

SG1 Series

Regulators - Pressure Reducing

DSG012031X012

Specifications

For questions about this product, please consult TESCOM.

OPERATING PARAMETERS

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

Maximum Inlet Pressure

C_v = 0.06: 4500 psig / 310 bar

C_v = 0.2: 3000 psig / 207 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% maximum rated

Leakage

Internal: Bubble-tight

External: Designed to meet

< 2 x 10⁻⁸ atm cc/sec He / < 2 x 10⁻⁸ mbar l/s He

Operating Temperature

-40°F to 140°F / -40°C to 60°C

Flow Capacity

C_v = 0.06, 0.2

Decaying Inlet Characteristic

C_v = 0.06

0.37 psig / 100 psig

0.03 bar / 6.9 bar

C_v = 0.2

1.45 psig / 100 psig

0.10 bar / 6.9 bar



TESCOM SG1 Series is a compact, lightweight high purity single-stage regulator for specialty and industrial gas flows of less than 10 SCFM / 283 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, Plated Brass

Seat

PCTFE

Diaphragm

316 Stainless Steel or 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 a 10 micron filter that protects the regulator seat and makes service simple
- Optional neoprene diaphragm provides 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

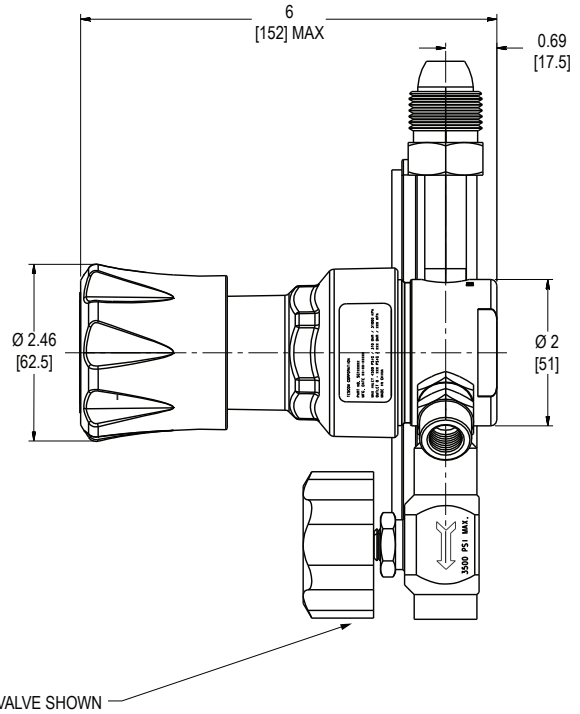
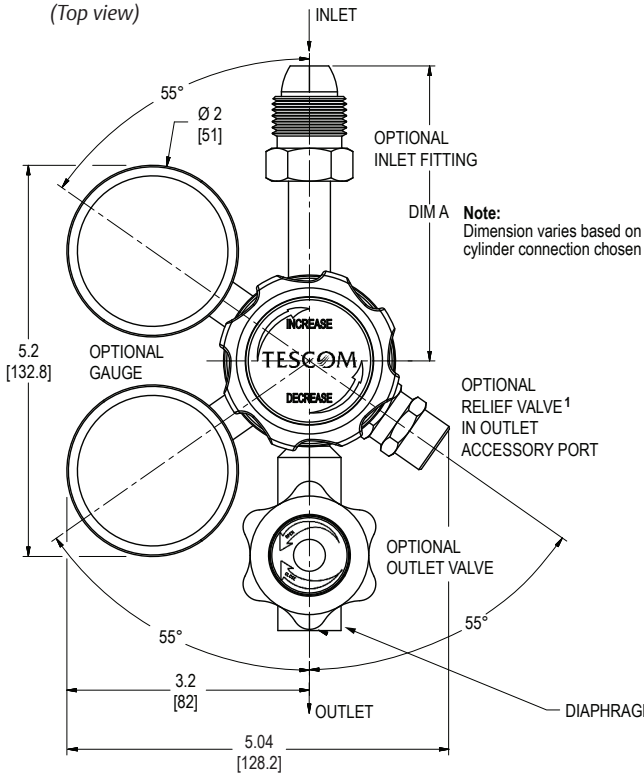
Weight

2.4 lbs / 1.1 kg

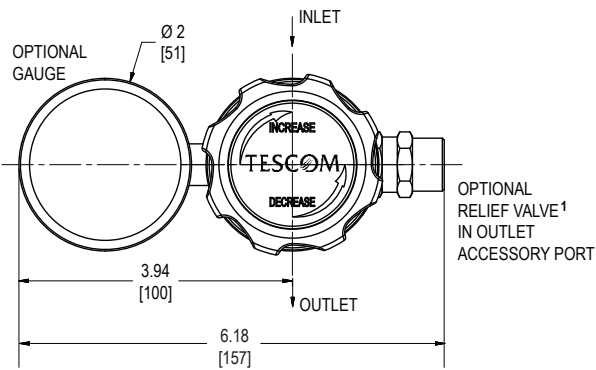
Teflon® is a registered trademark of E.I. du Pont de Nemours and Company.

SG1 Series Regulator Drawing

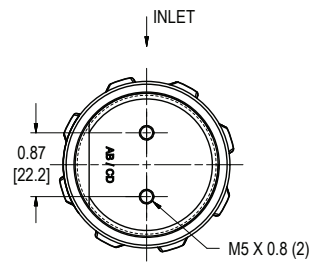
5 Ports
(Top view)



4 Ports
(Top view)



Bottom Mounting



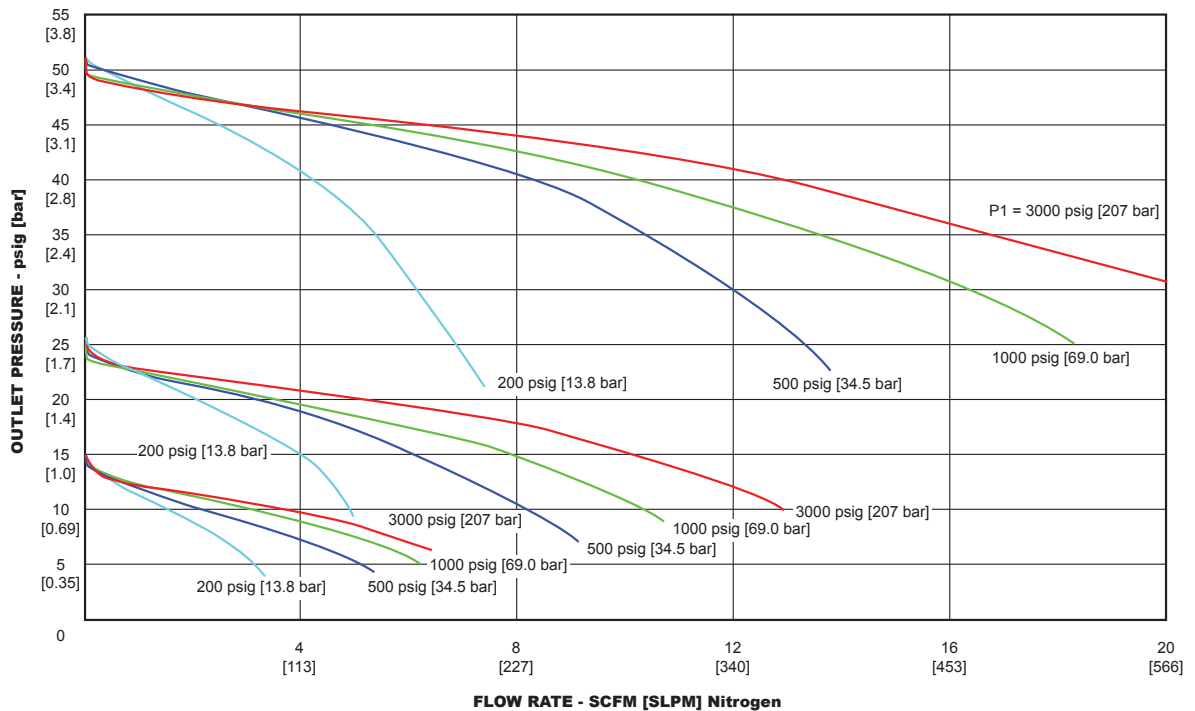
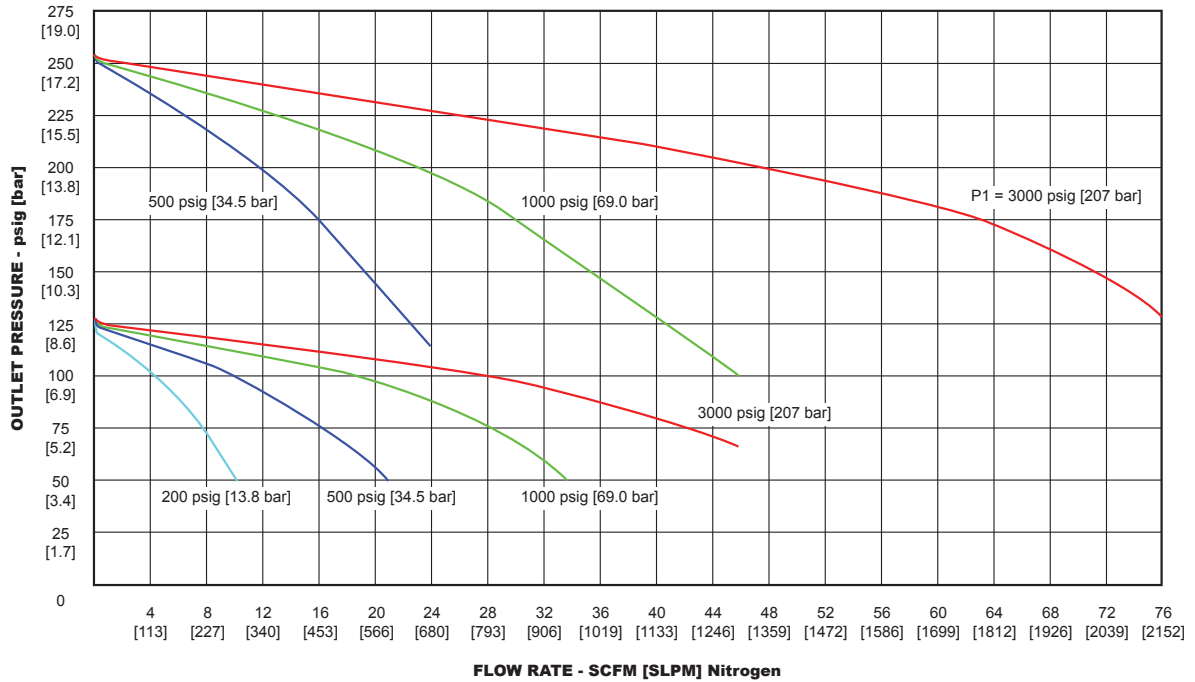
All dimensions are reference & nominal
Metric [millimeter] equivalents are in brackets

SG1 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.

C_v = 0.06 Model

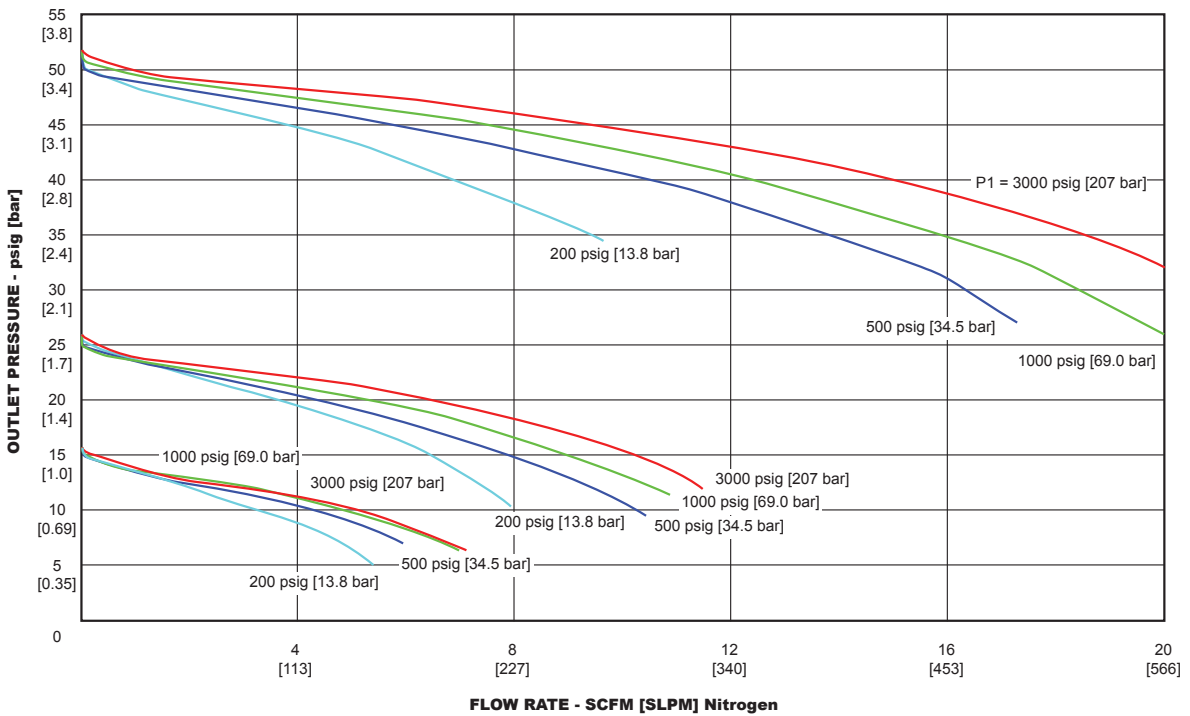
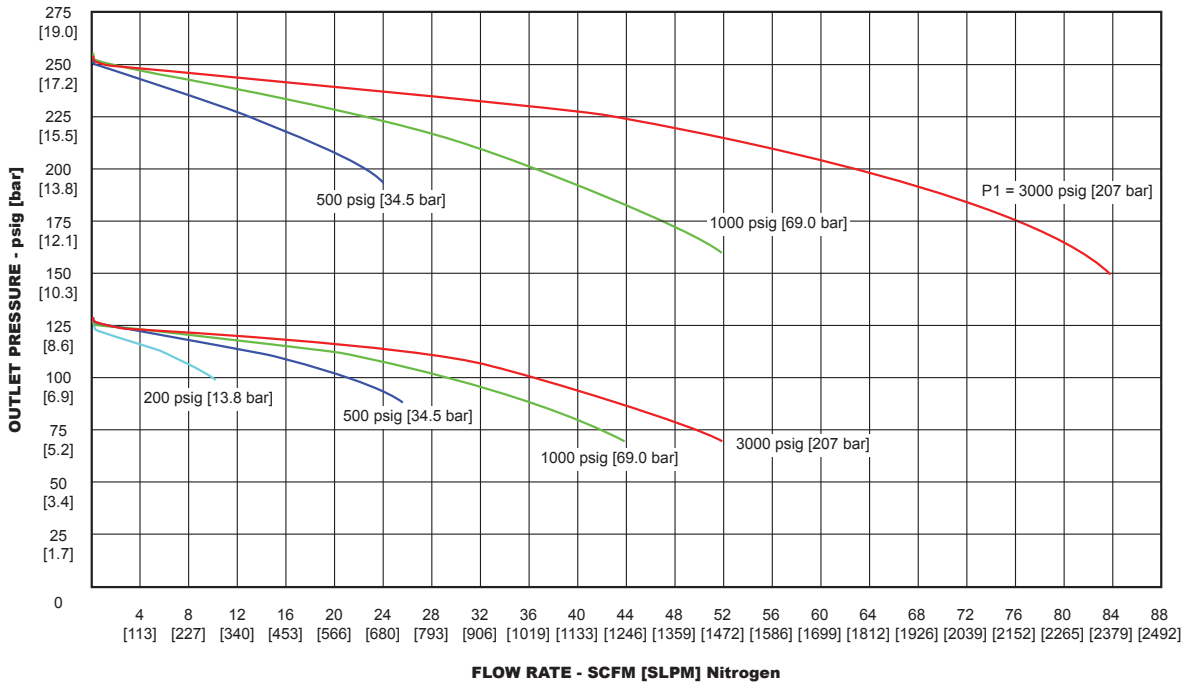
Metal Diaphragm



SG1 Series Regulator Flow Charts

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C_v = 0.06 Model Neoprene Diaphragm

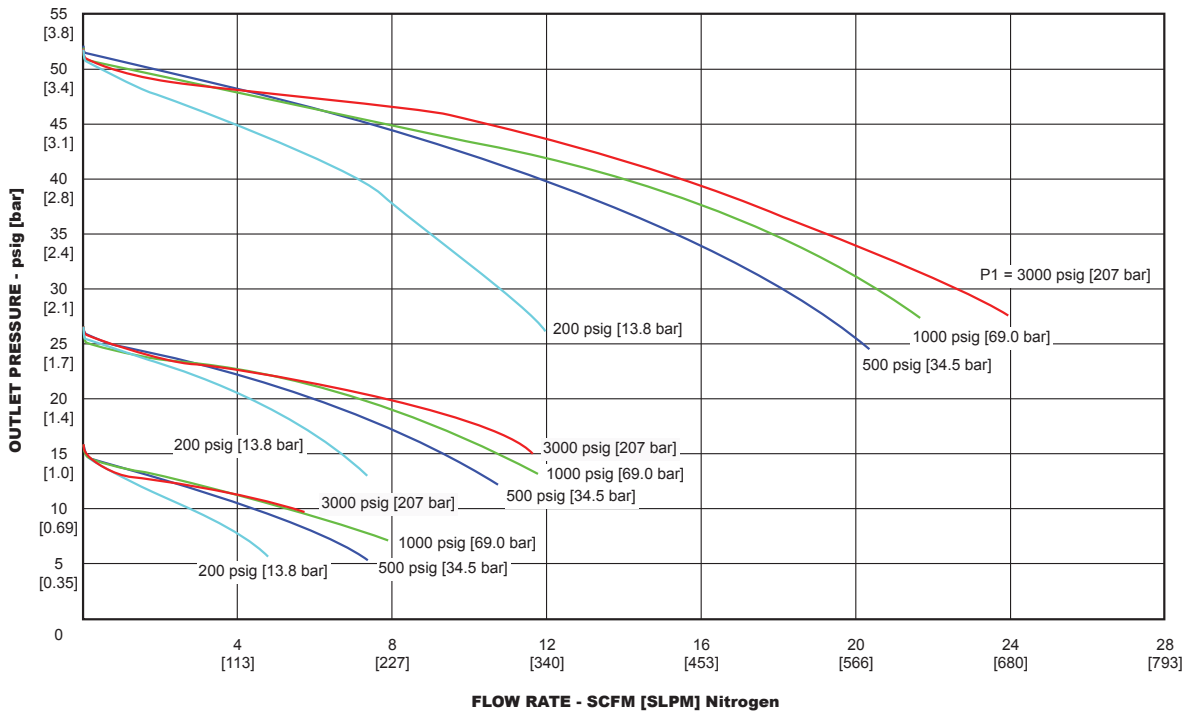
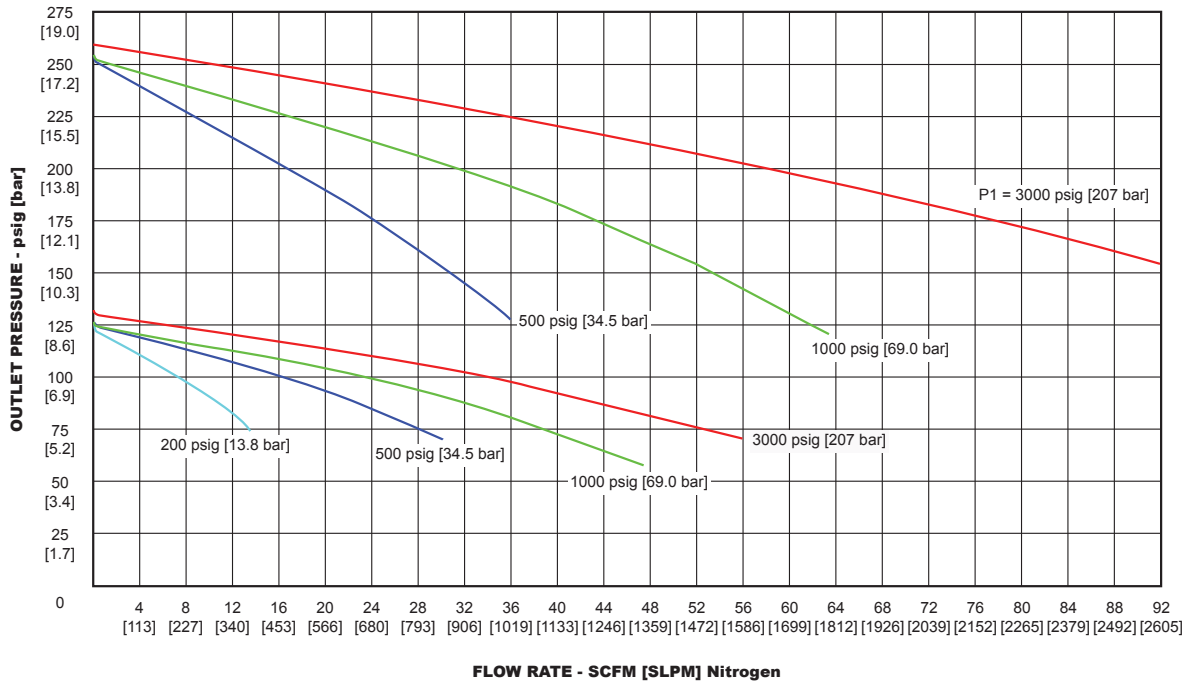


SG1 Series Regulator Flow Charts

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C_v = 0.20 Model

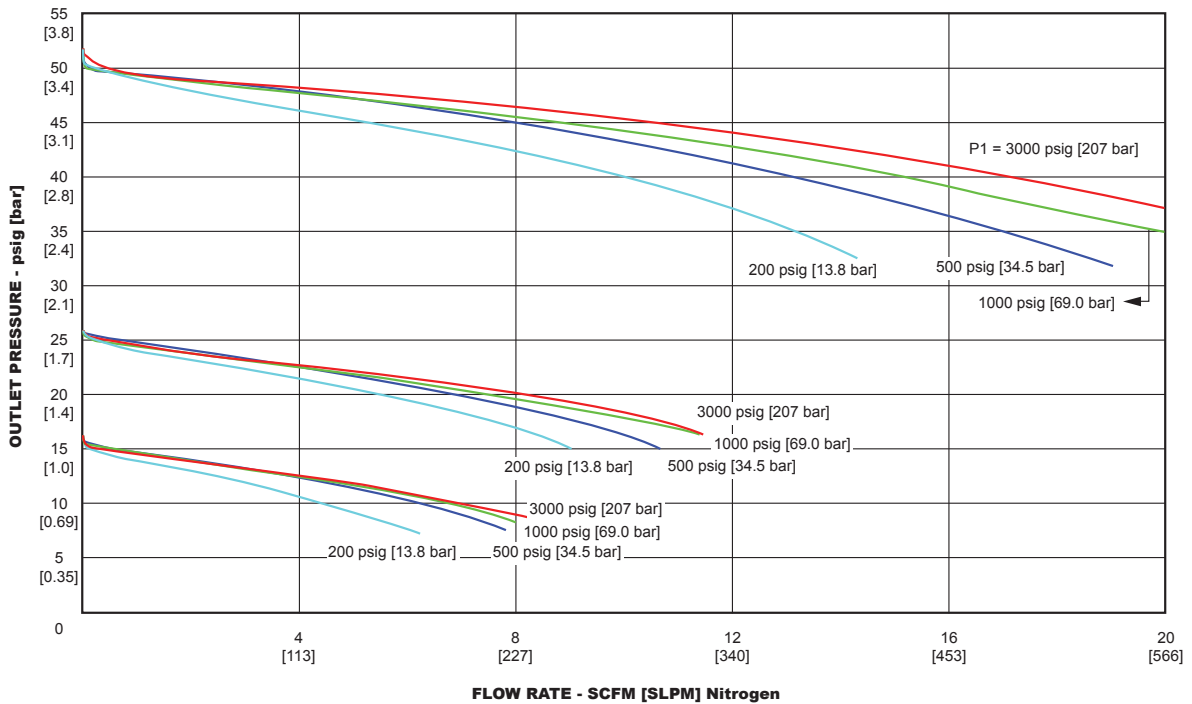
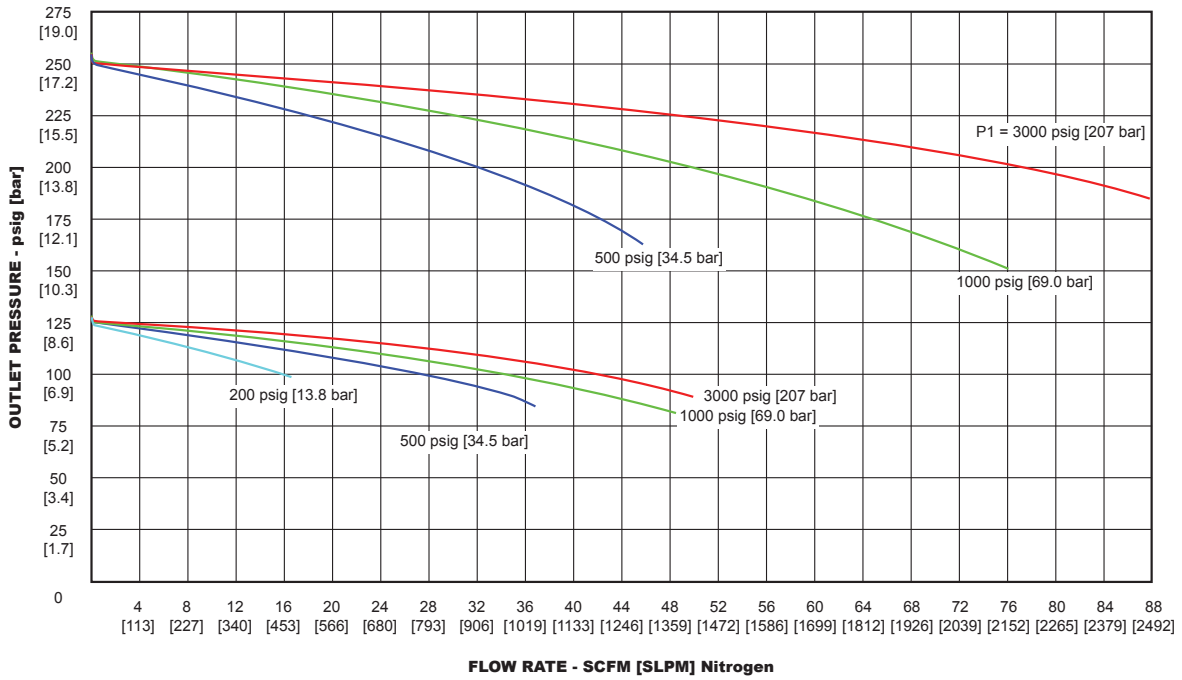
Metal Diaphragm



SG1 Series Regulator Flow Charts

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C_v = 0.20 Model Neoprene Diaphragm

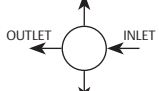
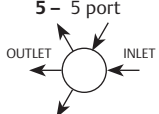


SG1 Series Regulator Part Number Selector

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

Base Model

Example for selecting a part number:

SG1	6	3	1	4	1		
BASIC SERIES	BODY MATERIAL	OUTLET PRESSURE RANGES	DIAPHRAGM MATERIAL	SEAL MATERIAL	PORTS ² (TOP VIEW)	FLOW C _v	P1
SG1	P – Plated Brass 6 – Stainless Steel	1 – 15 psig / 103 kPa / 1.0 bar 2 – 25 psig / 172 kPa / 1.7 bar 3 – 50 psig / 345 kPa / 3.4 bar 4 – 125 psig / 862 kPa / 8.6 bar 5 – 250 psig / 1724 kPa / 17.2 bar	1 – Stainless Steel 2 – Neoprene	Teflon® Buna-N	<p>4 – 4 port</p>  <p>5 – 5 port</p> 	1 – 0.06 2 – 0.2	4500 psig 31,026 kPa 310 bar 3000 psig 20,684 kPa 207 bar

Accessories

Extension to base model part number:

SG1XXXXX – 06 A 1 A

BASE MODEL NUMBER	CYLINDER CONNECTIONS	DIM A	GAUGES ²	RELIEF VALVE ¹	OUTLET VALVE
00 – None	---	---	0 – None	A – None	0 – None
01 – CGA 296**	3.75" / 95.2 mm	3.75" / 95.2 mm	P – Plug(s)	P – Plug	A – Diaphragm valve
02 – CGA 350*	3.25" / 82.5 mm	3.25" / 82.5 mm	A – psi / kPa	1 – Teflon® Pipe-away	B – Needle valve
03 – CGA 540*	3.25" / 82.5 mm	3.25" / 82.5 mm	B – bar / psi		
04 – CGA 580*	3.75" / 95.2 mm	3.75" / 95.2 mm			
05 – CGA 590*	3.75" / 95.2 mm	3.75" / 95.2 mm			
06 – DIN 477-1.1*	3.1" / 78.7 mm	3.1" / 78.7 mm			
07 – DIN 477-1.3	3.1" / 78.7 mm	3.1" / 78.7 mm			
08 – DIN 477-1.5*	3.25" / 82.5 mm	3.25" / 82.5 mm			
09 – DIN 477-1.6*	3.1" / 78.7 mm	3.1" / 78.7 mm			
10 – DIN 477-1.7	3.1" / 78.7 mm	3.1" / 78.7 mm			
11 – DIN 477-1.8	3.1" / 78.7 mm	3.1" / 78.7 mm			
12 – DIN 477-1.9	3.1" / 78.7 mm	3.1" / 78.7 mm			
13 – DIN 477-1.10*	3.75" / 95.2 mm	3.75" / 95.2 mm			
14 – DIN 477-1.14	3.75" / 95.2 mm	3.75" / 95.2 mm			
15 – DIN 477-5.54	3.75" / 95.2 mm	3.75" / 95.2 mm			
16 – DIN 477-5.57	3.75" / 95.2 mm	3.75" / 95.2 mm			
17 – DIN 477-5.59	3.75" / 95.2 mm	3.75" / 95.2 mm			
18 – BS 341 (1990) #01	3.75" / 95.2 mm	3.75" / 95.2 mm			
19 – BS 341 (1990) #02	3.75" / 95.2 mm	3.75" / 95.2 mm			
20 – BS 341 (1990) #03**	3.75" / 95.2 mm	3.75" / 95.2 mm			
21 – BS 341 (1990) #04*	3.75" / 95.2 mm	3.75" / 95.2 mm			
22 – BS 341 (1990) #05***	3.75" / 95.2 mm	3.75" / 95.2 mm			
23 – BS 341 (1990) #06**	2.75" / 69.8 mm	2.75" / 69.8 mm			
24 – BS 341 (1990) #07***	2.75" / 69.8 mm	2.75" / 69.8 mm			
25 – BS 341 (1990) #08	2.75" / 69.8 mm	2.75" / 69.8 mm			
26 – BS 341 (1990) #09	2.75" / 69.8 mm	2.75" / 69.8 mm			
27 – BS 341 (1990) #10	2.75" / 69.8 mm	2.75" / 69.8 mm			
28 – BS 341 (1990) #11	2.75" / 69.8 mm	2.75" / 69.8 mm			
29 – BS 341 (1990) #12	2.75" / 69.8 mm	2.75" / 69.8 mm			
30 – BS 341 (1990) #13	2.25" / 57.1 mm	2.25" / 57.1 mm			
31 – BS 341 (1990) #14	2.25" / 57.1 mm	2.25" / 57.1 mm			
32 – BS 341 (1990) #15	2.25" / 57.1 mm	2.25" / 57.1 mm			

* Stock item
 ** Stock item - Brass only
 *** Stock item - Stainless Steel only
 Note: Cylinder connections are available in all world areas.

¹ 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.

² GAUGE PRESSURE RANGES	
OUTLET PRESSURE RANGE	OUTLET GAUGE PRESSURE RANGE
SG1X1XXX – 15 psig / 103 kPa / 1.0 bar	0-30 psig / 200 kpa / 2 bar
SG1X2XXX – 25 psig / 172 kPa / 1.7 bar	0-30 psig / 200 kpa / 2 bar
SG1X3XXX – 50 psig / 345 kPa / 3.4 bar	0-60 psig / 400 kpa / 4 bar
SG1X4XXX – 125 psig / 862 kPa / 8.6 bar	0-160 psig / 1100 kpa / 11 bar
SG1X5XXX – 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

SG1 Series Rebuilt Kits

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

KIT PART NUMBER	FOR SG PART NUMBER
JT389-8927	SG1PX1X1
JT389-8928	SG1PX1X2
JT389-8929	SG1PX2X1
JT389-8930	SG1PX2X2
JT389-8931	SG16X1X1
JT389-8932	SG16X1X2
JT389-8933	SG16X2X1
JT389-8934	SG16X2X2