

# 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

<b>Maximum Inlet Pressure</b>	150 psig / 10.3 bar
<b>Maximum Outlet Pressure</b>	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
<b>Design Proof Pressure</b>	150% maximum rated
<b>Inboard Leak Rate</b>	<1 x 10 <sup>-9</sup> atm cc/sec He
<b>Operating Temperature</b>	-40°F to 140°F / -40°C to 60°C
<b>Flow Capacity</b>	Standard: C <sub>v</sub> = 0.04 High Flow: C <sub>v</sub> = 0.08

#### MEDIA CONTACT MATERIALS

<b>Body</b>	316L VAR Stainless Steel
<b>Diaphragm</b>	Hastelloy®*
<b>Seat</b>	PCTFE
<b>Valve Stem</b>	Hastelloy®*
<b>Remaining Parts</b>	316L VAR Stainless Steel

#### OTHER

<b>Connections</b>	<b>Surface Mount:</b> 1.125" or 1.50" footprint <b>Welded Fittings:</b> 1/4" VCR® or tube stubs
<b>Internal Volume</b>	<b>1/4" VCR®:</b> 3.0 cc <b>1.125" C Seal:</b> 1.8 cc <b>1.50" C Seal:</b> 1.5 cc
<b>Weight</b>	<b>VCR®, IGS:</b> 0.60 lbs / 0.3 kg <b>A-Style:</b> 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



TESCOM 12 Series is a miniature ultra high purity IGS/VCR pressure reducing regulator. The 12 Series offers 5 R<sub>a</sub> or 10 R<sub>a</sub> 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.

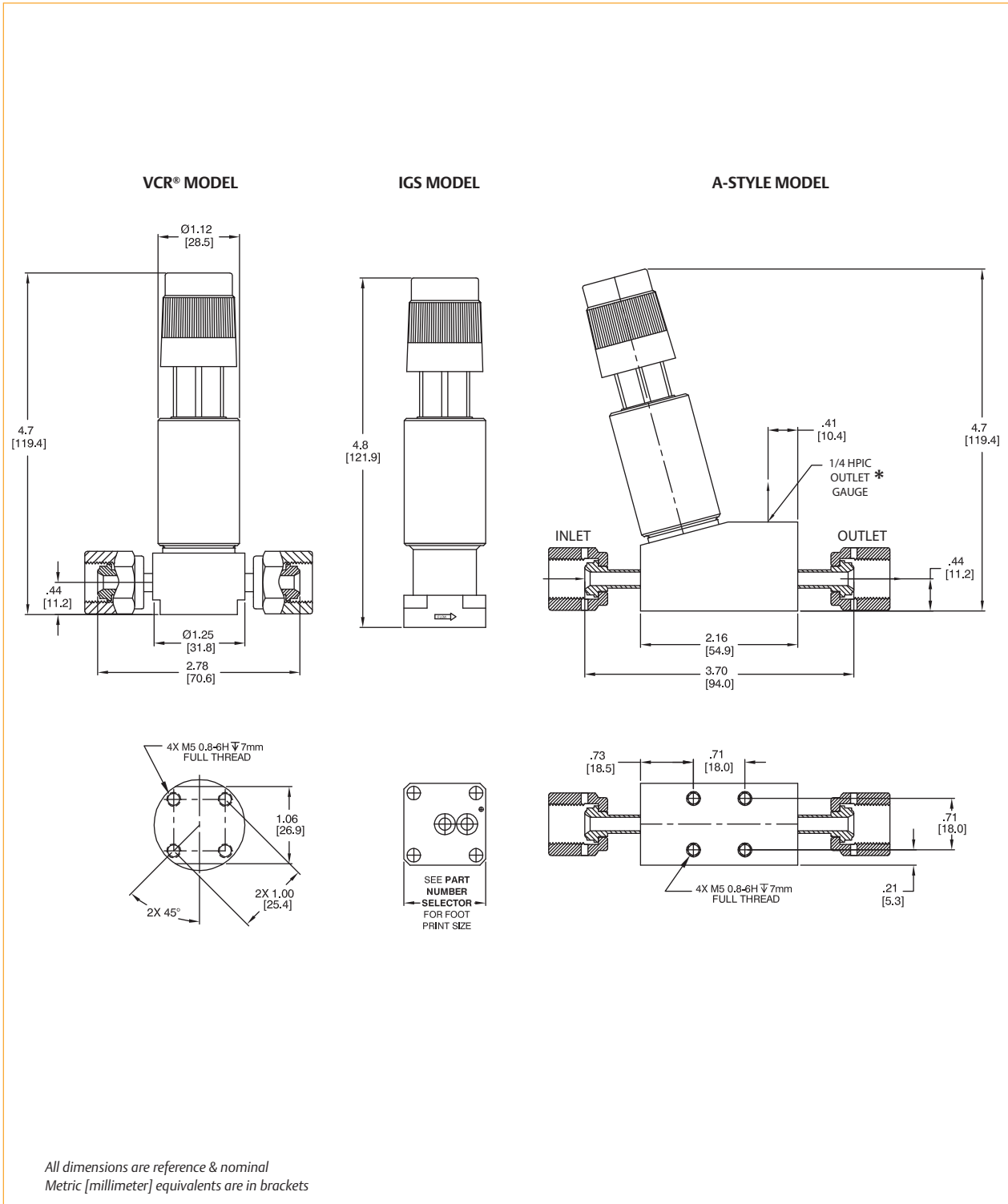
### Applications

- 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<sub>a</sub> or 5 R<sub>a</sub> microinch internal surface finish
- Meets SEMI F19 and SEMI Modular Interface specifications

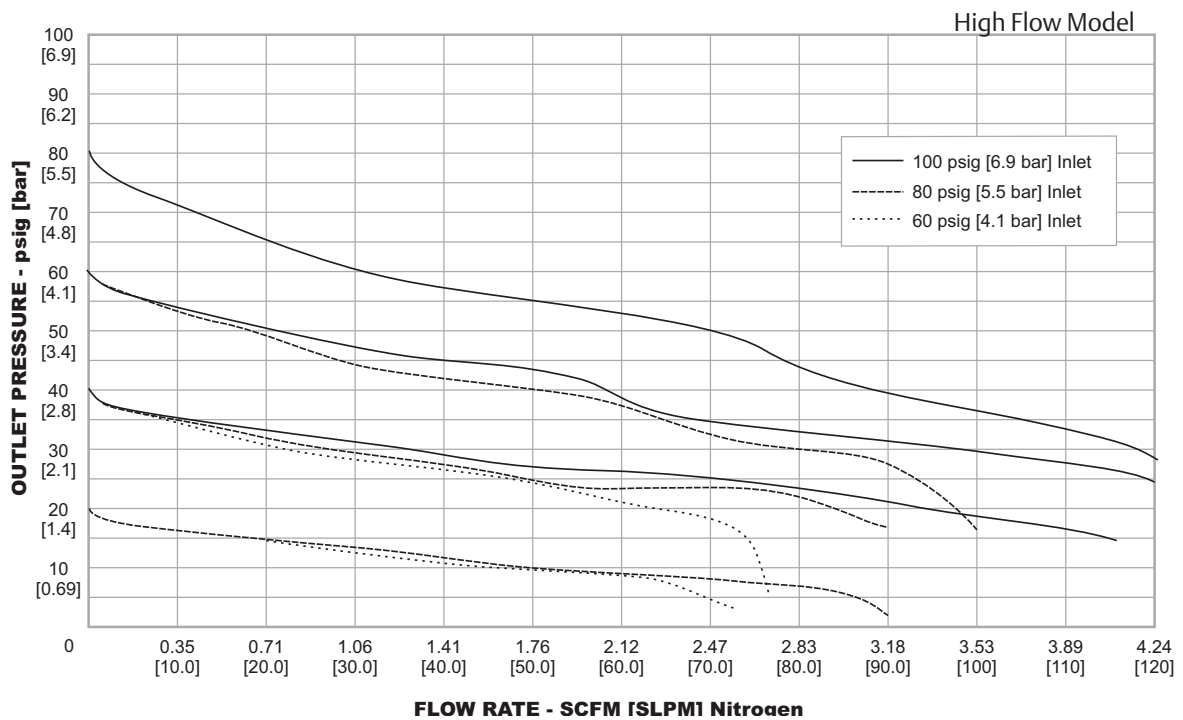
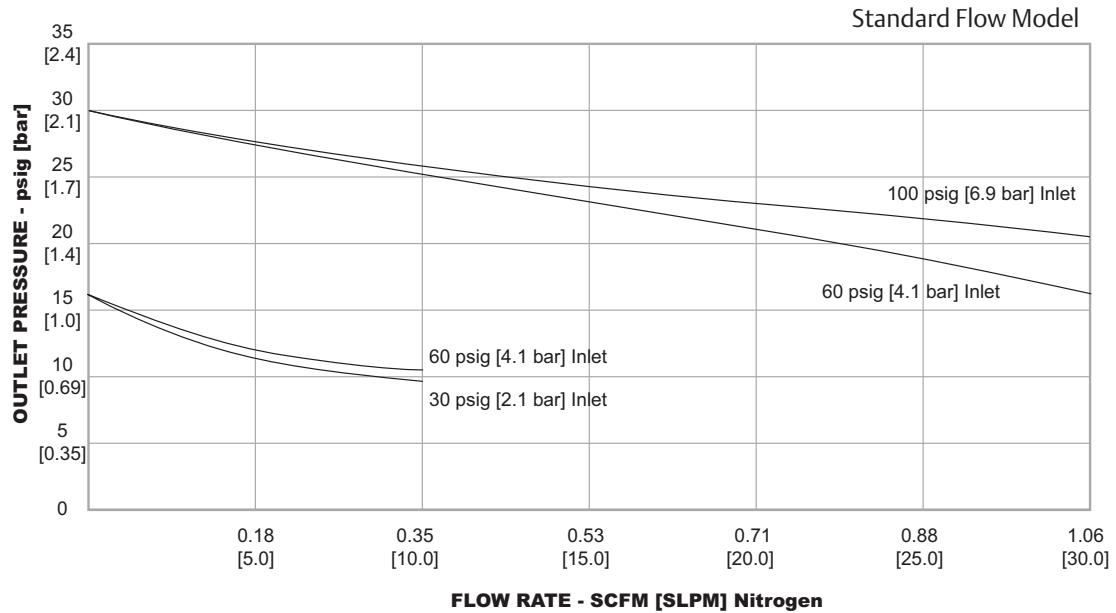
12 Series Regulator Drawing



\*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:

12 - 1 A 1 1 A ADM6DM6 Z

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	Hastelloy <sup>®1</sup>	PCTFE	10 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> )  <b>For A-Style Only:</b> 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
			B - 316L VAR Stainless Steel	Hastelloy <sup>®1</sup>	PCTFE	5 R <sub>a</sub>				
			1. Material to be Hastelloy <sup>®</sup> or equivalent per ASTM B 574 2. ETE - End-to-End dimension							