

412 SERIES REGULATORS



The 412 Series dual stage regulators are intended for primary pressure control of ultra-high purity inert gases. Two stages of pressure regulation minimize pressure variation arising from inlet pressure changes that may occur due to the depletion of the supply cylinder. This makes it ideal for applications requiring constant pressure control and delivery regardless of supply pressure variations, such as gas supply to analytical instruments. Available with a variety of options installed at the factory, the 412 Series pressure reducing regulator may be configured as a single station manifold with or without purge, low-pressure alarm, or multiple inlets.



412 3331-01-580 shown

Typical Applications

- EPA Protocol Gases
- High Purity Carrier Gases
- Gas and Liquid Chromatography
- Zero, Span, and Calibration Gases
- High Purity Chamber Pressurization

Features

Metal-to-Metal Diaphragm Seal prevents gas contamination

Brass Barstock Body provides smooth surface finish

Cleanroom Assembly eliminates contamination at installation

Pipe Away Relief Valve vents exhaust gases safely

CAPSULE® Seat Design features integral 360° filtration in both stages

Pressure Ranges 0-15 to 0-350 PSIG (0-1 to 0-24 BAR) accommodates a broad range of applications

Materials and Specifications

Maximum Inlet Pressure (bare body): 3000 PSIG (210 BAR); or 3500 PSIG (240 BAR) or 4500 PSIG (310 BAR) options

Body: Brass barstock

Bonnet: Brass barstock

Gauges: 2 in (50 mm) diameter brass

Seat: PCTFE (first stage); PTFE (second stage)

Filter: 10-micron sintered bronze

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

Diaphragm: 316L stainless steel

Cv: 0.1 See *flow curves attached*

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

Internal Seals: PTFE

Ports (bare body): 1/4 in FNPT

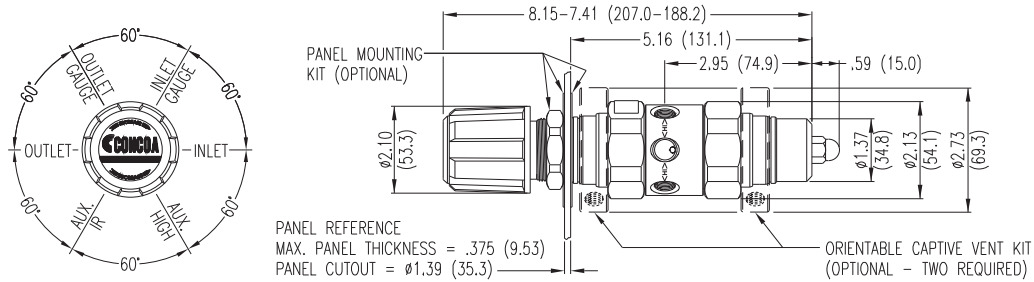
Weight (412 3331-580): 5.3 lbs. (2.4 kg)

Conformances: Cleanliness meets or exceeds CGA G-4.1; PED 2014/68/EU; ANSI/ASME B40.1; CRN OH5216

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Installation Dimensions



Ordering Information

412	A	B	C	D	-CON	Options	
Series 412	Outlet Pressure	Outlet Gauge	Inlet Gauge	Outlet Assemblies	Assembly/Gauges	Inlet Connections	Installed Options
	1: 0-15 PSIG (0-1 BAR)	30"-0-30 PSIG/ -1-0-2 BAR	0: None	0: 1/4" FNPT port	0: Bare body	000: 1/4" FNPT	B: Protocol alarm station with pressure switch gauges
	2: 0-50 PSIG (0-3.5 BAR)	30"-0-100 PSIG/ -1-0-7 BAR	3: 0-4000 PSIG/ 0-275 BAR	1: 1/4" MNPT	1: Cleanroom assembly (PSIG/kPa gauges)	TF2: 1/8" tube	C: Protocol switchover station
	3: 0-100 PSIG (0-7 BAR)	30"-0-200 PSIG/ -1-0-14 BAR	5: 0-1000 PSIG/ 0-70 BAR	2: 1/4" tube fitting	2: Cleanroom assembly (BAR/PSIG gauges)	TF4: 1/4" tube	D: Deep purge*
	4: 0-250 PSIG (0-17 BAR)	0-400 PSIG/ 0-27 BAR	6: 0-300 PSIG/ 0-21 BAR	3: Diaphragm valve 1/4" tube fitting		TF6: 3/8" tube	E: Protocol alarm station with intrinsically safe transducer for hazardous environments
	7: 0-150 PSIG (0-10 BAR)	30"-0-200 PSIG/ -1-0-14 BAR	7: 0-400 PSIG/ 0-27 BAR	4: Diaphragm valve 1/4" MNPT		M06: 6mm tube	H: Protocol switchover alarm station with pressure switch gauges
	E: 0-350 PSIG (0-24 BAR)	0-400 PSIG/ 0-27 BAR	8: 0-6000 PSIG/ 0-415 BAR*	5: Needle valve 1/4" MNPT		CGA DIN 477 BS 341 and others available.	J: Protocol alarm station with standard transducer for non-hazardous environments
		G: 0-4000 PSIG/ 0-275 BAR†	6: 1/8" tube fitting				K: Protocol switchover alarm station with standard transducer for non-hazardous environments
		*Maximum inlet pressure 4500 PSIG (310 BAR) with PCTFE seat CAPSULE®.	7: 3/8" tube fitting				M: Protocol station
		†Maximum inlet pressure 3500 PSIG (240 BAR) with PCTFE seat CAPSULE.	8: Diaphragm valve 1/8" tube fitting				Q: Protocol purge station*
			9: Diaphragm valve 1/4" FNPT				X: Protocol switchover alarm station with intrinsically safe transducer for hazardous environments
			A: 3/8" BSP RH fitting				*Not available with 4500 PSIG (310 BAR) max inlet pressure.
			B: Diaphragm valve 3/8" tube fitting				
			C: 3/8" BSP LH fitting				
			D: 6mm brass hose barb (not available if A=4 or 5)				
			G: 1/8" stainless steel tube fitting				
			H: 1/4" stainless steel tube fitting				
			M: 6mm tube fitting				
			S: Diaphragm valve 6mm tube fitting				

Related Options

Part No.	Description
550 0001	Captured vent kit
550 0002	Panel mount kit
476 0002	Helium Leak certification

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Flow Curves for 412 Series

