

# 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

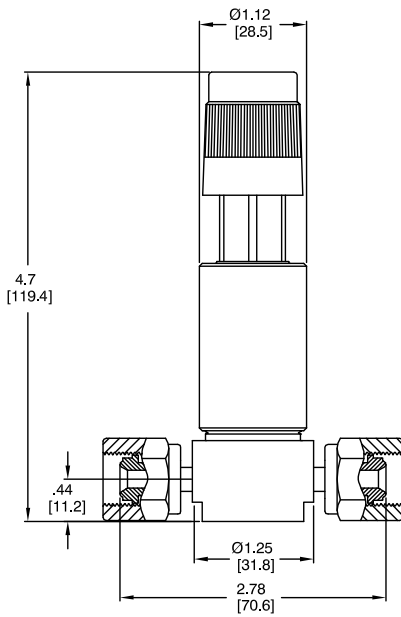
- OEM Tools
- Gas Boxes
- Low-Pressure Gas Cabinets

### Features and Benefits

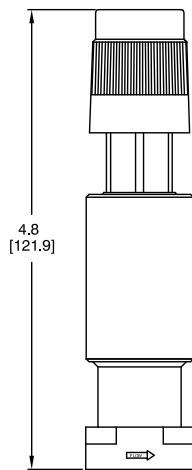
- Product of choice for state-of-the-art OEM gas systems
- Ultra-sensitive pressure control enhances MFC performance
- Superior performance in a wide range of applications
- Flows from 2 SCFM to 120 SLPM
- Unsurpassed droop and repeatability in a micro component
- Metal-to-metal diaphragm to body seal 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

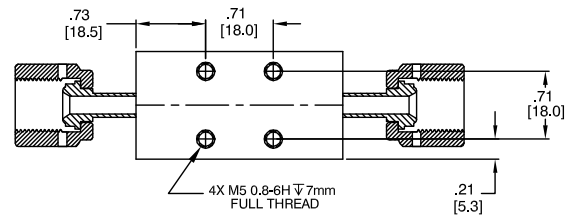
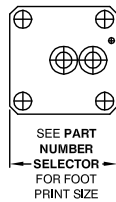
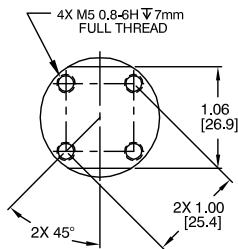
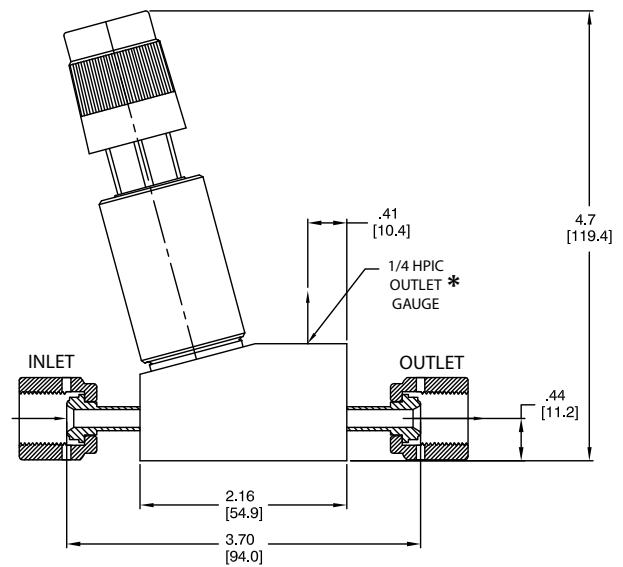
VCR® MODEL



IGS MODEL



A-STYLE MODEL

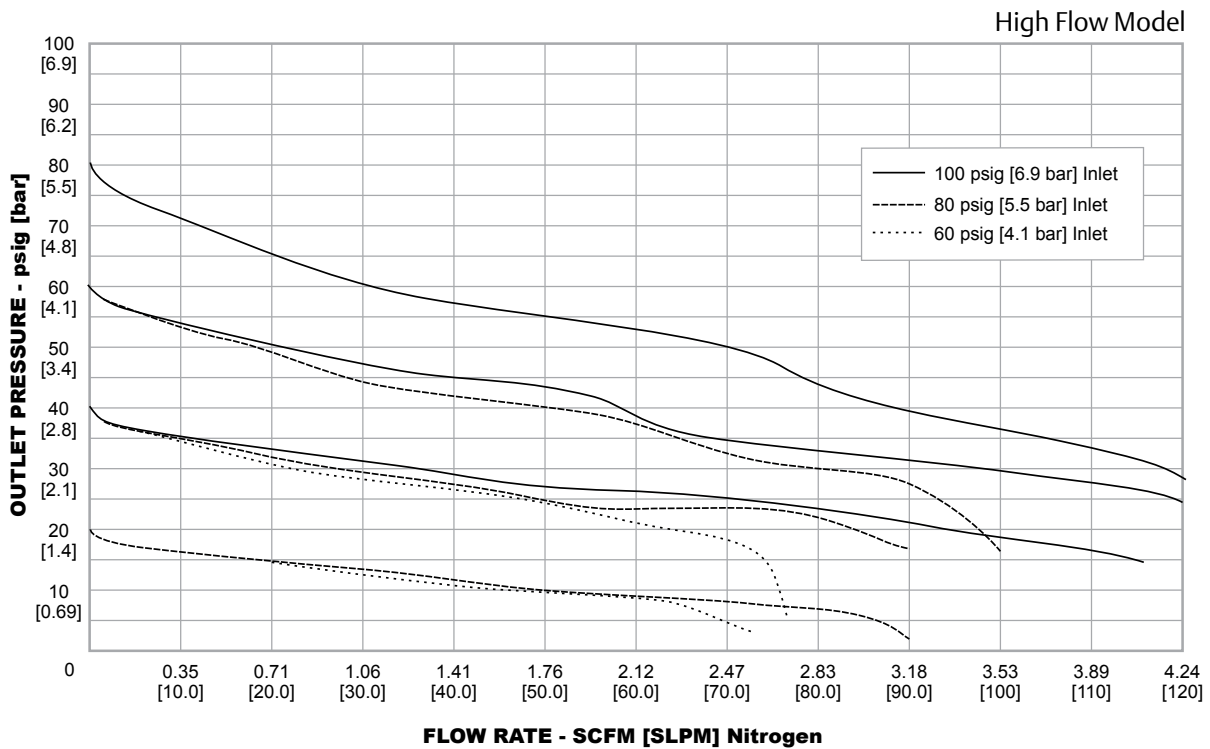
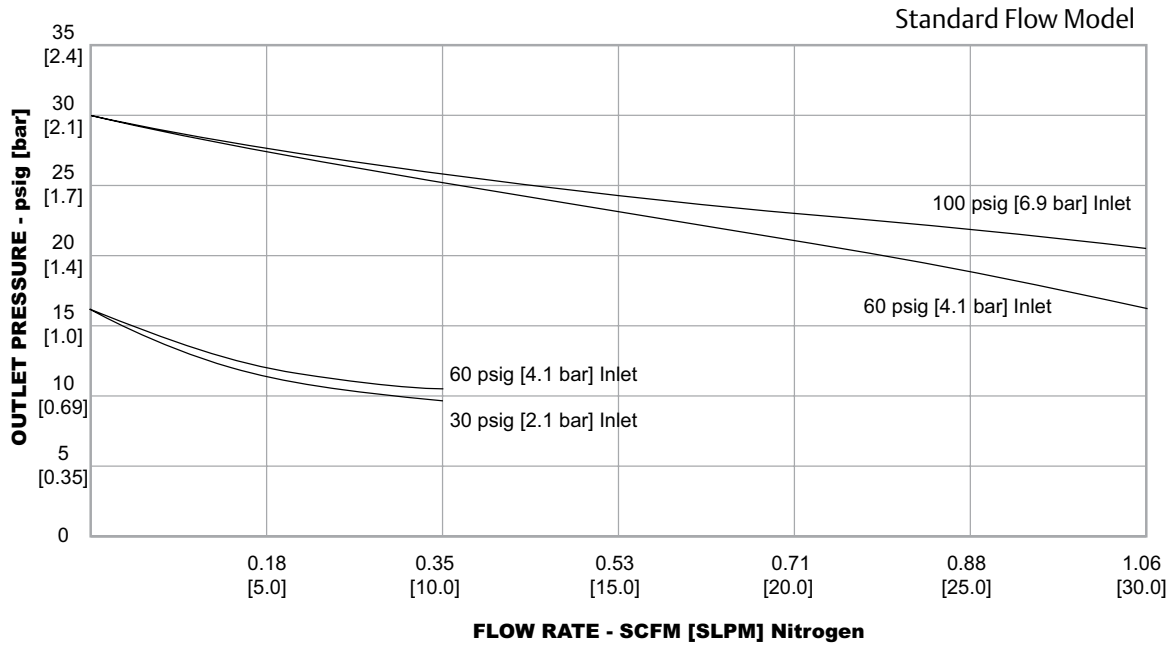


All dimensions are reference & nominal  
Metric [millimeter] equivalents are in brackets

\*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](http://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 <sup>®1</sup> Hastelloy <sup>®1</sup>	PCTFE	10 R <sub>a</sub> 5 R <sub>a</sub>	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 <sup>®</sup> (2.78" ETE <sup>2</sup> ) AAEM6EM6 – 1/4" Fixed Male VCR <sup>®</sup> (2.78" ETE <sup>2</sup> ) AABM5BM5 – 1/4" Tube Stubs (2.00" ETE <sup>2</sup> ) For A-Style Only: ABEB7EB7 – 1/4" Fixed Male VCR <sup>®</sup> (3.70" ETE <sup>2</sup> ) ABDB7DB7 – 1/4" Female VCR <sup>®</sup> (3.70" ETE <sup>2</sup> ) ABDB7EB7 – 1/4" Female VCR <sup>®</sup> IN 1/4" Fixed Male VCR <sup>®</sup> OUT (3.70" ETE <sup>2</sup> ) ABEB7DB7 – 1/4" Fixed Male VCR <sup>®</sup> IN 1/4" Female VCR <sup>®</sup> OUT (3.70" ETE <sup>2</sup> )	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 <sup>®</sup> 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.