304 Series

single stage, brass barstock line regulator

Description

The 304 Series regulators are intended for secondary pressure control of non-corrosive, high purity or liquefied gases or as point of use pressure control in high purity gas distribution systems.

Advanced Features

- Chrome-plated brass barstock body
  Smooth surface finish
- Rear panel mountable
  Easy installation
- Pressure ranges 0-15 to 0-500 PSIG
  Broad range of applications
- 3000 PSIG inlet pressure rating
  Safe use with high pressure cylinders

Typical Applications

- Bulk gas distribution systems
- Gas and liquid chromatography
- High purity carrier gases
- Zero, span, and calibration gases
- High purity chamber pressurization
- Liquefied hydrocarbon gas control
- Control of cryogenic gases

300 Series Advantage

- *Capsule® seat*
  Increased serviceability and life
- *316L stainless steel diaphragm*
  No inboard diffusion
- *Low wetted surface area*
  Minimal purge requirements
- *Field-adjustable pressure limit*
  Safeguard downstream equipment
- *Convoluted diaphragm*
  Smooth pressure changes
- *Compact design*
  Easily transported and integrated

Materials

Body
Chrome-plated brass barstock

Bonnet
Chrome-plated die cast zinc

Seat
PTFE

Filter
10 micron sintered bronze

Diaphragm
316L stainless steel

Internal Seals
PTFE

Specifications

Maximum Inlet Pressure
3000 PSIG (210 BAR)

Temperature Range
-40°F to 140°F (-40°C to 60°C)

Gauges
2” diameter chrome-plated

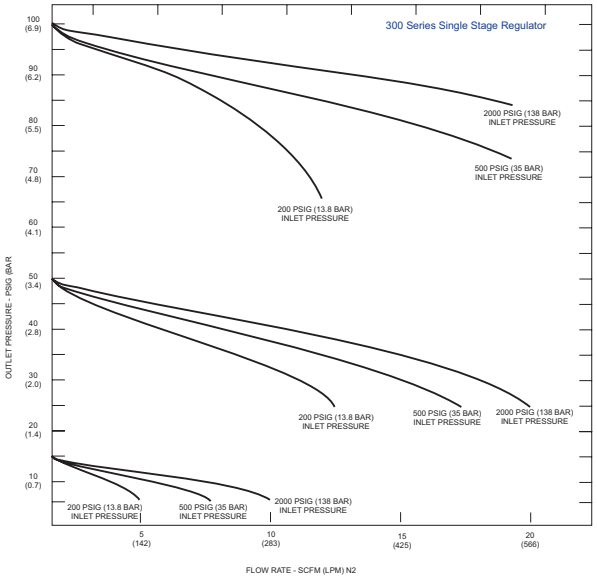
Ports
¼” FPT

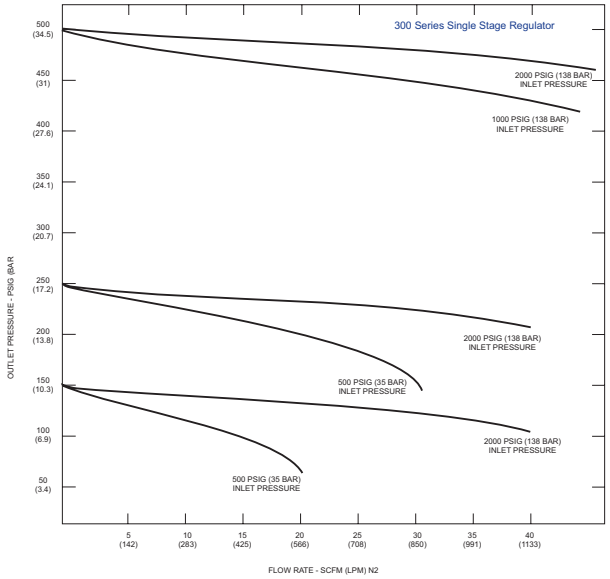
Helium Leak Integrity
1 x 10^{-9} scc/sec

Cv
0.1 (Max outlet 50 PSIG or below)
0.2 (Max outlet about 50 PSIG)

Weight (304-2021-TF4)
1.7 lbs. (0.78 kg)

Flow Performance





Ordering Information and Configuration Options

304	A		B	C	D	-Inlet	Options
Series 304	**Outlet Pressure**	**Outlet Gauge**	**Inlet Gauge**	**Outlet Assemblies**	**Assembly/ Gauges**	**Inlet Connections**	**Installed Options**
	1: 0-15	30”-0-30 PSIG	**0:** None	**0:** ¼” FPT Port	**0:** Bare Body	**000:** ¼” FPT	None
	2: 0-50	30”-0-100 PSIG		**1:** ¼” MPT	**1:** Standard Assembly (PSIG/kPa Gauges)	**TF2:** ⅛” Tube	
	3: 0-100	30”-0-200 PSIG		**2:** ¼” Tube Fitting	**2:** Standard Assembly (BAR/PSIG Gauges)	**TF4:** ¼” Tube	
	4: 0-250	0-400 PSIG		**3:** Diaphragm Valve ¼” Tube Fitting		**TF6:** ⅜” Tube	
	5: 0-500	0-1000 PSIG		**4:** Diaphragm Valve ¼” MPT		**M06:** 6mm Tube	
	7: 0-150	30”-0-200 PSIG		**5:** Needle Valve ¼” MPT			
				6: ⅛” Tube Fitting			
				7: ⅜” Tube Fitting			
				8: Diaphragm Valve ⅛” Tube Fitting			
				9: Diaphragm Valve ¼” FPT			
				A: ⅜” BSP Right Hand Fitting			
				M: 6mm Tube Fitting			
				S: Diaphragm Valve 6mm Tube Fitting			

445 Series

single stage, stainless steel barstock line regulator

Description

The 445 Series regulators are intended for secondary pressure control of ultra high purity and corrosive gases or as point-of- use pressure control in high purity gas distribution systems.

Advanced Features

- Stainless steel barstock body
  Smooth surface finish
- Front and rear panel mountable
  Versatile system configuration
- Pressure ranges 0-15 to 0-500 PSIG
  Broad range of applications
- 3000 PSIG inlet pressure rating
  Safe use with high pressure cylinders

Typical Applications

- Bulk gas distribution systems
- Gas and liquid chromatography
- High purity carrier gases
- Zero, span and calibration gases
- High purity chamber pressurization
- Liquefied hydrocarbon gas control
- Control of cryogenic gases
- Corrosive service

400 Series Advantage

- *Metal-to-metal diaphragm seal*
  No possibility of gas contamination
- *Capsule® seat*
  Increased serviceability and life
- *316L stainless steel diaphragm*
  No inboard diffusion
- *Orientable captured vent capable*
  Safety in any installation
- *Low wetted surface area*
  Minimal purge requirements
- *Field-adjustable pressure limit*
  Safeguard downstream equipment
- *Pipe away relief valve*
  Safely vent exhaust gases
- *Delivery pressure range easily changed*
  Maximum flexibility

Materials

Body
316L stainless steel barstock

Bonnet
Chrome-plated brass barstock

Seat
PTFE

Filter
10 micron stainless steel multi-layer mesh

Diaphragm
316L stainless steel

Internal Seals
PTFE

Specifications

Maximum Inlet Pressure
3000 PSIG (210 BAR)

Temperature Range
-40°F to 140°F (-40°C to 60°C)

Gauge
2” diameter stainless steel

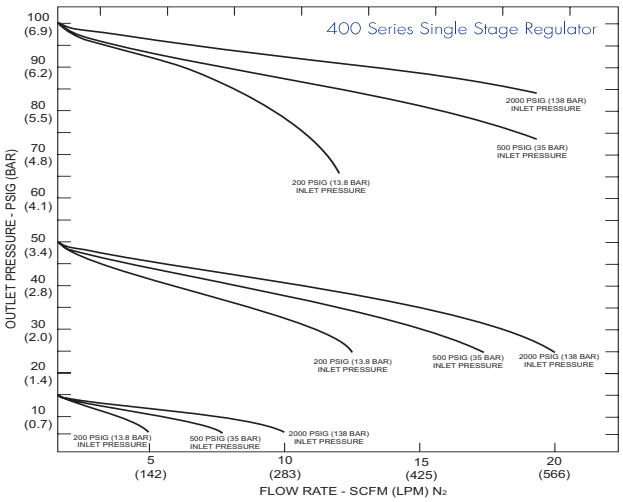
Ports
¼” FPT

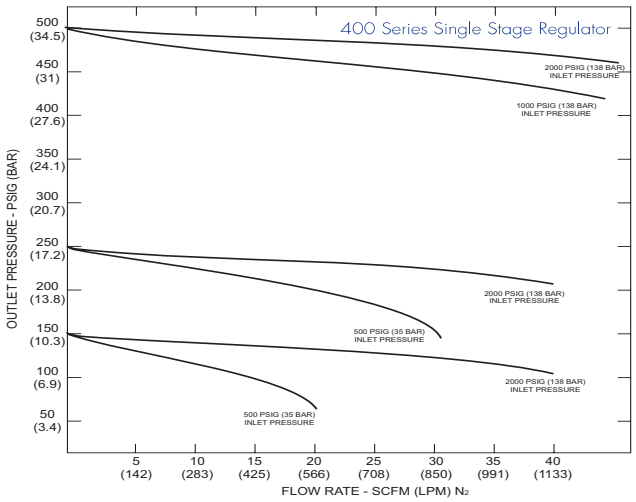
Helium Leak Integrity
1 x 10^{-9} scc/sec

Cv
0.1 (Max outlet 50 PSIG or below)
0.2 (Max outlet above 50 PSIG)

Weight (445-2021-TF4)
2.57 lbs. (1.17 kg)

Flow Performance





Ordering Information and Configuration Options

445	A	B	C	D	-Inlet	Options
Series 445	**Outlet Pressure / Outlet Gauge** **1:** 0-15 — 30”-0-30 PSIG **2:** 0-50 — 30”-0-100 PSIG **3:** 0-100 — 30”-0-200 PSIG **4:** 0-250 — 0-400 PSIG **5:** 0-500 — 0-1000 PSIG **7:** 0-150 — 30”-0-200 PSIG	**Inlet Gauge** **0:** None	**Outlet Assemblies** **0:** ¼” FPT Port **1:** ¼” MPT **2:** ¼” Tube Fitting **3:** Diaphragm Valve ¼” Tube Fitting **4:** Diaphragm Valve ¼” MPT **5:** Needle Valve ¼” MPT **6:** ⅛” Tube Fitting **7:** ⅜” Tube Fitting **8:** Diaphragm Valve ⅛” Tube Fitting **9:** Diaphragm Valve ¼” FPT **M:** 6mm Tube Fitting **S:** Diaphragm Valve 6mm Tube Fitting	**Assembly/ Gauges** **0:** Bare Body **1:** Standard Assembly (PSIG/kPa Gauge) **2:** Standard Assembly (BAR/PSIG Gauge) **4:** Cleanroom Assembly (PSIG/kPa Gauge) **5:** Cleanroom Assembly (BAR/PSIG Gauge)	**Inlet Connections** **000:** ¼” FPT **TF2:** ⅛” Tube **TF4:** ¼” Tube **TF6:** ⅜” Tube **M06:** 6mm Tube	**Installed Options** **S:** Stainless Steel Bonnet
Related Options	• Panel Mount Kit (550-0002) • Captured Vent Kit (550-0001)		• Helium Leak Certification (476-0002) • Passivation for Fluorine Service			

483 Series

high flow, single stage, brass barstock line regulator

Description

The 483 Series regulator applications are wide and varied including high flow purging, semiconductor manufacturing, manifold and line regulation.

Advanced Features

- Ultra High Flow
- Bulk gas distribution systems
- Gas and liquid chromatography
- High purity carrier gases
- Zero, span, and calibration gases
- High purity chamber pressurization
- Liquefied hydrocarbon gas control

Typical Applications

- Brass barstock body
  Smooth surface finish
- Rear panel mountable
  Versatile system configuration
- Pressure ranges 0-15 to 0-250 PSIG
  Broad range of applications
- 3000 PSIG inlet pressure rating
  Safe use with high pressure cylinders

400 Series Advantage

- *Metal-to-metal diaphragm seal*
  No possibility of gas contamination
- *Capsule® seat*
  Increased serviceability and life
- *316L stainless steel diaphragm*
  No inboard diffusion
- *Orientable captured vent capable*
  Safety in any installation
- *Low wetted surface area*
  Minimal purge requirements
- *Field-adjustable pressure limit*
  Safeguard downstream equipment
- *Pipe away relief valve*
  Safely vent exhaust gases
- *Delivery pressure range easily changed*
  Maximum flexibility

Materials

Body
Brass barstock

Bonnet
Chrome-plated die cast zinc

Seat
PCTFE

Filter
40 micron 316L stainless steel

Diaphragm
316L stainless steel

Internal Seals
PTFE

Specifications

Maximum Inlet Pressure
3000 PSIG (210 BAR)

Temperature Range
-40°F to 140°F (-40°C to 60°C)

Gauge
2” diameter brass

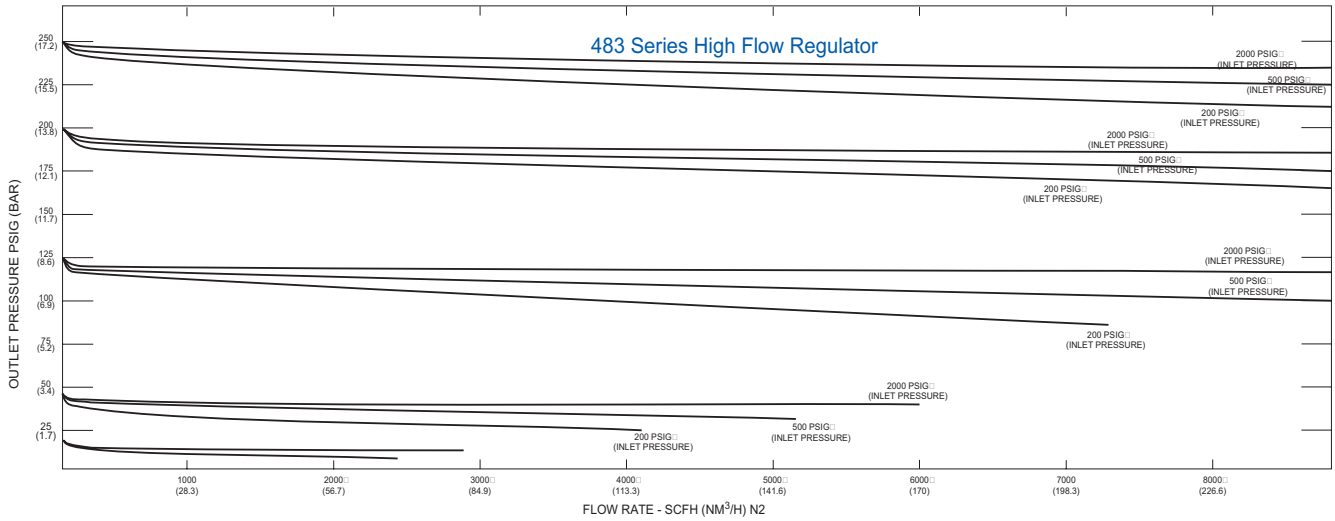
Ports
½” FPT (inlet/outlet)
¼” FPT (gauge/relief valve)

Helium Leak Integrity
1×10^{-8} scc/sec

Cv
1.0

Weight (483-3001-TF8)
4.79 lbs. (2.17 kg)

Flow Performance



Ordering Information and Configuration Options

483	A	B	C	D	-Inlet	Options
Series 483	**Outlet Pressure** / **Outlet Gauge** **1:** 0-15 / 0-30 PSIG **2:** 0-40 / 0-60 PSIG **3:** 0-120 / 0-200 PSIG **4:** 0-200 / 0-400 PSIG **5:** 0-250 / 0-400 PSIG	**Inlet Gauge** **0:** None	**Outlet Assemblies** **0:** ½" FPT Port **1:** ½" Tube Fitting **P:** 12mm Tube Fitting	**Assembly/ Gauges** **0:** Bare Body **1:** Standard Assembly (PSIG/kPa Gauges) **2:** Standard Assembly (BAR/PSIG Gauges) **6:** Mirror Image Assembly (PSIG/kPa Gauges) **7:** Mirror Image Assembly (BAR/PSIG Gauges)	**Inlet Connections** **000:** ½" FPT **TF8:** ½" Tube **M12:** 12mm Tube	**Installed Options** None
Related Options	None					

484 Series

high flow, single stage, stainless steel barstock line regulator

Description

The 484 Series regulator applications are wide and varied including high flow purging, semiconductor manufacturing, manifold and line regulation.

Advanced Features

- Ultra High Flow
- Bulk gas distribution systems
- Gas and liquid chromatography
- High purity carrier gases
- Zero, span, and calibration gases
- High purity chamber pressurization
- Liquefied hydrocarbon gas control

Typical Applications

- 316L stainless steel barstock body
  Smooth surface finish
- Rear panel mountable
  Versatile system configuration
- Pressure ranges 0-15 to 0-250 PSIG
  Broad range of applications
- 3000 PSIG inlet pressure rating
  Safe use with high pressure cylinders

400 Series Advantage

- *Metal-to-metal diaphragm seal*
  No possibility of gas contamination
- *Capsule® seat*
  Increased serviceability and life
- *316L stainless steel diaphragm*
  No inboard diffusion
- *Orientable captured vent capable*
  Safety in any installation
- *Low wetted surface area*
  Minimal purge requirements
- *Field-adjustable pressure limit*
  Safeguard downstream equipment
- *Pipe away relief valve*
  Safely vent exhaust gases
- *Delivery pressure range easily changed*
  Maximum flexibility

Materials

Body
316L stainless steel barstock

Bonnet
Chrome-plated die cast zinc

Seat
PCTFE

Filter
40 micron 316L stainless steel

Diaphragm
316L stainless steel

Internal Seals
PTFE

Specifications

Maximum Inlet Pressure
3000 PSIG (210 BAR)

Temperature Range
-40°F to 140°F (-40°C to 60°C)

Gauge
2” diameter stainless steel

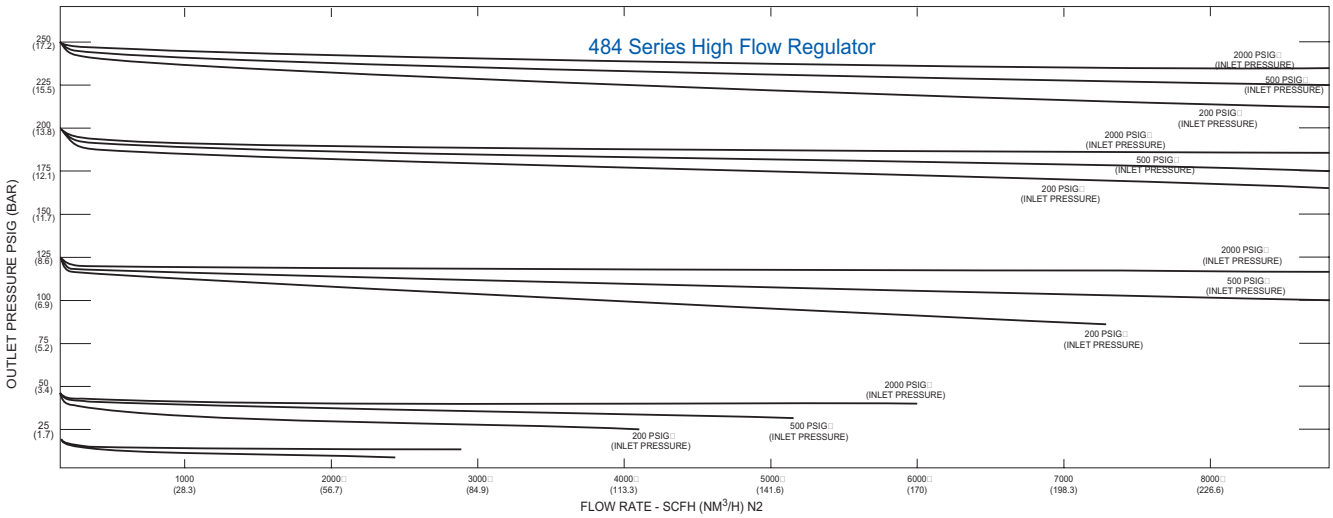
Ports
½” FPT (inlet/outlet)
¼” FPT (gauge/relief valve)

Helium Leak Integrity
1 x 10^{-8} scc/sec

Cv
1.0

Weight (484-3011-TF8)
4.52 lbs. (2.05 kg)

Flow Performance



Ordering Information and Configuration Options

484	A	B	C	D	-Inlet	Options
Series 484	**Outlet Pressure** / **Outlet Gauge** **1:** 0-15 / 0-30 PSIG **2:** 0-40 / 0-60 PSIG **3:** 0-120 / 0-200 PSIG **4:** 0-200 / 0-400 PSIG **5:** 0-250 / 0-400 PSIG	**Inlet Gauge** **0:** None	**Outlet Assemblies** **0:** ½" FPT Port **1:** ½" Tube Fitting **P:** 12mm Tube Fitting	**Assembly/ Gauges** **0:** Bare Body **1:** Standard Assembly (PSIG/kPa Gauges) **2:** Standard Assembly (BAR/PSIG Gauges)	**Inlet Connections** **000:** ½" FPT **TF8:** ½" Tube **M12:** 12mm Tube	**Installed Options** None
Related Options		None				

428 Series

single stage, stainless steel barstock line regulator

Description

The 428 Series regulators are intended for secondary pressure control of the highest purity gases or as point of use pressure control in high purity gas distribution systems.

Advanced Features

- Butt-welded VCR® connections
  Highest leak integrity available
- 316L stainless steel barstock body
  Increased corrosion resistance
- Front and rear panel mountable
  Versatile system configuration
- 3000 PSIG inlet pressure rating
  Safe use with high pressure cylinders

Typical Applications

- Semiconductor process gases
- Gas and liquid chromatography
- Ultra-high purity carrier gases
- Zero, span and calibration gases
- Liquefied hydrocarbon gas control
- Control of cryogenic gases

400 Series Advantage

- *Metal-to-metal diaphragm seal*
  No possibility of gas contamination
- *Capsule® seat*
  Increased serviceability and life
- *316L stainless steel diaphragm*
  No inboard diffusion
- *Orientable captured vent capable*
  Safety in any installation
- *Low wetted surface area*
  Minimal purge requirements
- *Field-adjustable pressure limit*
  Safeguard downstream equipment
- *Pipe away relief valve*
  Safely vent exhaust gases
- *Delivery pressure range easily changed*
  Maximum flexibility

Materials

Body
316L stainless steel barstock

Bonnet
Chrome-plated brass barstock

Seat
PTFE

Filter
10 micron stainless steel multi-layer mesh

Diaphragm
316L stainless steel

Internal Seals
PTFE

Specifications

Maximum Inlet Pressure
3000 PSIG (210 BAR)

Temperature Range
-40°F to 140°F (-40°C to 60°C)

Gauge
2" diameter stainless steel

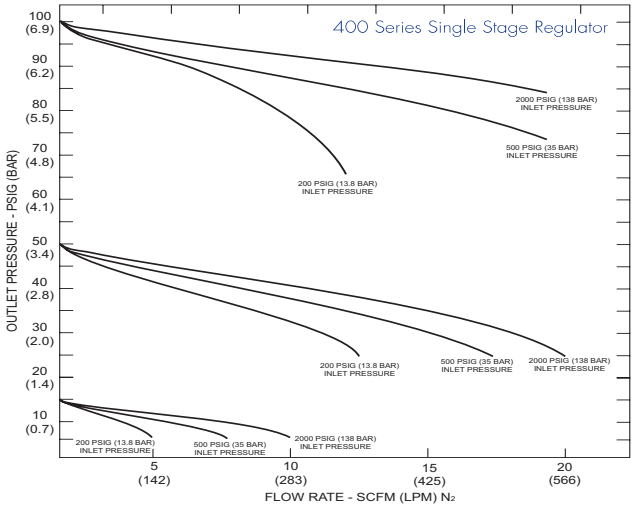
Ports
¼" VCR®

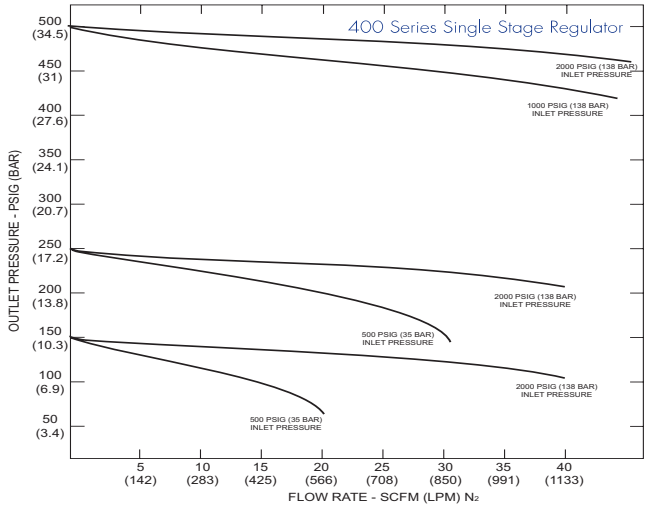
Helium Leak Integrity
1 x 10^{-9} scc/sec

Cv
0.1

Weight (428-1302)
2.46 lbs. (1.12 kg)

Flow Performance





Ordering Information and Configuration Options

428	A	B	C	D
Series 428	**Outlet Pressure** **1:** 0-15 **2:** 0-30 **3:** 0-50 **4:** 0-100 **5:** 0-250 **6:** 0-500 **7:** 0-150	**Outlet Gauge** **0:** None **1:** 30"-0-30 PSIG **2:** 30"-0-60 PSIG **3:** 30"-0-100 PSIG **4:** 30"-0-200 PSIG **5:** 0-400 PSIG **6:** 0-1000 PSIG	**Inlet Gauge** **0:** None	**Connections** **1:** FVCR in/MVCR out **2:** MVCR in/MVCR out **3:** MVCR in/FVCR out **4:** FVCR in/FVCR out

Related Options

Option	Order No.	Description
Panel Mount Kit	550-0002	To mount the regulator using bonnet threads. Material: Nickel-plated brass
Captured Vent Kit	550-0001	360° orientation for easy piping of vented gases to a safe location in the event of diaphragm failure. Material: Nickel-plated brass
Helium Leak Certification	476-0002	Inboard Helium leak certification to less than 1 x 10^{-8} scc/sec
Special Treatment	550-0003	Regulator preconditioned in actual gas usage (required for some fluoridated compounds)
0.01 micron filter	580-2001	Attached at outlet for low particle count gases (with ¼" VCR® connections only)

429 Series corrosion resistant, single stage, stainless steel barstock line regulator

Description

The 429 Series regulators are intended for primary pressure control of the highest purity gases or for applications where minor fluctuations in outlet pressure due to diminishing inlet supply pressure can be tolerated.

Advanced Features

- Semiconductor process gases
- Gas and liquid chromatography
- Ultra-high purity carrier gases
- Zero, span and calibration gases
- Liquefied hydrocarbon gas control
- Control of cryogenic gases

Typical Applications

- Butt-welded VCR® connections
  Highest leak integrity available
- 316L stainless steel barstock body
  Increased corrosion resistance
- Front and rear panel mountable
  Versatile system configuration
- 3000 PSIG inlet pressure rating
  Safe use with high pressure cylinders

400 Series Advantage

- *Metal-to-metal diaphragm seal*
  No possibility of gas contamination
- *Capsule® seat*
  Increased serviceability and life
- *316L stainless steel diaphragm*
  No inboard diffusion
- *Orientable captured vent capable*
  Safety in any installation
- *Low wetted surface area*
  Minimal purge requirements
- *Field-adjustable pressure limit*
  Safeguard downstream equipment
- *Pipe away relief valve*
  Safely vent exhaust gases
- *Delivery pressure range easily changed*
  Maximum flexibility

Materials

Body
316L stainless steel barstock

Bonnet
Chrome-plated brass barstock

Seat
PTFE

Filter
10 micron stainless steel multi-layer mesh

Diaphragm
316L stainless steel

Internal Seals
PTFE

Specifications

Maximum Inlet Pressure
3000 PSIG (210 BAR)

Temperature Range
-40°F to 140°F (-40°C to 60°C)

Gauges
2" diameter stainless steel

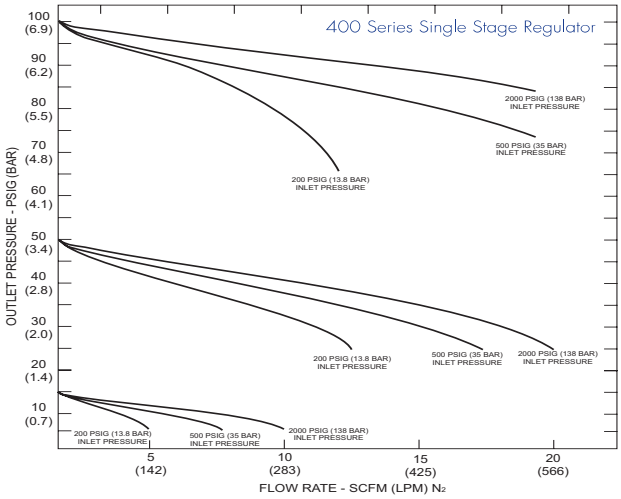
Ports
¼" VCR®

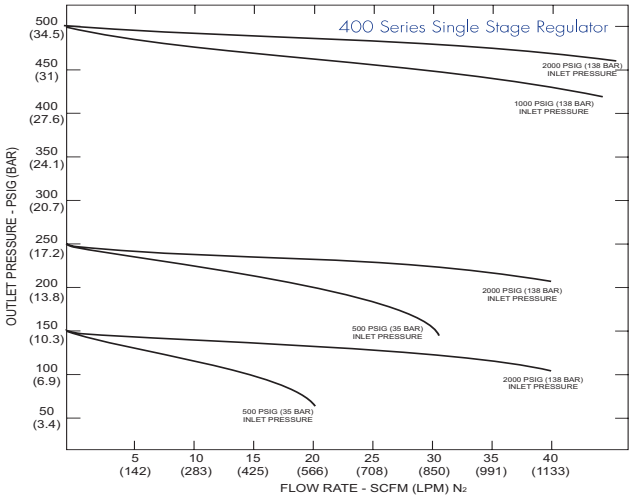
Helium Leak Integrity
1 x 10^{-9} scc/sec

Cv
0.1

Weight (429-1312)
2.73 lbs. (1.24 kg)

Flow Performance





Ordering Information and Configuration Options

429	A	B	C	D
Series 429	**Outlet Pressure** **1:** 0-15 **2:** 0-30 **3:** 0-50 **4:** 0-100 **5:** 0-250 **6:** 0-500 **7:** 0-150	**Outlet Gauge** **0:** None **1:** 30"-0-30 PSIG **2:** 30"-0-60 PSIG **3:** 30"-0-100 PSIG **4:** 30"-0-200 PSIG **5:** 0-400 PSIG **6:** 0-1000 PSIG	**Inlet Gauge** **0:** None **1:** 0-4000 PSIG **2:** 0-400 PSIG **3:** 0-1000 PSIG **4:** 0-3000 PSIG **5:** 30"-0-200 PSIG **6:** 30"-0-100 PSIG **7:** 30"-0-60 PSIG **8:** 30"-0-30 PSIG	**Connections** **1:** FVCR in/MVCR out **2:** MVCR in/MVCR out **3:** MVCR in/FVCR out **4:** FVCR in/FVCR out

Related Options

Option	Order No.	Description
Panel Mount Kit	550-0002	To mount the regulator using bonnet threads. Material: Nickel-plated brass
Captured Vent Kit	550-0001	360° orientation for easy piping of vented gases to a safe location in the event of diaphragm failure. Material: Nickel-plated brass
Helium Leak Certification	476-0002	Inboard Helium leak certification to less than 1 x 10^{-8} scc/sec
Special Treatment	550-0003	Regulator preconditioned in actual gas usage (required for some fluoridated compounds)
0.01 micron filter	580-2001	Attached at outlet for low particle count gases (with ¼" VCR® connections only)