

Face-Seal Connection Regulators

Ultra-High-Purity, 10 Ra Finish, Single-Stage
Models 1000 and 1500

These 316L Stainless Steel bar stock body regulators are most often used with the highest electronic grade (greater than 99.9995% or purity grade 5.5) inert, toxic, corrosive and flammable semiconductor gases. They have a 10 Ra surface finish and are electronic grade cleaned. The all-welded, metal-to-metal face-seal (VCR® compatible) connections eliminate generation of unwanted particles, reduce entrapment zones, and provide zero axial clearance for ease of component installation and removal. Model 1000 regulators have standard diaphragm and seat design; Model 1500 regulators have a positive-seal tied-diaphragm design and positionable ported bonnet.

Benefits/Features

Face-seal configuration provides zero axial clearance allowing for ease of component installation and removal

Gasket/face-seal design provides metal-to-metal seal with no entrapment zones

Face-seal connections eliminate generation of unwanted metal particles

Face-seal versatility permits use in both vacuum and positive pressure applications

Tied diaphragm (Model 1500) ensures positive shut-off while minimizing droop and particle entrapment

Positionable captured vent bonnet (Model 1500) provides complete capture of bonnet and allows for 360° rotation of bonnet port without changing regulator position

Specifications

Internal Surface Finish:

10 Ra microinch/0.25 micrometer

Cleaning: DI water electronic grade

Design Proof Pressure:

150% of maximum rated

Inlet Pressure (maximum): See ordering table

Inlet Pressure Gauge: See ordering table

Delivery Pressure Range: See ordering table

Delivery Pressure Gauge: See ordering table

Operating Temperature Range:

-40°F to 140°F (-40°C to 60°C)

Flow Coefficient: Cv = 0.06

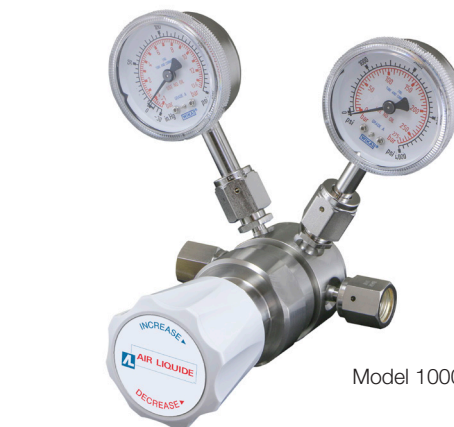
Inlet and Outlet Connections:

1/4" female swivel

Gauge Port Connections:

1/4" male swivel

(1/4" female swivel gauges installed)



Model 1000

Supply Pressure Effect: 0.8 psi per 100 psi (0.05 bar per 7 bar)

Inboard Leak Rate: 1 x 10⁻⁹ atm cc/sec He

Gauge Size: 2" (53 mm) face

Approximate Weight: 4 lbs. (1.8 kg)

Materials of Construction

Body: 316L Stainless Steel electro-polished

Diaphragm: 316L Stainless Steel

Gauges: 316 Stainless Steel

Other Metal Parts Exposed to Gas:

316 Stainless Steel

Seat: PCTFE

Ordering Information

Model Number	Inlet Pressure (maximum)		Inlet Pressure Gauge (dual-scale)		Delivery Pressure Range		Delivery Pressure Gauge (dual-scale)	
	psig	bar	psig	bar	psig	bar	psig	bar
Model 1000								
Q1-1000A	3500	241	0 – 4000	0 – 275	0 – 30	0 – 2	-30" Hg – 0 – 60	-1 – 0 – 4
Q1-1000B	3500	241	0 – 4000	0 – 275	0 – 100	0 – 7	-30" Hg – 0 – 200	-1 – 0 – 14
Q1-1000C	3500	241	0 – 4000	0 – 275	0 – 250	0 – 17	0 – 400	0 – 27
Q1-1000D	3500	241	0 – 4000	0 – 275	0 – 500	0 – 35	0 – 600	0 – 41
Model 1500 Tied Diaphragm								
Q1-1500A	3500	241	0 – 4000	0 – 275	0 – 30	0 – 2	-30" Hg – 0 – 60	-1 – 0 – 4
Q1-1500B	3500	241	0 – 4000	0 – 275	0 – 100	0 – 7	-30" Hg – 0 – 200	-1 – 0 – 14
Q1-1500C	3500	241	0 – 4000	0 – 275	0 – 150	0 – 10	-30" Hg – 0 – 200	-1 – 0 – 14

Face-Seal Connection Regulators

Ultra-High-Purity, 10 Ra Finish, Two-Stage
Models 2000 and 2500

These 316L Stainless Steel bar stock body regulators are most often used with the highest electronic grade (greater than 99.9995% or purity grade 5.5) inert, toxic, corrosive and flammable semiconductor gases. They have a 10 Ra surface finish and are electronic grade cleaned. The all-welded, metal-to-metal face-seal (VCR® compatible) connections eliminate generation of unwanted particles, reduce entrapment zones, and provide zero axial clearance for ease of component installation and removal. Model 2000 regulators have standard diaphragm and seat design; Model 2500 regulators have a positive-seal tied-diaphragm design and positionable ported bonnets.

Benefits/Features

Face-seal configuration provides zero axial clearance allowing for ease of component installation and removal

Gasket/face-seal design provides a metal-to-metal seal with no entrapment zones

Face-seal connections eliminate generation of unwanted metal particles

Face-seal versatility permits use in both vacuum and positive pressure applications

Tied-diaphragms (Model 2500) ensure positive shut-off while minimizing droop and particle entrapment

Positionable captured vent bonnet (Model 2500) provides complete capture of bonnet and allows for 360° rotation of bonnet ports without changing regulator position

Specifications

Internal Surface Finish:

10 Ra microinch/0.25 micrometer

Cleaning: DI water electronic grade

Design Proof Pressure:

150% of maximum rated

Inlet Pressure (maximum): See ordering table

Inlet Pressure Gauge: See ordering table

Delivery Pressure Range: See ordering table

Delivery Pressure Gauge: See ordering table

Operating Temperature Range:

-40°F to 140°F (-40°C to 60°C)

Flow Coefficient: $C_v = 0.06$

Inlet and Outlet Connections:

1/4" female swivel

Gauge Port Connections: 1/4" male swivel

(1/4" female swivel gauges installed)



Model 2000

Supply Pressure Effect: 0.04 psi per 100 psi
(0.01 bar per 7 bar)

Inboard Leak Rate: 1×10^{-9} atm cc/sec He

Gauge Size: 2" (53 mm) face

Approximate Weight: 6 lbs. (2.7 kg)

Materials of Construction

Body: 316L Stainless Steel electro-polished

Diaphragm: 316L Stainless Steel

Gauges: 316 Stainless Steel

Other Metal Parts Exposed to Gas:

316 Stainless Steel

Seat: PCTFE

Ordering Information

Model Number	Inlet Pressure (maximum)		Inlet Pressure Gauge (dual-scale)		Delivery Pressure Range		Delivery Pressure Gauge (dual-scale)	
	psig	bar	psig	bar	psig	bar	psig	bar
Model 2000								
Q1-2000A	3500	241	0 – 4000	0 – 275	0 – 30	0 – 2	-30" Hg – 0 – 60	-1 – 0 – 4
Q1-2000B	3500	241	0 – 4000	0 – 275	0 – 100	0 – 7	-30" Hg – 0 – 200	-1 – 0 – 14
Q1-2000C	3500	241	0 – 4000	0 – 275	0 – 250	0 – 17	0 – 400	0 – 27
Model 2500 Tied Diaphragm								
Q1-2500A	3500	241	0 – 4000	0 – 275	0 – 30	0 – 2	-30" Hg – 0 – 60	-1 – 0 – 4
Q1-2500B	3500	241	0 – 4000	0 – 275	0 – 100	0 – 7	-30" Hg – 0 – 200	-1 – 0 – 14
Q1-2500C	3500	241	0 – 4000	0 – 275	0 – 150	0 – 10	-30" Hg – 0 – 200	-1 – 0 – 14

Face-Seal Connection Regulators

Ultra-High-Purity, 10 Ra Finish, Line
Models 3000 and 3500

These 316L Stainless Steel bar stock body line regulators provide point-of-use regulation for the highest electronic purity (greater than 99.9995% or purity grade 5.5) inert, toxic, corrosive and flammable semiconductor gases. They have a 10 Ra surface finish and are electronic grade cleaned. The all-welded, metal-to-metal face-seal (VCR® compatible) connections eliminate generation of unwanted particles, reduce entrapment zones, and provide zero axial clearance for ease of component installation and removal. Model 3000 regulators have standard diaphragm and seat design; Model 3500 regulators have a positive-seal tied-diaphragm design and positionable ported bonnet.



Model 3000

Benefits/Features

Face-seal configuration provides zero axial clearance allowing for ease of component installation and removal

Gasket/face-seal design provides a metal-to-metal seal with no entrapment zones

Face-seal connections eliminate generation of unwanted metal particles

Face-seal versatility permits use in both vacuum and positive pressure applications

Tied-diaphragm (Model 3500) ensures positive shut-off while minimizing droop and particle entrapment

Positionable captured vent bonnet (Model 3500) provides complete capture of bonnet and allows for 360° rotation of bonnet port without changing regulator position

Specifications

Internal Surface Finish:

10 Ra microinch/0.25 micrometer

Cleaning: DI water electronic grade

Design Proof Pressure:

150% of maximum rated

Inlet Pressure (maximum): 3500 psig (241 bar)

Delivery Pressure Range: See ordering table

Delivery Pressure Gauge: See ordering table

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

Flow Coefficient: $C_v = 0.15$

Inlet and Outlet Connections: 1/4" female swivel

Gauge Port Connection: 1/4" male swivel (1/4" female swivel gauge installed)

Inboard Leak Rate: 1×10^{-9} atm cc/sec He

Gauge Size: 2" (53 mm) face

Approximate Weight: 3 lbs. (1.4 kg)

Materials of Construction

Body: 316L Stainless Steel electro-polished

Diaphragm: 316L Stainless Steel

Gauge: 316 Stainless Steel

Other Metal Parts Exposed to Gas:
316 Stainless Steel

Seat: PCTFE

Ordering Information

Model Number	Delivery Pressure Range		Delivery Pressure Gauge (dual-scale)	
	psig	bar	psig	bar
Model 3000				
Q1-3000A	0 – 30	0 – 2	-30" Hg – 0 – 60	-1 – 0 – 4
Q1-3000B	0 – 100	0 – 7	-30" Hg – 0 – 200	-1 – 0 – 14
Q1-3000C	0 – 250	0 – 17	0 – 400	0 – 27
Model 3500 Tied Diaphragm				
Q1-3500A	0 – 30	0 – 2	-30" Hg – 0 – 60	-1 – 0 – 4
Q1-3500B	0 – 100	0 – 7	-30" Hg – 0 – 200	-1 – 0 – 14
Q1-3500C	0 – 150	0 – 10	-30" Hg – 0 – 200	-1 – 0 – 14