

12 Series

Regulators - Pressure Reducing

D12XX1890X012

Specifications

For other materials or modifications, please consult TESCOM.

OPERATING PARAMETERS

Pressure rating per criteria of ANSI/ASME B31.3

Maximum Inlet Pressure

150 psig / 10.3 bar

Maximum Outlet Pressure

250 mm Hg-15 psig / 250 mm Hg-1.0 bar
0-30, 0-60, 0-100 psig / 0-2.1, 0-4.1, 0-6.9 bar

Design Proof Pressure

150% maximum rated

Inboard Leak Rate

$<1 \times 10^{-9}$ atm cc/sec He

Operating Temperature

-40°F to 140°F / -40°C to 60°C

Flow Capacity

Standard: $C_v = 0.04$

High Flow: $C_v = 0.08$

MEDIA CONTACT MATERIALS

Body

316L VAR Stainless Steel

Diaphragm

Hastelloy®*

Seat

PCTFE

Valve Stem

Hastelloy®*

Remaining Parts

316L VAR Stainless Steel

OTHER

Connections

Surface Mount: 1.125" or 1.50" footprint

Welded Fittings: 1/4" VCR® or tube stubs

Internal Volume

1/4" VCR®: 3.0 cc

1.125" C Seal: 1.8 cc

1.50" C Seal: 1.5 cc

Weight

VCR®, IGS: 0.60 lbs / 0.3 kg

A-Style: 1.08 lbs / 0.5 kg

VCR® is a registered trademark of Cajon Co.

Hastelloy® is a registered trademark of Haynes International, Inc.

*Material to be Hastelloy® or equivalent per ASTM B 574



VCR®

IGS

TESCOM 12 Series is a miniature ultra high purity IGS/VCR pressure reducing regulator. The 12 Series offers 5 R_a or 10 R_a microinch finishes, tied diaphragm and internally springless and threadless design. It provides inlet pressures of 150 psig / 10.3 bar, outlet pressure from 250 mm Hg-15, 30, 60, 100 psig / 250 mm Hg-1.0, 2.1, 4.1, 6.9 bar with flow rates up to 120 SLPM.

Applications

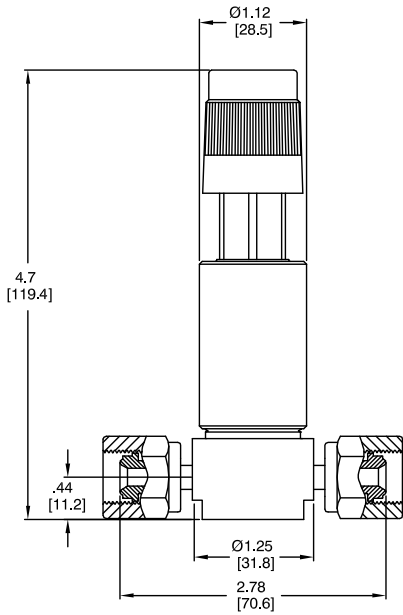
- OEM Tools
- Gas Boxes
- Low-Pressure Gas Cabinets

Features and Benefits

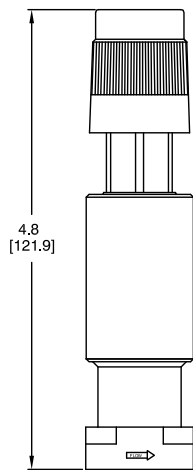
- Product of choice for state-of-the-art OEM gas systems
- Ultra-sensitive pressure control enhances MFC performance
- Superior performance in a wide range of applications
- Flows from 2 SCFM to 120 SLPM
- Unsurpassed droop and repeatability in a micro component
- Metal-to-metal diaphragm to body seal for high leak integrity
- 10 R_a or 5 R_a microinch internal surface finish
- Meets SEMI F19 and SEMI Modular Interface specifications

12 Series Regulator Drawing

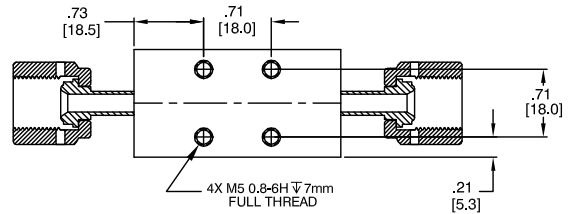
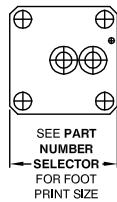
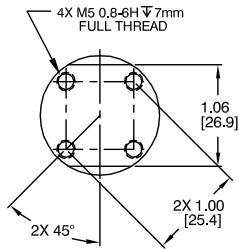
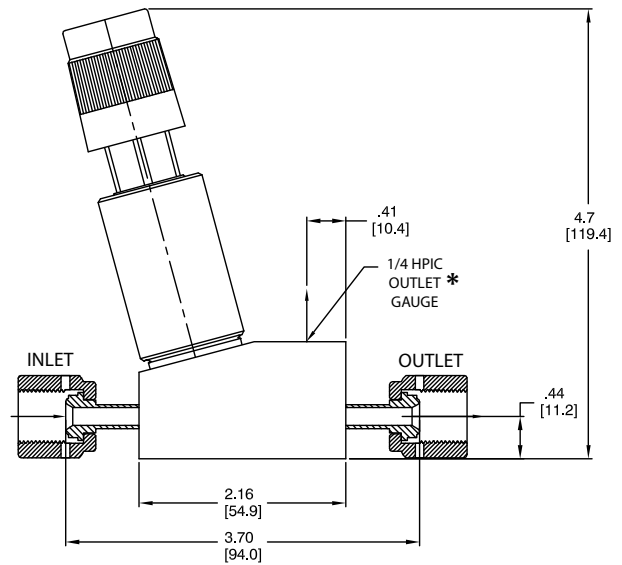
VCR® MODEL



IGS MODEL



A-STYLE MODEL

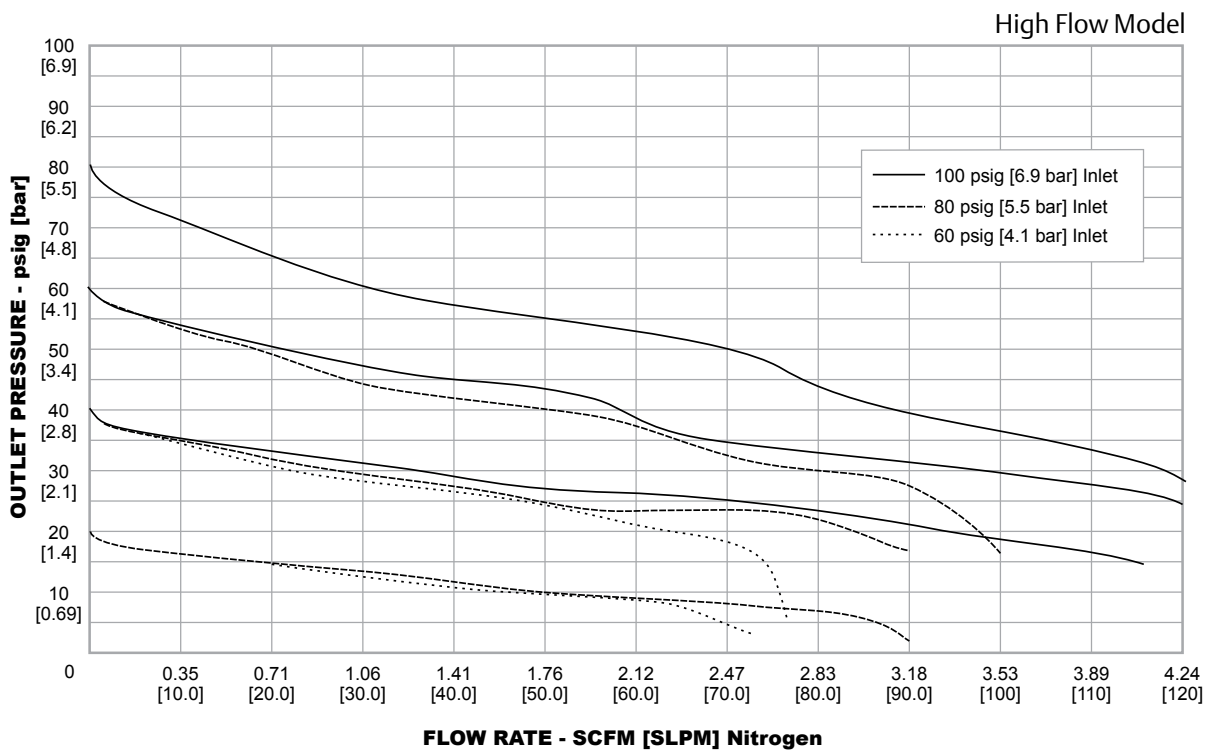
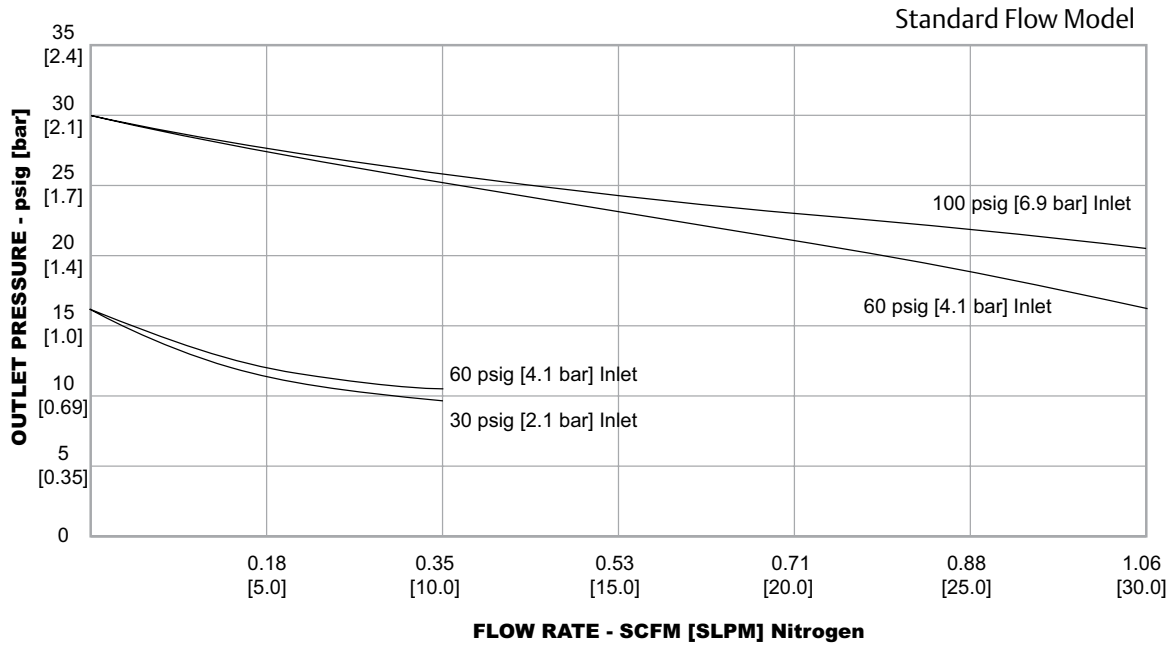


All dimensions are reference & nominal
Metric [millimeter] equivalents are in brackets

*High Purity Internal Connections (H.P.I.C.): Tescom High Purity Internal Connections. These are machined inside the regulator body and are designed to be compatible with VCR® (or equivalent) male fittings - swivel only.

12 Series Regulator Flow Charts

For more information on how to read flow curves, please refer to the Flow Curves and Calculations document (debul2007x012) in the TESCOM catalog or on www.tescom.com.



12 Series Regulator Part Number Selector

Repair Kits, Accessories & Modifications may be available for this product. Please contact TESCOM for more information.

Example for selecting a part number:

BASIC SERIES	FLOW OPTION	TYPE	MATERIAL				OUTLET PRESSURE	HAND KNOB COLOR	PORTING CONFIGURATION (END-TO-END DIMENSIONS)	OPTIONS (Choose only 1)
			Body	Trim	Seat	Internal Finish				
12	— Standard Flow Model H High Flow Model	1 Non-captured bonnet	A – 316L VAR Stainless Steel B – 316L VAR Stainless Steel	Hastelloy ^{®1} Hastelloy ^{®1}	PCTFE	10 R _a 5 R _a	0 – 250 mm Hg–15 psig 250 mm Hg–1.0 bar 1 – 0-30 psig 0-2.1 bar 2 – 0-60 psig 0-4.1 bar 3 – 0-100 psig 0-6.9 bar	1 – Black 5 – White	IGS2C1.5 – 1.50" C Seal IGS2C1.1 – 1.125" C Seal IGS21.5W – 1.50" W Seal IGS2W1.1 – 1.125" W Seal AADM6DM6 – 1/4" Female VCR [®] (2.78" ETE ²) AAEM6EM6 – 1/4" Fixed Male VCR [®] (2.78" ETE ²) AABM5BM5 – 1/4" Tube Stubs (2.00" ETE ²) For A-Style Only: ABEB7EB7 – 1/4" Fixed Male VCR [®] (3.70" ETE ²) ABDB7DB7 – 1/4" Female VCR [®] (3.70" ETE ²) ABDB7EB7 – 1/4" Female VCR [®] IN 1/4" Fixed Male VCR [®] OUT (3.70" ETE ²) ABEB7DB7 – 1/4" Fixed Male VCR [®] IN 1/4" Female VCR [®] OUT (3.70" ETE ²)	Z – Precision Electropolish 4 – Standard Electropolish (available with 12-1A only) T – Test report - typical (includes Helium Leak and Particle Count Certification) C – Certification of Conformance
			1. Material to be Hastelloy [®] or equivalent per ASTM B 574 2. ETE - End-to-End dimension							



WARNING! Do not attempt to select, install, use or maintain this product until you have read and fully understood the TESCOM Safety, Installation and Operation Precautions.