LINE REGULATORS FOR ULTRA HIGH PURITY GASES (MODELS AG3800, AG3810)

The Models AG3800 and AG3810 regulators are designed for ultra high purity gases used in line applications at inlet pressures up to 3000 psig. These regulators are specially suited for point-of-use gas delivery systems requiring high leak integrity and guaranteed gas purity levels. Model AG3800 is for non-corrosive gases; Model AG3810 is suitable for use with corrosive gases.

AG3810 Regulator

STANDARD FEATURES

- Metal to Metal Diaphragm Seals assure maximum diffusion resistance.
- High Purity Regulator Design permits vacuum purging of regulator.
- In-line Porting permits direct installation of regulator in piping system.
- Stainless Steel Filter in Inlet traps foreign matter, extends regulator life and reduces maintenance.
- Threaded Holes in Rear of Regulator permit front panel mounting.

OPTIONAL FEATURES

- Mounting Ring permits regulator to be panel mounted
- Compression Fittings installed in inlet and outlet ports allow connection to ¼" or ⅛" tubing.
- Internal (Inboard) Helium Leak Test and Test Report determines inboard leak rate of gas from regulator to atmosphere; test report certifies leak rate of less than 2 x 10^{-8} sccs air equivalent.
- External (Outboard) Helium Leak Test and Test Report determines outboard leak rate of gas from regulator to atmosphere; test report certifies leak rate of less than 5 x 10^{-7} sccs air equivalent.

SPECIFICATIONS

Maximum Inlet Pressure: 3000 psig

Delivery Pressure Range: See Table I and II

Delivery Pressure Gauge: See Table I and II

Filter: 40 micron

Gauge Size: 2" Dial

Operating Temperature Range:
-40°F to +140°F

Flow Coefficient: Cv = 0.06

Inlet and Outlet Connections: ¼" NPT female (standard). Compression fittings available as an option

Approximate Weight: 2 lbs.

MATERIALS OF CONSTRUCTION

Body:
Model AG3800: Brass Bar Stock
Model AG3810: Type 316 SS Bar Stock

Gauges:
Model AG3800: Brass
Model AG3810: Type 316 Stn. Stl.

Bonnet:
Model AG3800: Brass
Model AG3810: 300 Series Stn. Stl.

Other Metal Parts Exposed to Gas:
Model AG3800: Brass
Model AG3810: Type 316 Stn. Stl.

Seat: PCTFE

Diaphragm: Type 316 Stainless Steel

Seals: Teflon®

TABLE I, Brass Models

Part No.	Delivery Pressure Range (psig)	Gauge (dual scale) (psig)	(bar)
AG3800-30	4–30	0–60	0–4
AG3800-100	10–100	0–200	0–14
AG3800-300	20–300	0–400	0–27
AG3800-500	30–500	0–600	0–41

TABLE II, Stainless Steel Models

Part No.	Delivery Pressure Range (psig)	Gauge (dual scale) (psig)	(bar)
AG3810-30	4–30	0–60	0–4
AG3810-100	10–100	0–200	0–14
AG3810-300	20–300	0–400	0–27
AG3810-500	30–500	0–600	0–41

OPTIONAL EQUIPMENT

Equipment	Part No.
Panel Mounting Ring*	PM3803
Inboard Helium Leak Test and Test Report	HT1000
Outboard Helium Leak Test and Test Report	HT1001
Compression Fittings (two required)*	
⅛" compression for Model AG3800	SG6703
¼" compression for Model AG3800	SG6704
⅛" compression for Model AG3810	SG6713
¼" compression for Model AG3810	SG6714

* If selected, these items are not installed on the regulator. They are shipped as separate items.

HIGH FLOW LINE REGULATORS FOR ULTRA HIGH PURITY GASES (MODELS AG3820, AG3830)

Capable of flow rates up to 1500 scfh at inlet pressures of 500 psig, these line regulators are ideal for high flow delivery systems requiring high leak integrity and guaranteed gas purity levels. Model AG3820 is suitable for non-corrosive service, while Model AG3830 is designed for corrosive gas applications.

AG3820 Regulator

STANDARD FEATURES

- Stainless Steel Diaphragm minimizes diffusion of air into regulator and eliminates "off gassing" associated with elastomeric diaphragms, thus maintaining gas purity.
- High Purity Regulator Design permits vacuum purging of regulator.
- In-line Porting permits direct installation of regulator in piping system.
- 2½" Gauge reads easily for more precise settings.
- Threaded Holes in Rear of Regulator permit front panel mounting.

OPTIONAL FEATURES

- Mounting Ring permits regulator to be panel mounted
- Compression Fittings installed in inlet and outlet ports allow connection to ¼" tubing.
- Internal (Inboard) Helium Leak Test and Test Report determines inboard leak rate of gas from regulator to atmosphere; test report certifies leak rate of less than 2 x 10^{-8} sccs air equivalent.
- External (Outboard) Helium Leak Test and Test Report determines outboard leak rate of gas from regulator to atmosphere; test report certifies leak rate of less than 5 x 10^{-7} sccs air equivalent.

SPECIFICATIONS

Maximum Inlet Pressure: 3000 psig

Delivery Pressure Range: See Table I and II

Delivery Pressure Gauge: See Table I and II

Gauge Size: 2½" Dial

Operating Temp. Range: -40°F to +140°F

Flow Coefficient:
Model SG3820: Cv = 0.4
Model SG3830: Cv = 0.6

Inlet and Outlet Connections:
¼" NPT female

Approximate Weight: 4 lbs.

MATERIALS OF CONSTRUCTION

Body:
Model AG3820: Brass Bar Stock
Model AG3830: Type 316 SS Bar Stock

Gauge:
Model AG3820: Brass
Model AG3830: Type 316 Stn. Stl.

Bonnet:
Model AG3820: Brass
Model AG3830: 300 Series Stn. Stl.

Other Metal Parts Exposed to Gas:
Model AG3820: Brass & Stn. Stl.
Model AG3830: Type 316 Stn. Stl.

Seat:
Model AG3820: Teflon®
Model AG3830: PCTFE

Diaphragm:
Model AG3820: Type 302 Stn. Stl.
Model AG3830: Type 316 Stn. Stl.

Seals: Teflon®

TABLE I, Brass Models

Part No.	Delivery Pressure Range (psig)	Gauge (dual scale) (psig)	(bar)
AG3820-30	4–30	0–60	0–4
AG3820-75	6–75	0–100	0–7
AG3820-150	10–150	0–200	0–14
AG3820-300	20–300	0–400	0–27

TABLE II, Stainless Steel Models

Part No.	Delivery Pressure Range (psig)	Gauge (dual scale) (psig)	(bar)
AG3830-30	4–30	0–60	0–4
AG3830-75	6–75	0–100	0–7
AG3830-150	10–150	0–200	0–14
AG3830-250	20–250	0–400	0–27

OPTIONAL EQUIPMENT

Equipment	Part No.
Panel Mounting Ring*	
Brass (hex.-screw) Ring for Model AG3820	PM3800
Stainless Steel (threaded) Ring for Model AG3830	PM3803
Inboard Helium Leak Test and Test Report	HT1000
Outboard Helium Leak Test and Test Report	HT1001
Compression Fittings (two required)*	
¼" compression for Model AG3820	SG6704
¼" compression for Model AG3830	SG6714

* If selected, these items are not installed on the regulator. They are shipped as separate items.

LOW PRESSURE INSTRUMENT REGULATORS (SG4820 SERIES)

The SG4820 Series regulators are designed primarily for use in analytical instrument applications and are suitable for line or panel mounting. These high precision, direct acting, non-relieving regulators provide bubble-tight shutoff even with helium.

SG4820 Regulator

STANDARD FEATURES

- High Resolution Design (0–15 Turns Over Full Delivery Pressure Range) provides precise pressure control necessary for use with analytical instruments.
- Filter Screens in Ports trap foreign matter, extend regulator life and reduce maintenance.
- Mounting Nuts permit regulator to be panel mounted.

OPTIONAL FEATURES

- 2 Micron, Type 316 Stainless Steel or Aluminum Alloy Inlet Filter provides additional protection from particulates for regulator and downstream system.

SPECIFICATIONS

Maximum Inlet Pressure: 250 psig

Delivery Pressure Range: See Table I

Maximum Operating Temperature: 140°F

Inlet, Outlet and Gauge Ports:
⅛" NPT female

Supply Pressure Effect: 0.07 psi per 10 psi

Approximate Weight: 0.5 lb

MATERIALS OF CONSTRUCTION

Body: See Table I

Bonnet: Aluminum

Valve Stem and Valve Spring:
Type 316 Stainless Steel

Seat: Teflon®

Diaphragm and Seals:
Models SG4820: Buna-N®
Models SG4821: Viton®

Adjusting Spring: Zinc-Plated Music Wire

TABLE I

Delivery Pressure Range (psig)	Model SG4820 (Aluminum Body)	Model SG4821 (Type 316 SS Body)
0–0.5	SG4820-1	SG4821-1
0–10	SG4820-10	SG4821-10
0–30	SG4820-30	SG4821-30
0–60	SG4820-60	SG4821-60
0–100	SG4820-100	SG4821-100
0–200	SG4820-200	SG4821-200

OPTIONAL EQUIPMENT

Equipment	Part No.
Inlet Filter, 2 micron, for Model SG4820	FM4741
Inlet Filter, 2 micron, for Model SG4821	FM4746

SINGLE-STAGE REGULATORS FOR VERY LOW DELIVERY PRESSURES (MODEL SSC)

This regulator provides accurate control at very low delivery pressures. It is available in five separate delivery pressure ranges: from 3.5"–8" H_2O to 10–15 psig.

Model SSC is mainly designed for use with liquefied hydrocarbons such as Propane, Butane or Isobutane. Although primarily used as a line regulator, it may be optionally ordered as a cylinder regulator for use with gases having cylinder pressures below 250 psig.

For high pressure cylinder products (e.g., Nitrogen or Argon) in applications requiring very low delivery pressures please refer to our Model TSC Regulator on page 36.

WARNING: Do not use this regulator with Hydrogen or Helium. Although these gases are compatible with the materials of construction, experience shows that the seals are not sufficient to prevent leakage of these gases.This regulator is also not recommended for oxygen service.

STANDARD FEATURES

- Large Diaphragm allows for accurate control of delivery pressures as low as 3.5" H_2O.
- Threaded Mounting Pads with screws permit panel mounting.
- Outlet Metering Valve provides flow control.
- 1" H_2O Graduations on SSC-0 Gauge and 1 oz. Graduations on SSC-1 Gauge allow for enhanced readability at very low pressure settings.
- 2½" Gauge reads easily for more precise settings.

SPECIFICATIONS

Maximum Inlet Pressure: 250 psig*

Minimum Inlet Pressure: 5 psig

Delivery Pressure Range: See Table I

Delivery Pressure Gauge: See Table I

Gauge Size: 2½" Dial

Inlet Connection: ¼" NPT female (CGA 510 cylinder connection; see "Optional Equipment")

Outlet Connection: ¼" NPT male (on outlet valve)

Approximate Weight: 4 lbs

MATERIALS OF CONSTRUCTION

Body and Bonnet: Die Cast Zinc

Outlet Block, Outlet Valve and Gauge: Brass

Other Metal Parts Exposed to Gas: Zinc, Brass and Stainless Steel

Diaphragm and Seat: Buna-N®

Seals: Buna-N® and Teflon®

SSC Regulator

Optional Pressure Adjusting Wrench

TABLE I

Part No.	Delivery Pressure (psig) Range	Gauge
SSC-0*	3.5–8" H_2O	0–35" H_2O
SSC-1*	0.5–1.0	0–32 oz.
SSC-5	1.1–5.0	0–10
SSC-10	5.1–10.0	0–30
SSC-15	10.1–15.0	0–30

* These models require inlet pressures below 100 psig to be able to provide the full delivery pressure range.

OPTIONAL EQUIPMENT

Equipment	Part No.
Pressure Adjusting Wrench	SG6216
CGA 510 Cylinder Connection Installed on Inlet	**

** Suffix Regulator part number with 510. Example: SSC-5-510.