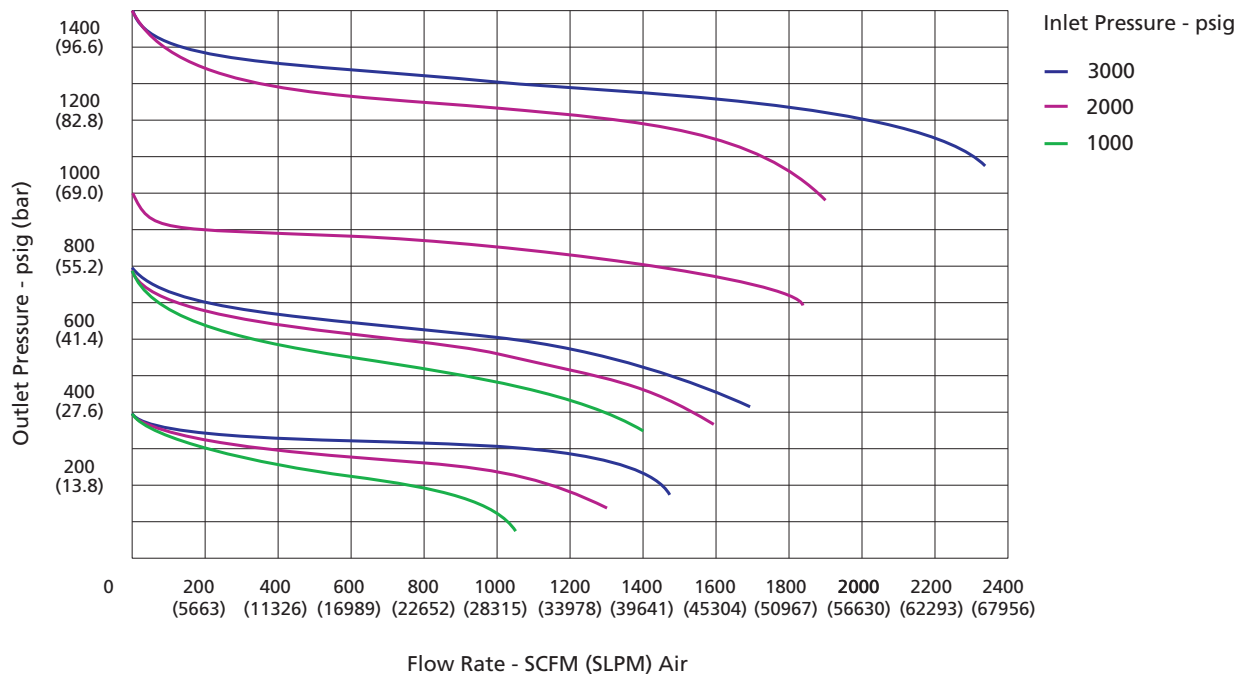
Technical Data

- ⦿ Maximum inlet pressure:
Stainless steel: 4500 psig
Brass: 3750 psig
- ⦿ Outlet pressure ranges: 0~300, 0~600, 0~1000, 0~1500 psig
- ⦿ Material of the main components:
Body: 316 SS or brass
Seat: PCTFE
Piston: 316L
O-rings: Viton or Kalrez
- ⦿ Temperature: -15°F~+220°F (-26°C~+104°C)
- ⦿ Leak rates:
Internal: Bubble-tight
External: Bubble-tight
- ⦿ Flow coefficient (Cv): 2.0
- ⦿ Weight (regulator only): ≈ 6.25 lbs (2.83 Kg)
- ⦿ Body ports: 1/2" female NPT for inlet, outlet,
1/4" female NPT for gauge



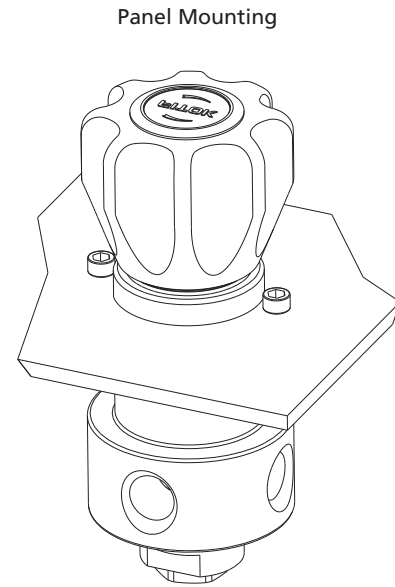
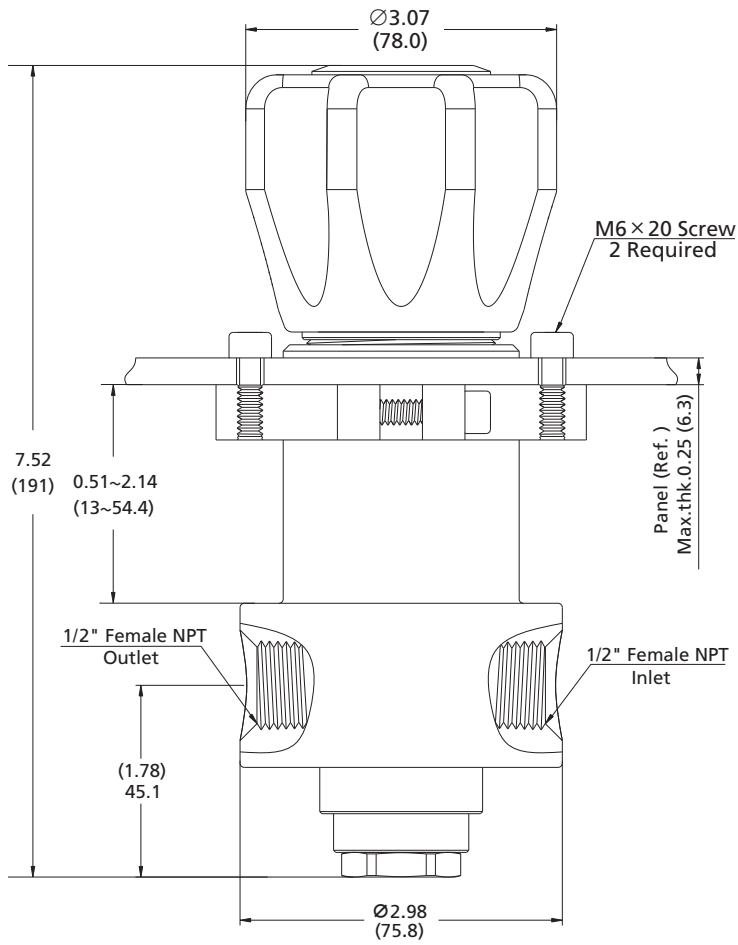
Model: HPL-06SS-45-1000-04-04-Z

Typical Flow Chart

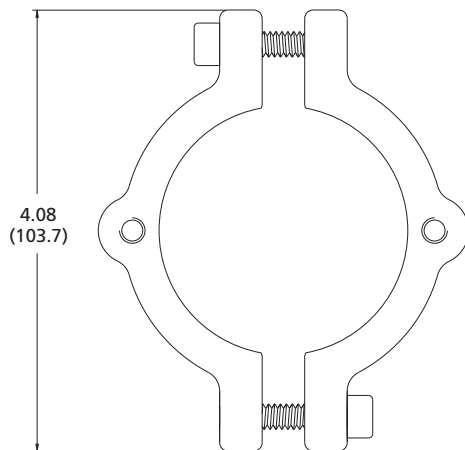


Dimensions

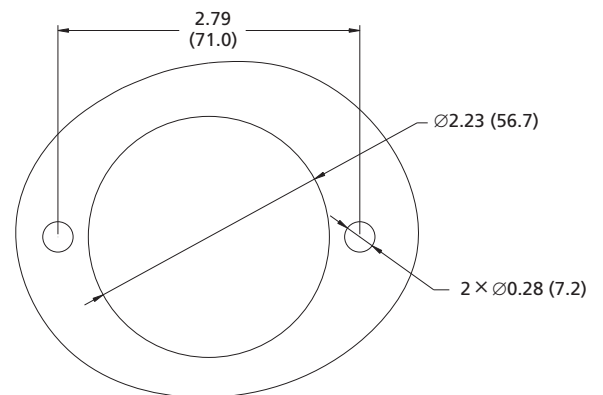
Dimensions, in inches (millimeters), are for reference only.



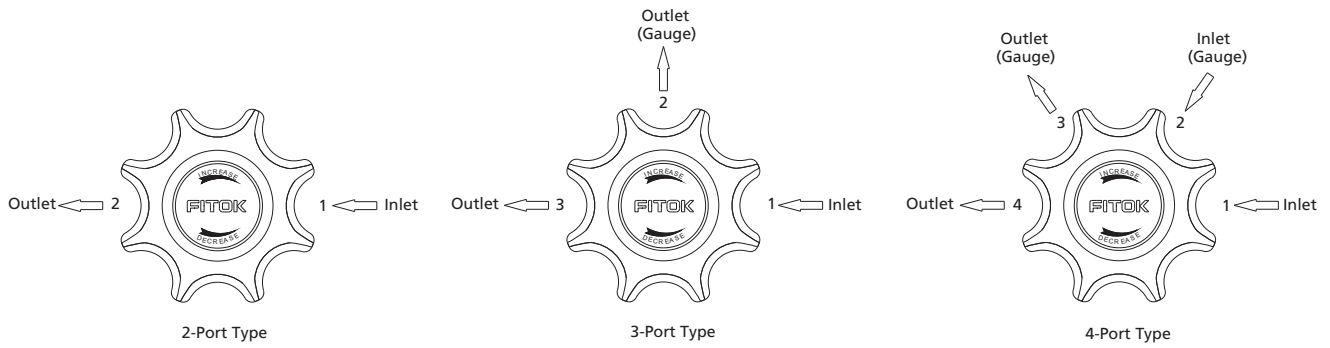
Panel Mounting Kit



Panel Cut-out



Port Configurations



Part Number Description

HPL - 06V Z 6L - 45 - 600 - 04 - B - B - 04 - Z

| Vent Option | Body Material | Inlet Pressure P1 | Connection 1 | Connection 2 | Connection 3 |
|-------------|---------------------------------------|---------------------------------|--|--|----------------------|
| Without | SS 316 SS | 37 3750 psig | 04 1/2" Female NPT | B With Gauge (psi/bar) | Same as Connection 2 |
| V With | 6L 316L SS | 45 4500 psig | 05 3/4" Female NPT | M With Gauge (psi/MPa) | |
| | Brass (Max. Inlet Pressure 3750 psig) | | 14 3/4" Tube Fitting | P Plug | Connection 4 |
| | B | Outlet Pressure Range P2 | 25 16 mm Tube Fitting | 00 1/4" Female NPT | Same as Connection 1 |
| | | 300 0~300 psig | 26 18 mm Tube Fitting | 01 1/4" Male NPT | |
| | | 600 0~600 psig | Other connections are available upon request | 10 1/4" Tube Fitting | Panel Mount |
| | | 1000 0~1000 psig | | 11 3/8" Tube Fitting | Without |
| | | 1500 0~1500 psig | | 20 6 mm Tube Fitting | Z With |
| | | | | 21 8 mm Tube Fitting | |
| | | | | Other connections are available upon request | |

Notes:

- Most configurations are available.
- Before ordering, please read **Installation Instructions and Cautions** on A-77.

Examples of part number:

- 2-Port type (1 in, 1 out): HPL-06B-37-600-04-04
- 3-Port type (1 in, 2 out): HPL-066L-45-1000-04-B-04
- 4-Port type (2 in, 2 out): HPL-065S-45-1500-04-B-B-04