

# SG2 Series

## Regulators - Pressure Reducing

DSG022032X012

### Specifications

For questions about this product, please consult TESCO.

#### OPERATING PARAMETERS

Pressure rating per criteria of CGA E-4; ASME B31; ASME BPVC

**Maximum Inlet Pressure**

4500 psig / 310 bar

**Maximum Outlet Pressure**

15, 25, 50, 125, 250 psig  
103, 172, 345, 862, 1724 kPa  
1.0, 1.7, 3.4, 8.6, 17.2 bar

**Design Proof Pressure**

150% of rated pressure

**Leakage**

**Internal:** Bubble-tight

**External:** Designed to meet  $< 2 \times 10^{-8}$  atm cc/sec He

**Operating Temperature**

PCTFE seat: -40°F to 140°F / -40°C to 60°C

Polyimide\* seat: -40°F to 250°F / -40°C to 121°C

**Flow Capacity**

$C_v = 0.06$

**Decaying Inlet Characteristic****For Stainless Steel Diaphragm**

-0.09 psig / -100 psig

-6 mbar / -6.9 bar

**For Neoprene Diaphragm**

-0.03 psig / -100 psig

-2 mbar / -6.9 bar



TESCOM SG2 Series is a compact, lightweight, high purity two-stage cylinder regulator for specialty, flammable and industrial gas flows of less than 4 SCFM / 112 SLPM. Sensitive, extra long-life metal diaphragm ensures gas purity and integrity. User-friendly model number enables the specifier to select optional gauges, relief and shut-off valves, and cylinder connections as part of the regulator assembly.

#### MEDIA CONTACT MATERIALS

**Body**

316L Stainless Steel, Nickel-Plated Brass

**Seat**

PCTFE, Polyimide\*

**Diaphragm**

316L Stainless Steel, Neoprene

**Filter**

10 micron nominal sintered Bronze

10 micron nominal sintered 316 Stainless Steel

**Seal**

Teflon® or Buna-N

**Remaining Parts**

Brass, 300 Series Stainless Steel

### Applications

- Laboratory and Point-of-Use Gas Systems in medical, pharmaceutical, food and beverage and other high purity applications
- Process analyzer gases, metal fabrication and specialty and industrial gas cylinders

### Features and Benefits

- Cartridge valve design incorporates 10 micron filter to protect the regulator seat and makes service simple
- Optional neoprene diaphragms provide exceptional sensitivity for precise pressure control

#### OTHERS

**Connections**

Inlet and outlet: 1/4" NPTF

Accessories: 1/4" NPTF

**Cleaning**

CGA 4.1 and ASTM G93

**Weight**

4.0 lbs / 1.8 kg

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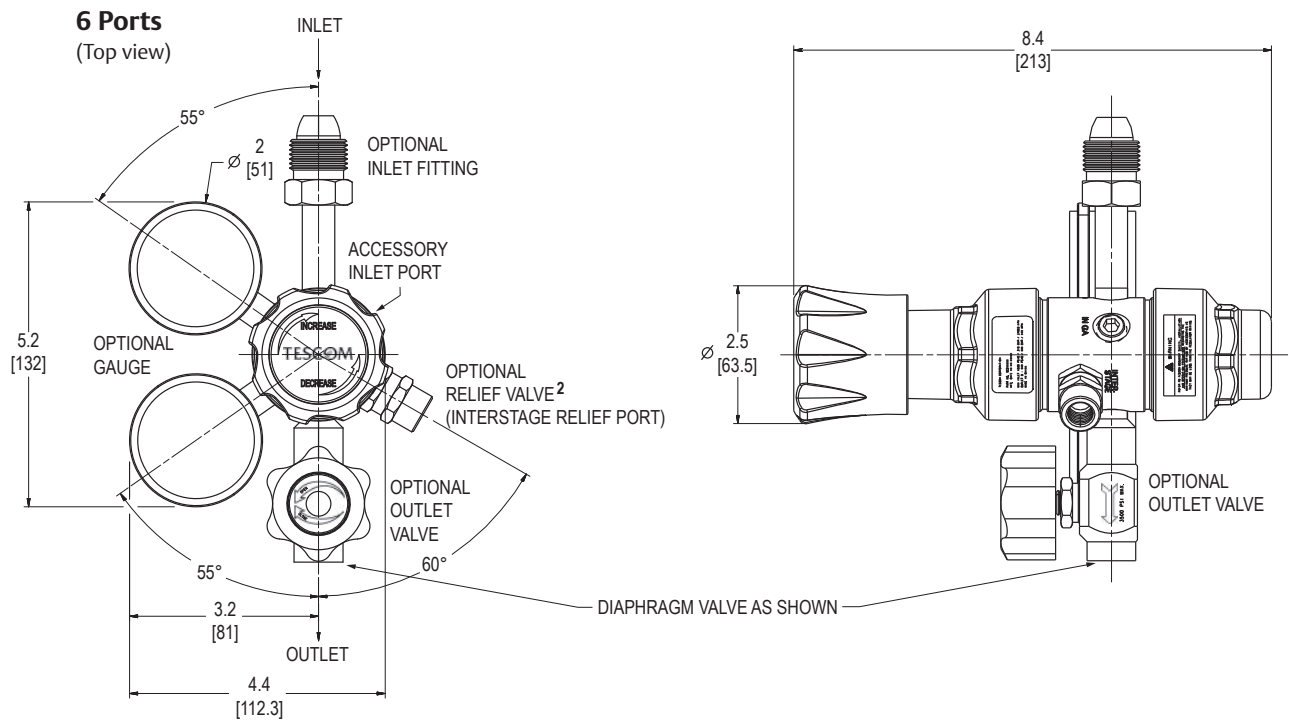
\*Per ASTM D 6456-99 Type II Class 1M (Meldin® 7021 or Vespe® SP-21)

**TESCOM**

[www.tescom.com](http://www.tescom.com)

  
**EMERSON**  
Process Management

## SG2 Series Regulator Drawing



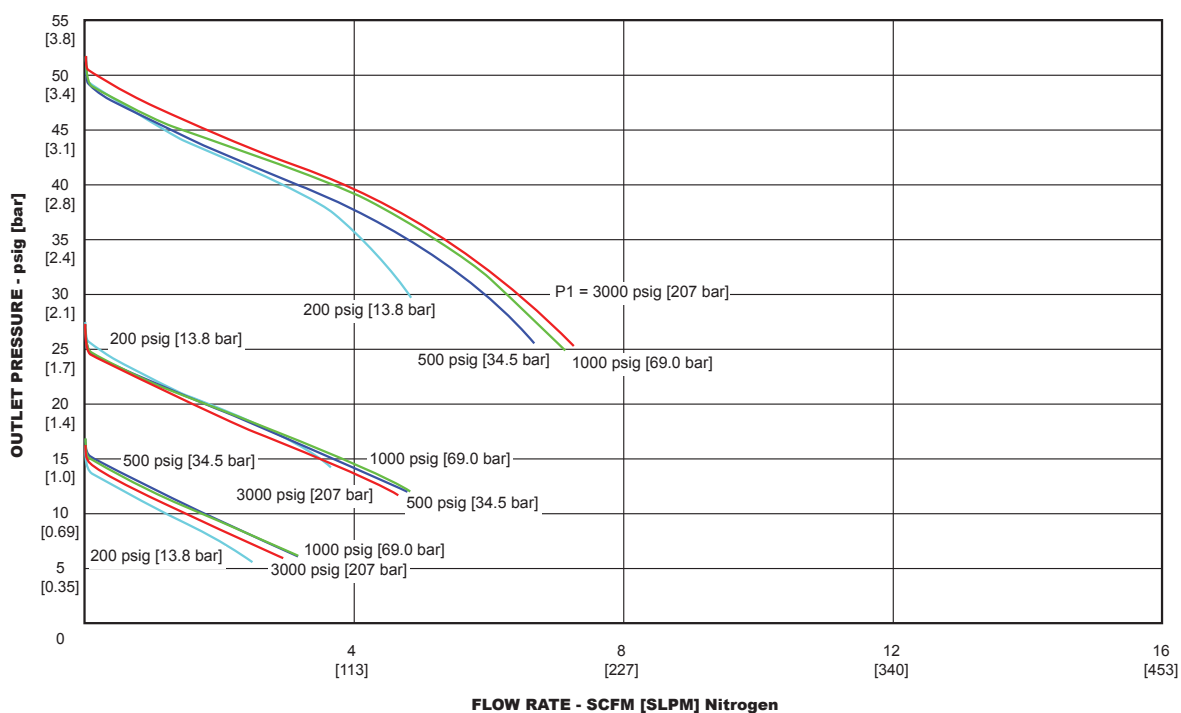
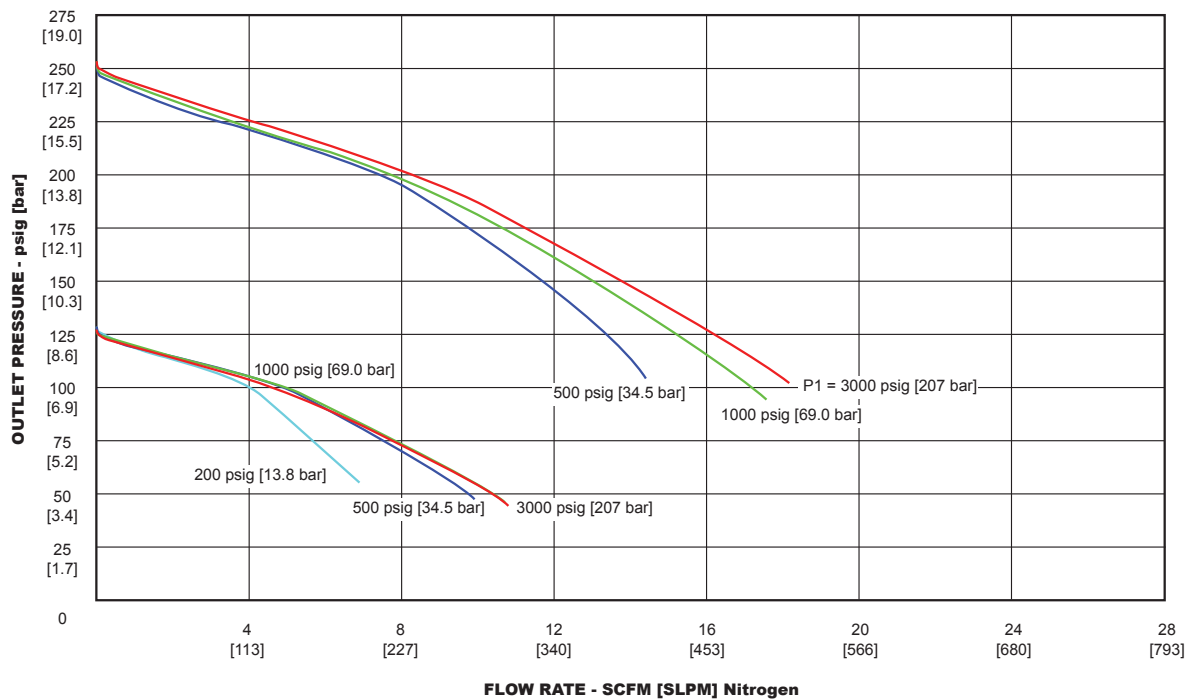
All dimensions are reference & nominal  
Metric [millimeter] equivalents are in brackets

## SG2 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).

$C_v = 0.06$  Model

Metal Diaphragm

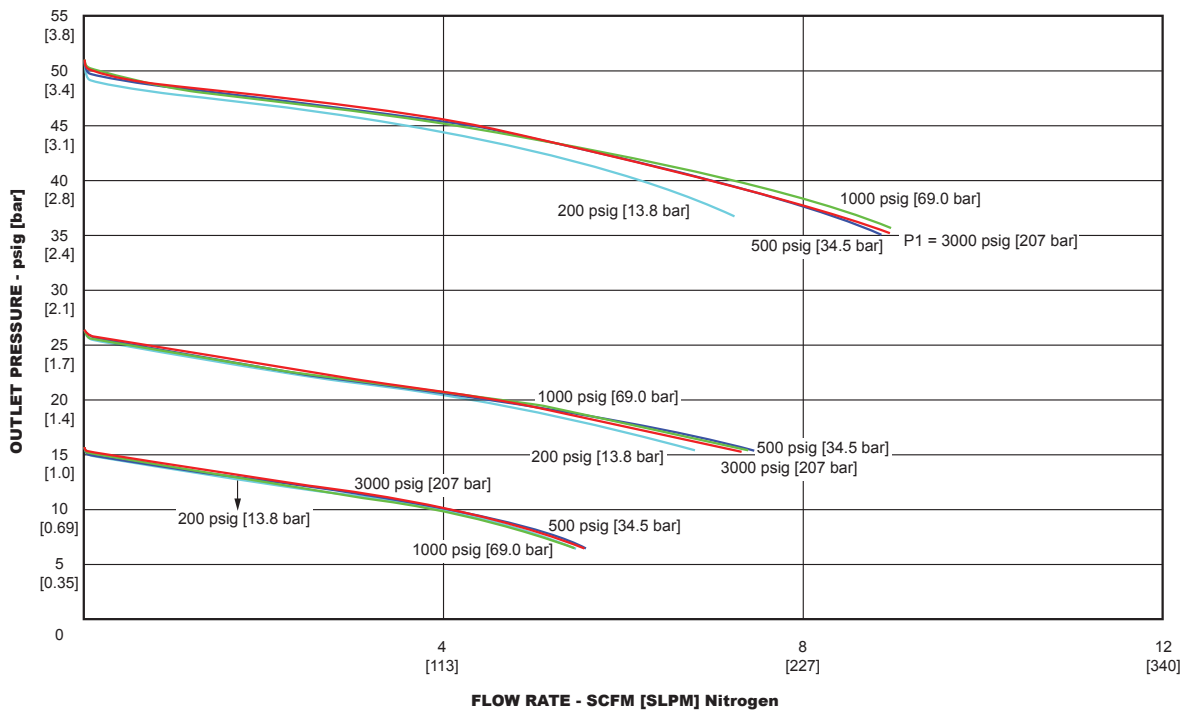
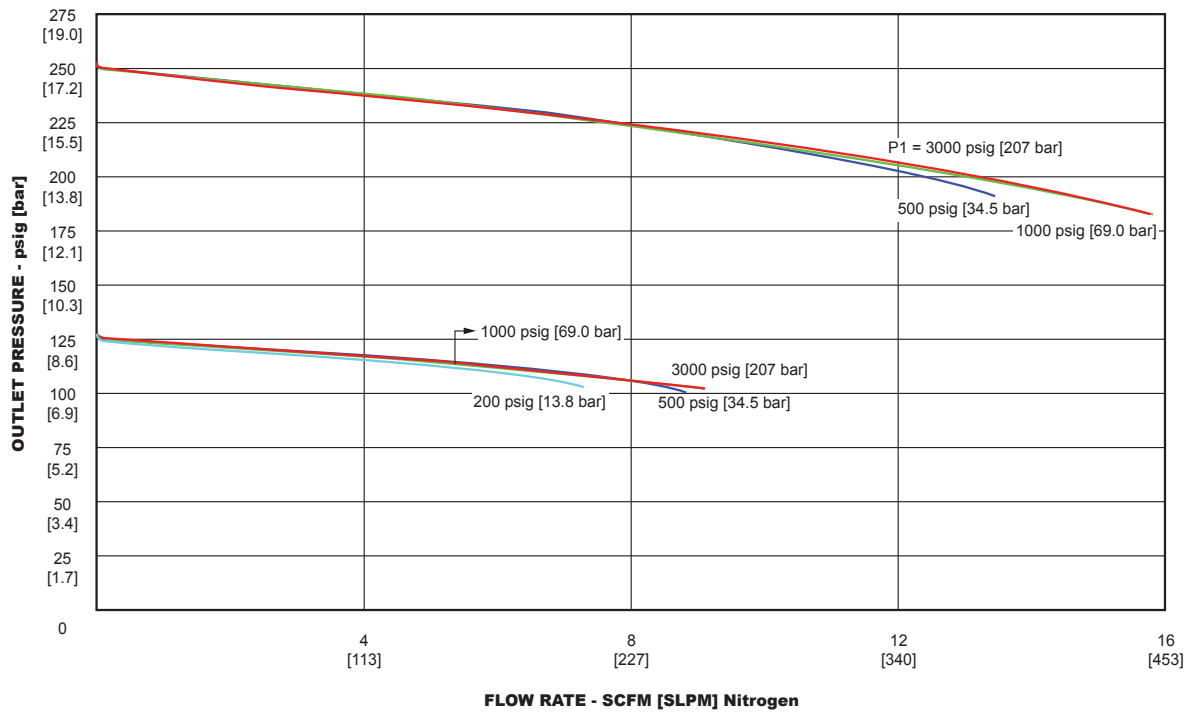


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**C<sub>v</sub> = 0.06 Model**

**Neoprene Diaphragm**

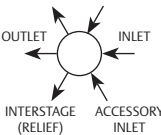


## SG2 Series Regulator Part Number Selector

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

### Base Model

Example for selecting a part number:

| SG2          | 6                                                       | 3                                                                                                                                                                               | 1                                            | 0                     | 0                                                                                                    | [Blank]        |                                               |
|--------------|---------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|-----------------------|------------------------------------------------------------------------------------------------------|----------------|-----------------------------------------------|
| BASIC SERIES | BODY MATERIAL                                           | OUTLET PRESSURE RANGES                                                                                                                                                          | DIAPHRAGM MATERIAL                           | SEAL MATERIAL         | PORTS (TOP VIEW)                                                                                     | C <sub>v</sub> | SEAT MATERIAL                                 |
| SG2          | P – Nickel-Plated Brass<br><br>6 – 316L Stainless Steel | 1 – 15 psig / 103 kPa / 1.0 bar<br>2 – 25 psig / 172 kPa / 1.7 bar<br>3 – 50 psig / 345 kPa / 3.4 bar<br>4 – 125 psig / 862 kPa / 8.6 bar<br>5 – 250 psig / 1724 kPa / 17.2 bar | 1 – 316L Stainless Steel<br><br>2 – Neoprene | Teflon®<br><br>Buna-N | 0 – 6 Port<br><br> | 0 – 0.06       | [Blank] – PCTFE<br>V – Polyimide <sup>1</sup> |

### Accessories

1. Per ASTM D 6456-99 Type II Class 1M (Meldin® 7021 or VespeI® SP-21)

Extension to base model part number:

| SG2XXXXXX              | 06                   | A                     | 1                         | A            |
|------------------------|----------------------|-----------------------|---------------------------|--------------|
| BASE MODEL NUMBER      | CYLINDER CONNECTIONS | GAUGES <sup>3</sup>   | RELIEF VALVE <sup>2</sup> | OUTLET VALVE |
| 00 – None              | 0 – None             | A – None              | 0 – None                  |              |
| 01 – CGA 296           | P – Plug(s)          | P – Plug              | A – Diaphragm Valve       |              |
| 02 – CGA 350           | A – psi / kPa        | 1 – Teflon® Pipe-away | B – Needle Valve          |              |
| C1 – CGA 510           | B – bar / psi        |                       |                           |              |
| 03 – CGA 540           |                      |                       |                           |              |
| 04 – CGA 580           |                      |                       |                           |              |
| 05 – CGA 590           |                      |                       |                           |              |
| 06 – DIN 477-1.1       |                      |                       |                           |              |
| 07 – DIN 477-1.3       |                      |                       |                           |              |
| 08 – DIN 477-1.5       |                      |                       |                           |              |
| 09 – DIN 477-1.6       |                      |                       |                           |              |
| 10 – DIN 477-1.7       |                      |                       |                           |              |
| 11 – DIN 477-1.8       |                      |                       |                           |              |
| 12 – DIN 477-1.9       |                      |                       |                           |              |
| 13 – DIN 477-1.10      |                      |                       |                           |              |
| 14 – DIN 477-1.14      |                      |                       |                           |              |
| 15 – DIN 477-5.54      |                      |                       |                           |              |
| 16 – DIN 477-5.57      |                      |                       |                           |              |
| 17 – DIN 477-5.59      |                      |                       |                           |              |
| 18 – BS 341 (2002) #01 |                      |                       |                           |              |
| 19 – BS 341 (2002) #02 |                      |                       |                           |              |
| 20 – BS 341 (2002) #03 |                      |                       |                           |              |
| 21 – BS 341 (2002) #04 |                      |                       |                           |              |
| 23 – BS 341 (2002) #06 |                      |                       |                           |              |
| 24 – BS 341 (2002) #07 |                      |                       |                           |              |
| 25 – BS 341 (2002) #08 |                      |                       |                           |              |
| 27 – BS 341 (2002) #10 |                      |                       |                           |              |
| 28 – BS 341 (2002) #11 |                      |                       |                           |              |
| 30 – BS 341 (2002) #13 |                      |                       |                           |              |
| 31 – BS 341 (2002) #14 |                      |                       |                           |              |
| 32 – BS 341 (2002) #15 |                      |                       |                           |              |

Note: Cylinder connections are available in all world areas.

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2. The relief valve is not intended to be a "Pressure Relief Device" as defined by ASME Boiler & Pressure Vessel Code - Section VIII, nor is it intended to be a "Safety Accessory" or "Pressure Limiting Device" as defined by the Pressure Equipment Directive (97/23/EC). The relief valve is intended to indicate a potential problem with the regulator and prevent further damage to the regulator. The relief valve is not intended to protect the downstream process equipment.

#### <sup>3</sup>GAUGE PRESSURE RANGES

| OUTLET PRESSURE RANGE                      | OUTLET GAUGE PRESSURE RANGE      |
|--------------------------------------------|----------------------------------|
| SG2X1XXXX – 15 psig / 103 kPa / 1.0 bar    | 0-30 psig / 200 kPa / 2 bar      |
| SG2X2XXXX – 25 psig / 172 kPa / 1.7 bar    | 0-30 psig / 200 kPa / 2 bar      |
| SG2X3XXXX – 50 psig / 345 kPa / 3.4 bar    | 0-60 psig / 400 kPa / 4 bar      |
| SG2X4XXXX – 125 psig / 862 kPa / 8.6 bar   | 0-160 psig / 1100 kPa / 11 bar   |
| SG2X5XXXX – 250 psig / 1724 kPa / 17.2 bar | 0-300 psig / 2000 kPa / 20 bar   |
| INLET PRESSURE RANGE                       | INLET GAUGE PRESSURE RANGE       |
| All                                        | 6000 psig / 41,000 kPa / 400 bar |

## SG2 Series Rebuild Kits

*Rebuild Kits include replacement cartridges, diaphragms, diaphragm seals and instruction sheet.*

| KIT PART NUMBER | FOR SG PART NUMBER |
|-----------------|--------------------|
| JT389-8935      | SG2PX100           |
| JT389-8936      | SG2PX200           |
| JT389-8937      | SG26X100           |
| JT389-8938      | SG26X200           |
| JT389-8935V     | SG2PX100V          |
| JT389-8936V     | SG2PX200V          |
| JT389-8937V     | SG26X100V          |
| JT389-8938V     | SG26X200V          |



**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*.

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