

CS800 Series Commercial/Industrial Pressure Reducing Regulators

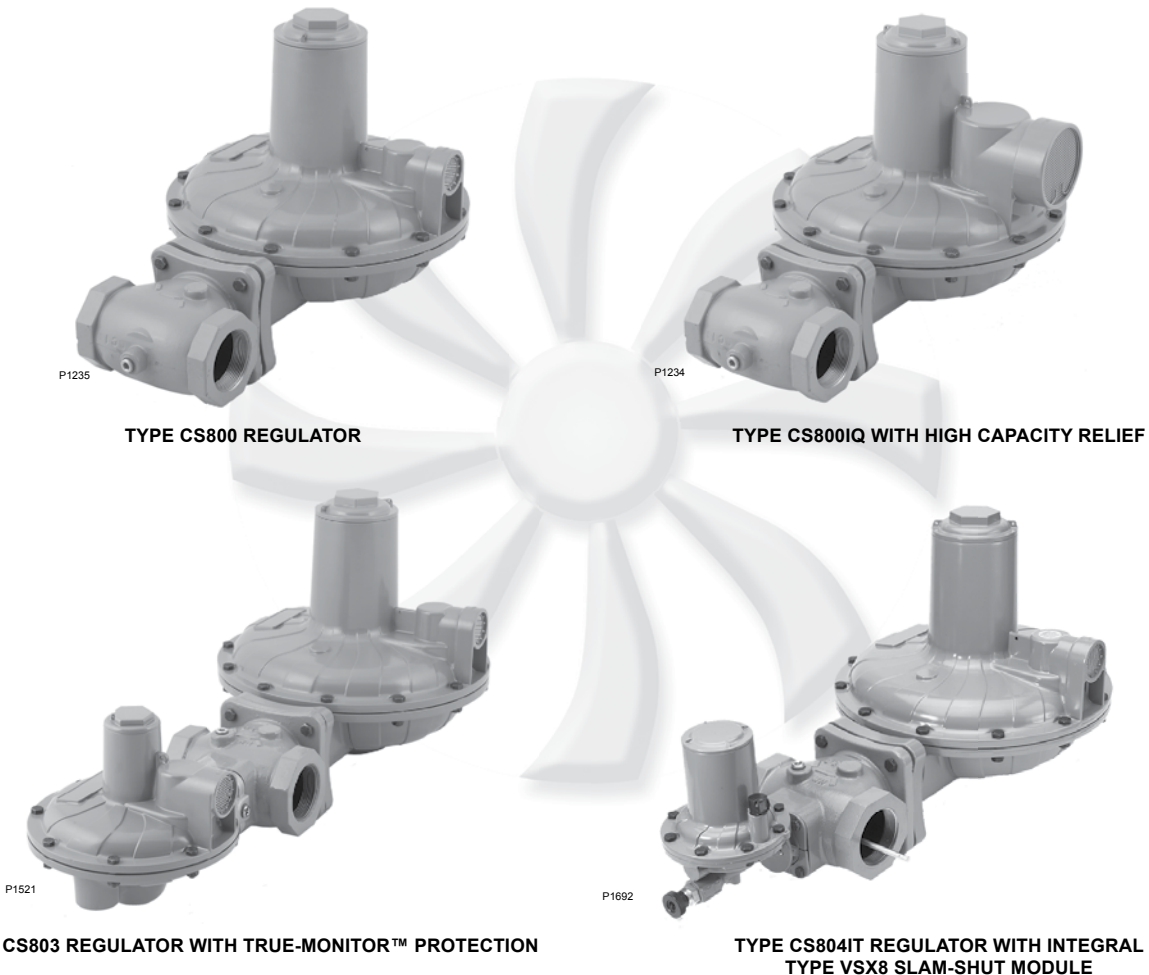


Figure 1. Typical CS800 Series Pressure Reducing Regulator

Features and Benefits

- Flow-optimized disks provide the maximum flow for your application
- Largest number of overpressure protection offerings in the industry
- Wide variety of body sizes and end connections
- Body materials available in gray cast iron, ductile iron and steel
- Fixed Factor/Pressure Factor Measurement (PFM) accuracy capabilities
- Only standard tools required for pressure adjustment and orifice removal
- Simplified maintenance



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Specifications

The Specifications section lists the specifications for the CS800 Series Regulators. The following information is stamped on the nameplate of CS800 Series: Type Number, Maximum Outlet Pressure and Spring Range.

| | |
|--|---|
| <p>Available Configurations See Table 1</p> <p>Body Sizes, Material, End Connection and Pressure Rating⁽¹⁾ See Table 2</p> <p>Maximum Inlet Pressures⁽¹⁾ Emergency: 175 psig / 12.1 bar Operating: See Table 3</p> <p>Maximum Outlet Pressure⁽¹⁾ Emergency (Casing): 15 psig / 1.0 bar To avoid internal parts damage: 3 psig / 0.21 bar differential above outlet pressure setting</p> <p>Outlet Pressure Ranges⁽¹⁾ Regulator: 3.5 in. w.c. to 10 psig / 9 mbar to 0.69 bar See Table 4</p> <p>Internal Relief Performance Approximate Internal Relief Start-to-Discharge Point: See Table 5 Relief Performance: <i>For Standard Internal Relief:</i> See Figures 9, 11, 13, 15, 17 and 19 <i>For High Capacity Internal Relief:</i> See Figures 10, 12, 14, 16, 18 and 20</p> <p>Token Relief Performance Approximate Token Relief Start-to-Discharge: See Table 5</p> <p>Maximum Token Relief Discharge Capacities: See Figure 8</p> <p>Flow Capacities With Standard Construction: See Tables 14 through 16 and 18 through 51 With True-Monitor™ or Slam Shut: See Tables 14 through 51 With Secondary Seat™ Construction: See Tables 52 through 66 With Low Inlet Option⁽³⁾: See Tables 17 and 53</p> <p>Orifice Sizes, Flow Coefficients and IEC Sizing Coefficients See Table 3</p> <p>Temperature Capabilities⁽¹⁾⁽²⁾ -20 to 150°F / -29 to 66°C</p> | <p>Spring Case Vent Connection Internal Relief: 1 NPT High Capacity Relief: 2-1/2 NPT</p> <p>External Registration Connection 3/4 NPT</p> <p>Spring Case Vent and Body Orientation See Figure 21</p> <p>Secondary Seat Approximate Lockup Values and Associated Internal Relief Start-to-Discharge: See Table 6</p> <p>TM600 Series True-Monitor Performance⁽¹⁾ Inlet Pressure Ratings <i>Maximum Operating:</i> Up to 125 psig / 8.6 bar <i>Maximum Emergency:</i> 175 psig / 12.1 bar Outlet Pressure Range: 12 in. w.c. to 7.5 psig / 30 mbar to 0.52 bar</p> <p>Type VSX8 Slam-Shut Device⁽¹⁾ Maximum Inlet Pressure: 175 psig / 12.1 bar Maximum Operating Inlet Pressure: 175 psig / 12.1 bar</p> <p>Construction Materials CS800 Series Main Valve and Actuator <i>Body:</i> Gray Cast Iron, Ductile Iron or Steel <i>Body O-ring:</i> Nitrile (NBR) <i>Closing Cap:</i> Aluminum <i>Adjusting Screw:</i> Aluminum, Brass or Zinc-plated steel <i>Upper and Lower Case:</i> Aluminum <i>Valve Stem:</i> Aluminum or Zinc-plated steel <i>Diaphragm Head:</i> Zinc-plated steel <i>Orifice:</i> <i>Standard:</i> Aluminum <i>Secondary Seat:</i> Brass <i>Pusher Post or Internal Relief Valve Seat:</i> Aluminum or Zinc-plated steel <i>Diaphragm and Disk:</i> Nitrile (NBR) <i>Control Spring:</i> Stainless steel or Steel <i>Relief Valve Spring:</i> Stainless steel <i>Relief Valve Spring Retainer:</i> Aluminum or Zinc-plated steel <i>Vent Screen:</i> Stainless steel <i>Retaining Ring:</i> Stainless steel or Zinc-plated steel <i>Lever Pin:</i> Stainless steel or hardened steel <i>Spring Seat:</i> Aluminum <i>Lever:</i> Steel</p> |
|--|---|

1. The pressure/temperature limits in this Bulletin or any applicable standard or code limitation should not be exceeded.

2. Product has passed Emerson Process Management Regulator Technologies, Inc. testing for lockup, relief start-to-discharge and reseal down to -40 degrees.

3. Applies to Capacities with Low Inlet Option, which offers Enhanced Flow Performance at Low Inlet pressures for the 2 in. / DN 50 body with 5.5 to 8.5 in. w.c. / 13 to 21 mbar spring range.

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Specifications (continued)

Construction Materials (continued)

Type TM600 True-Monitor™ Actuator

Diaphragm Case, Spring Case and Balanced Port

Assembly Housing: Aluminum

Diaphragm Retainer and Diaphragm Head:

Zinc-plated Steel

Valve Stem: Aluminum

Diaphragm: Nitrile (NBR)

Disk Holder and Disk Retainer: Brass

Disk/Seat Contact: Nitrile (NBR)

Monitor Stem: Stainless steel

Middle Diaphragm Retainer: Zinc-plated steel

Control Spring: Stainless steel

Vent Screen: Stainless steel

Vent Retaining Ring: Zinc-plated steel

Closing Cap: Aluminum

Adjusting Screw: Aluminum

O-rings: Nitrile (NBR)

Type VSX8 Slam-Shut Device

Diaphragm Case, Spring Case, Diaphragm Plate

and Valve Stem: Aluminum

Diaphragm and Disk: Nitrile (NBR)

Control Spring: Music Wire or Stainless steel

Construction Materials (continued)

Type VSX8 Slam-shut Device (continued)

Vent Screen: Stainless steel

Vent Screen Retainer: Zinc-plated steel

Closing Cap: Aluminum

Adjusting Screw: Aluminum

Designed, Tested and Evaluated Consistent with:

ASME B16, ASME Section VIII DIV I and

ASTM B117 (Corrosion Resistance)

Approximate Weights

With Threaded Body

Type CS800/CS820: 25 lbs / 11 kg

Type CS803/CS823: 34 lbs / 15 kg

Type CS804/CS824: 31 lbs / 14 kg

Type CS805/CS825: 26 lbs / 12 kg

Type CS806/CS826: 26 lbs / 12 kg

High-Pressure Types:

For CS85x add 2 lbs / 0.9 kg to Types listed above

With Flanged Body

Add 11 lbs / 5.0 kg to weights listed above

Table 1. Available Configurations

| TYPE NUMBER | | | | OPTIONS |
|---|---|---|---|---|
| C | S | 8 | | |
| | | | | OUTLET PRESSURE CONSTRUCTION |
| | | 0 | | Low Pressure Applications (<i>Outlet Pressure: 3.5 to 30 in. w.c. / 9 to 75 mbar</i>) |
| | | 2 | | Medium Pressure Applications (<i>Outlet Pressure: 1 to 5.5 psig / 69 mbar to 0.38 bar</i>) |
| | | 5 | | High Pressure Applications (<i>Outlet Pressure: 5 to 10 psig / 0.34 to 0.69 bar</i>) ⁽¹⁾ |
| | | | | OVERPRESSURE PROTECTION MODULE |
| | | 0 | | Without Overpressure Protection Module |
| | | 3 | | With Integral True-Monitor Module ⁽⁴⁾ |
| | | 4 | | With Slam-shut Module ⁽⁴⁾ |
| | | 5 | | With Secondary Seat™ Protection |
| | | 6 | | With Secondary Seat Protection with controlled bleed to indicate Secondary Seat is functioning ⁽²⁾ |
| | | | | PRESSURE REGISTRATION |
| | | | I | Internal Registration |
| | | | E | External Registration ⁽³⁾ |
| | | | | RELIEF |
| | | | N | Non-Relieving |
| | | | R | Internal Relief |
| | | | Q | High-Capacity Relief |
| | | | T | Token Relief |
| | | | L | Low Flow Token Relief |
| Example: Type Number CS800IR: Type CS800 regulator without Overpressure Protection Module with Internal Pressure Registration and with Internal Relief. | | | | |
| 1. High-pressure Construction is not available with True-Monitor Protection, Secondary Seat Protection or Relief. | | | | |
| 2. Available only with Internal Relief or High-Capacity Relief Constructions. | | | | |
| 3. Available only with Non-Relieving or Token Relief Constructions. | | | | |
| 4. Reference Instruction Manual D103126X012 for information regarding the Type TM600 Integral True-Monitor or Instruction Manual D103127X012 for Type VSX8 safety Slam-shut module. | | | | |

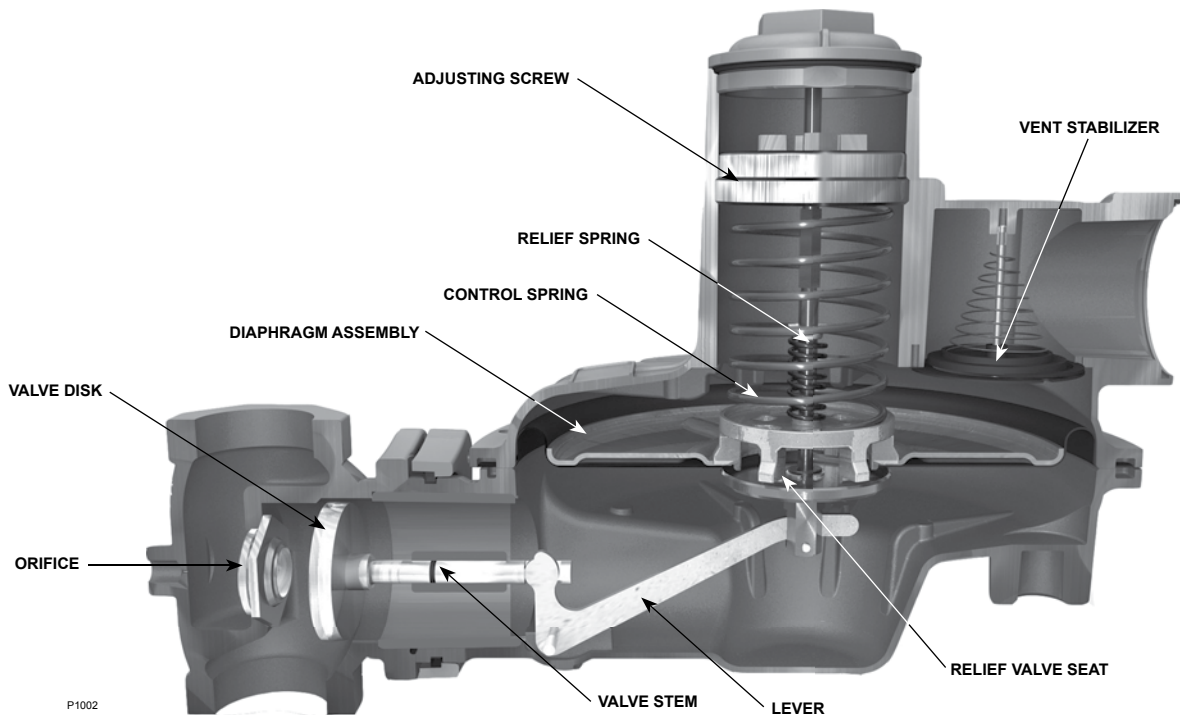


Figure 2. Internal View of CS800 Series with High Capacity Relief

Introduction

The CS800 Series direct-operated, spring-loaded regulators have been engineered to fit a multitude of commercial and industrial pressure-reducing applications. This flexibility is provided by the numerous body sizes and end connections, outlet pressure settings, orifice sizes, as well as the option for internal or external pressure registration.

In addition to application flexibility, the CS800 Series offers multiple overpressure protection options:

Overpressure Protection Options Available

- **Internal Relief** – Provides overpressure protection to the downstream system by relieving gas through the diaphragm assembly to atmosphere in the event of an overpressure situation.
- **High-Capacity Internal Relief** – Provides an increase in relief performance over internal relief thereby offering a significant improvement in the level of overpressure protection to the downstream system in the event of an overpressure occurrence.

- **True-Monitor™ Protection** – Combines the operation of a conventional two-regulator wide-open monitor set into one body. Provides a second monitoring regulator to control downstream pressure. In event of loss of downstream pressure control by the primary regulator due to damage to the lever, downstream sense line, orifice, disk, diaphragm, etc., the monitoring regulator will assume control of the downstream pressure and regulator flow.
- **Secondary Seat™ Protection** – Provides a solution to the most common cause of regulators failing to shut off by employing a secondary seating surface to provide shutoff in the event the primary orifice seating surface becomes damaged or blocked. See page 15 for additional information.
- **Slam-Shut Protection** – Discontinues gas service by shutting the gas off if there is an overpressure or underpressure condition.

Overpressure Relief

- **Token Relief** – Provides overpressure relief via a small capacity or token relief that relieves minor overpressure caused by thermal expansion or minor nicks in the orifice or disk.

Table 2. Body Sizes, Materials, End Connections and Maximum Cold Working Pressure Ratings⁽⁵⁾

| TYPE | BODY MATERIAL | END CONNECTION | BODY SIZE | | FACE-TO-FACE DIMENSION | | BODY INLET PRESSURE RATING | |
|---|----------------|---------------------|----------------------|--------------------|------------------------|--------------------|----------------------------|------|
| | | | In. | DN | In. | mm | psig | bar |
| CS800, CS805, CS806, CS820, CS825, CS826 and CS850 | Gray Cast Iron | NPT | 1-1/4 | ---- | 6.12 | 155 | 175 | 12.1 |
| | | | 1-1/2 | ---- | 6.12 | 155 | | |
| | | | 2 ⁽¹⁾ | ---- | 6.12 | 155 | | |
| | | | 2 | ---- | 6.12 | 155 | | |
| | | CL125 FF | 2 | 50 | 7.5 | 191 | 175 | 12.1 |
| 2 | 50 | | 10 | 254 | | | | |
| CS800 ⁽³⁾ , CS820 ⁽³⁾ , CS850 ⁽³⁾ , CS803, CS823, CS804, CS824 and CS854 | Gray Cast Iron | NPT | 2 ⁽²⁾ | ---- | 6.12 | 155 | 175 | 12.1 |
| | Ductile Iron | NPT | 1-1/4 ⁽⁴⁾ | ---- | 6.12 | 155 | 250 | 17.2 |
| | | | 1-1/2 | ---- | 6.12 | 155 | | |
| | | | 2 | ---- | 6.12 | 155 | | |
| | | Rp | 2 | ---- | 6.12 | 155 | 250 | 17.2 |
| | | CL125 FF / CL150 FF | 2 | 50 | 7.5 ⁽⁴⁾ | 191 ⁽⁴⁾ | 250 | 17.2 |
| | | | 2 | 50 | 10 | 254 | | |
| | PN 10/16 | 2 | 50 | 10.5 | 267 | 232 | 16 | |
| | | 2 | 50 | 7.5 ⁽⁴⁾ | 191 ⁽⁴⁾ | | | |
| | WCC Steel | NPT | 1-1/4 ⁽⁴⁾ | ---- | 6.12 | 155 | 290 | 20 |
| | | | 1-1/2 | ---- | 6.12 | 155 | | |
| | | | 2 | ---- | 6.12 | 155 | | |
| | | Rp | 2 | ---- | 6.12 | 155 | 290 | 20 |
| | | CL150 RF | 2 | 50 | 10 | 254 | 290 | 20 |
| | | PN 10/16 | 2 | 50 | 10 | 254 | 232 | 16 |

1. Standard on Types CS800, CS820 and CS850.
 2. Standard on Types CS803, CS804, CS823, CS824 and CS854.
 3. If a ductile iron or steel body material is selected without an Integral True-Monitor™ or Slam-shut Overpressure Protection (OPP) device, the port located at the bottom of the body will receive an aluminum plug.
 4. Not available on Types CS804, CS824 and CS854.
 5. The pressure/temperature limits in this Bulletin or any applicable standard or code limitation should not be exceeded.

Table 3. Inlet Pressure Ratings and Flow and Sizing Coefficients

| ORIFICE SIZE | | MAXIMUM OPERATING INLET PRESSURE TO OBTAIN OPTIMUM PERFORMANCE | | | | MAXIMUM EMERGENCY INLET PRESSURE | | WIDE-OPEN FLOW COEFFICIENTS | | | IEC SIZING COEFFICIENTS | | |
|-------------------------|----------------------|--|-----|--------------------|-----|----------------------------------|------|-----------------------------|----------------|----------------|-------------------------|----------------|----------------|
| | | psig Setpoints | | In. w.c. Setpoints | | | | | | | | | |
| In. | mm | psig | bar | psig | bar | psig | bar | C _g | C _v | C _i | X _T | F _L | F _D |
| 1/4 ⁽¹⁾ | 6.4 ⁽¹⁾ | 125 | 8.6 | 125 | 8.6 | 175 | 12.1 | 50 | 2.1 | 24.6 | 0.38 | 0.89 | 0.99 |
| 3/8 | 9.5 | 125 | 8.6 | 125 | 8.6 | 175 | 12.1 | 110 | 3.8 | 29.5 | 0.55 | 0.89 | 0.90 |
| 1/2 | 13 | 100 | 6.9 | 100 | 6.9 | 175 | 12.1 | 210 | 7.2 | 29.5 | 0.55 | 0.89 | 0.93 |
| 5/8 | 16 | 80 | 6.5 | 60 | 4.1 | 175 | 12.1 | 320 | 10.1 | 31.8 | 0.64 | 0.89 | 0.88 |
| 3/4 | 19 | 80 | 6.5 | 60 | 4.1 | 175 | 12.1 | 450 | 13.3 | 34 | 0.73 | 0.89 | 0.84 |
| 7/8 | 22 | 60 | 4.1 | 50 | 3.4 | 175 | 12.1 | 600 | 16.7 | 36 | 0.82 | 0.89 | 0.81 |
| 1 ⁽¹⁾ | 25 ⁽¹⁾ | 30 | 2.1 | 25 | 1.7 | 175 | 12.1 | 765 | 20.1 | 38.1 | 0.92 | 0.89 | 0.77 |
| 1-3/8 ⁽¹⁾⁽²⁾ | 35 ⁽¹⁾⁽²⁾ | 15 | 1.0 | 15 | 1.0 | 175 | 12.1 | 1125 | 29.8 | 37.7 | 0.90 | 0.89 | 0.76 |

1. Not available on the Types CS805, CS806, CS825 and CS826.
 2. Not available on the Types CS803 and CS823.

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Table 4. Outlet Pressure Ranges

| TYPE | OUTLET PRESSURE RANGE | | COLOR CODE | PART NUMBER | SPRING WIRE DIAMETER | | SPRING FREE LENGTH | |
|--|-------------------------|------------------------|--|-------------|----------------------|-----|--------------------|-----|
| | In. w.c. | mbar | | | In. | mm | In. | mm |
| CS800, CS803, CS804, CS805 and CS806 | 3.5 to 6 ⁽¹⁾ | 9 to 15 ⁽¹⁾ | Red | GE30337X012 | 0.15 | 3.8 | 6.8 | 173 |
| | 5.5 to 8.5 | 13 to 21 | Black | GE30338X012 | 0.17 | 4.3 | 6.8 | 173 |
| | 5.5 to 8.5 | 13 to 21 | Brown [Use with Low Inlet (LIN) Option] | GE49043X012 | 0.16 | 4.1 | 8.3 | 211 |
| | 8 to 12 | 20 to 30 | Purple | GE30339X012 | 0.17 | 4.3 | 7.4 | 188 |
| | 10 to 16 | 25 to 40 | White | GE30340X012 | 0.18 | 4.6 | 7.4 | 188 |
| | 14 to 30 | 35 to 75 | Dark Green | GE30341X012 | 0.20 | 5.2 | 7.5 | 191 |
| CS820, CS823, CS824, CS825 and CS826 | 1 to 2.5 psig | 69 to 170 | Dark Blue | GE30342X012 | 0.25 | 6.4 | 7.5 | 191 |
| | 1.5 to 3.5 psig | 100 to 241 | Orange | GE46922X012 | 0.26 | 6.6 | 7.1 | 180 |
| | 2.5 to 5.5 psig | 170 to 380 | Yellow | GE30343X012 | 0.29 | 7.5 | 6.7 | 170 |
| CS850 and CS854 | 5 to 10 psig | 345 to 690 | Green with White Stripe | GE30344X012 | 0.39 | 9.9 | 7.6 | 192 |

1. In order to achieve the complete spring range listed, in some applications it may be required to re-orient the actuator/spring case to point downward to utilize the weight of the internal components.

Table 5. Approximate Internal Relief Valve Start-to-Discharge Pressure Above Setpoint

| CONTROL SPRING | SETPOINT | | SET RANGE | | INTERNAL RELIEF AND HIGH CAPACITY RELIEF | | | | TOKEN RELIEF | |
|-------------------|----------|------|-----------------|------------|--|-----------|--|----------|--|-----------|
| | | | | | Start-to-Discharge Pressure Range above Setpoint | | Low Start-to-Discharge Option ⁽¹⁾ | | Start-to-Discharge Pressure Range above Setpoint | |
| | In. w.c. | mbar | In. w.c. | mbar | In. w.c. | mbar | In. w.c. | mbar | In. w.c. | mbar |
| GE30337X012 | 4 | 10 | 3.5 to 6 | 9 to 15 | 11 to 18 | 27 to 42 | 7 to 14 | 17 to 35 | 6 to 14 | 15 to 35 |
| GE30338X012 | 7 | 17 | 5.5 to 8.5 | 13 to 21 | 11 to 18 | 27 to 42 | 7 to 14 | 17 to 35 | 6 to 14 | 15 to 35 |
| GE49043X012 (LIN) | 7 | 17 | 5.5 to 8.5 | 13 to 21 | 11 to 18 | 27 to 42 | 7 to 14 | 17 to 35 | 6 to 14 | 15 to 35 |
| GE30339X012 | 11 | 27 | 8 to 12 | 20 to 30 | 11 to 18 | 27 to 42 | 7 to 14 | 17 to 35 | 6 to 14 | 15 to 35 |
| GE30340X012 | 14 | 35 | 10 to 16 | 25 to 40 | 11 to 18 | 27 to 42 | 7 to 14 | 17 to 35 | 6 to 14 | 15 to 35 |
| GE30341X012 | 1 psig | 69 | 14 to 30 | 35 to 75 | 7 in. w.c. to 1 psig | 17 to 69 | ---- | ---- | 8 to 16 | 20 to 40 |
| GE30342X012 | 2 psig | 138 | 1 to 2.5 psig | 70 to 170 | 7 in. w.c. to 2 psig | 17 to 138 | ---- | ---- | 7 in. w.c. to 1 psig | 17 to 69 |
| GE46922X012 | 3 psig | 207 | 1.5 to 3.5 psig | 100 to 240 | 7 in. w.c. to 2 psig | 17 to 138 | ---- | ---- | 0.5 to 1.5 psig | 35 to 100 |
| GE30343X012 | 5 psig | 345 | 2.5 to 5.5 psig | 170 to 380 | 7 in. w.c. to 2.5 psig | 17 to 170 | ---- | ---- | 1 to 2 psig | 69 to 138 |

1. Low start-to-discharge option is only available on the main control spring ranges up to 10 to 16 in. w.c. / 25 to 40 mbar.

Table 6. Secondary Seat™ Outlet Pressures

| CONTROL SPRING | SPRING RANGE | | SETPOINT | | SECONDARY SEAT SHUTOFF PRESSURE ⁽²⁾ (Types CS805 and CS825) | | | | DOWNSTREAM BUILD-UP PRESSURE ⁽¹⁾⁽²⁾⁽³⁾ (Types CS806 and CS826) | | | |
|----------------|-----------------|------------|----------|------|---|------|------------------------------------|------|--|------|------------------------------------|------|
| | | | | | Up to 1/2 in. / 13 mm orifice size | | Up to 7/8 in. / 22 mm orifice size | | Up to 1/2 in. / 13 mm orifice size | | Up to 7/8 in. / 22 mm orifice size | |
| Color | In. w.c. | mbar | In. w.c. | mbar | In. w.c. | mbar | In. w.c. | mbar | In. w.c. | mbar | In. w.c. | mbar |
| Black | 5.5 to 8.5 | 13 to 21 | 7 | 17 | 11 | 27 | 12 | 30 | 25 | 62 | 23 | 57 |
| Brown (LIN) | 5.5 to 8.5 | 13 to 21 | 7 | 17 | 11 | 27 | 12 | 30 | 25 | 62 | 23 | 57 |
| White Stripe | 10 to 16 | 25 to 40 | 14 | 35 | 19 | 47 | 20 | 50 | 36 | 89 | 33 | 81 |
| Dark Green | 14 to 30 | 35 to 75 | 1 psig | 69 | 1.2 psig | 83 | 1.3 psig | 90 | 2.1 psig | 145 | 2 psig | 138 |
| Dark Blue | 1 to 2.5 psig | 69 to 170 | 2 psig | 140 | 2.6 psig | 179 | 2.6 psig | 179 | 3.8 psig | 262 | 3.7 psig | 255 |
| Yellow | 2.5 to 5.5 psig | 170 to 380 | 5 psig | 345 | 6.3 psig | 434 | 6.3 psig | 434 | 7.4 psig | 510 | 8.2 psig | 565 |

1. Downstream pressure buildup with Secondary Seat fixed bleed in operation and regulator relief valve relieving to atmosphere.
 2. Outlet pressure values listed are at maximum operating inlet pressure rating per orifice.
 3. If the outlet pressure rises above setpoint exceeding the pressure rating of the regulator, the internal parts must be inspected and replaced if damaged.

Table 7. Types CS803 and CS823 Regulator and Integral True-Monitor™ Outlet Pressure Ranges without Token Relief

| Type | PRIMARY REGULATOR | | | | | INTEGRAL TRUE-MONITOR | | | | |
|---------------------|-------------------|----------|-----------------|------------|--------------|-----------------------|-----------------|-----------------|------------|--------------|
| | Setpoint | | Spring Range | | Spring Color | Setpoint | | Spring Range | | Spring Color |
| | In. w.c. | mbar | In. w.c. | mbar | | In. w.c. | mbar | In. w.c. | mbar | |
| CS803IN and CS803EN | 4 | 10 | 3.5 to 6 | 9 to 15 | Red | 14 | 35 | 12 to 21 | 30 to 52 | Blue |
| | | | | | | 21 | 52 | 18 to 30 | 45 to 75 | Green |
| | | | | | | 1 psig | 69 | 26 to 40 | 65 to 99 | Orange |
| | 7 | 17 | 5.5 to 8.5 | 13 to 21 | Black | 14 | 35 | 12 to 21 | 30 to 52 | Blue |
| | | | | | | 21 | 52 | 18 to 30 | 45 to 75 | Green |
| | | | | | | 1 psig | 69 | 26 to 40 | 65 to 99 | Orange |
| | 7 | 17 | 5.5 to 8.5 | 13 to 21 | Brown (LIN) | 14 | 35 | 12 to 21 | 30 to 52 | Blue |
| | | | | | | 21 | 52 | 18 to 30 | 45 to 75 | Green |
| | | | | | | 1 psig | 69 | 26 to 40 | 65 to 99 | Orange |
| | 11 | 27 | 8 to 12 | 20 to 30 | Purple | 21 | 52 | 18 to 30 | 45 to 75 | Green |
| | | | | | | 1 psig | 69 | 26 to 40 | 65 to 99 | Orange |
| | | | | | | 1.5 psig | 103 | 1.4 to 2.9 psig | 97 to 200 | Black |
| | 14 | 35 | 10 to 16 | 25 to 40 | White | 21 | 52 | 18 to 30 | 45 to 75 | Green |
| | | | | | | 1 psig | 69 | 26 to 40 | 65 to 99 | Orange |
| 1.5 psig | | | | | | 103 | 1.4 to 2.9 psig | 97 to 200 | Black | |
| 1 psig | 69 | 14 to 30 | 35 to 75 | Dark Green | 1.5 psig | 103 | 1.4 to 2.9 psig | 97 to 200 | Black | |
| | | | | | 2 psig | 138 | 1.4 to 2.9 psig | 97 to 200 | Black | |
| | | | | | 3.5 psig | 241 | 2.6 to 3.7 psig | 179 to 255 | Purple | |
| CS823IN and CS823EN | 2 psig | 138 | 1 to 2.5 psig | 69 to 170 | Dark Blue | 2.5 psig | 172 | 1.4 to 2.9 psig | 97 to 200 | Black |
| | | | | | | 3 psig | 207 | 2.6 to 3.7 psig | 179 to 255 | Purple |
| | | | | | | 5 psig | 345 | 3.6 to 6 psig | 248 to 414 | Dark Blue |
| | 3 psig | 207 | 1.5 to 3.5 psig | 100 to 241 | Orange | 3.5 psig | 241 | 2.6 to 3.7 psig | 179 to 255 | Purple |
| | | | | | | 4 psig | 276 | 3.6 to 6 psig | 248 to 414 | Dark Blue |
| | | | | | | 6 psig | 414 | 5.1 to 7.5 psig | 352 to 517 | Red |
| | 5 psig | 345 | 2.5 to 5.5 psig | 170 to 380 | Yellow | 6 psig | 414 | 5.1 to 7.5 psig | 352 to 517 | Red |
| 7 psig | | | | | | 483 | 5.1 to 7.5 psig | 352 to 517 | Red | |
| | | | | | 7.5 psig | 517 | 5.1 to 7.5 psig | 352 to 517 | Red | |

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Table 8. Primary Regulator and Integral True-Monitor™ Outlet Pressure Ranges with Token Relief

| PRIMARY REGULATOR | | | | | | INTEGRAL TRUE-MONITOR | | | | |
|---|----------|------|-----------------------|------------|--------------|-----------------------|------|-----------------------|------------|--------------|
| Type | Setpoint | | Spring Pressure Range | | Spring Color | Setpoint | | Spring Pressure Range | | Spring Color |
| | In. w.c. | mbar | In. w.c. | mbar | | In. w.c. | mbar | In. w.c. | mbar | |
| CS803IT, CS803IL, CS803ET and CS803EL | 4 | 10 | 3.5 to 6 | 9 to 15 | Red | 21 | 52 | 18 to 30 | 45 to 75 | Green |
| | | | | | | 1 psig | 69 | 26 to 40 | 65 to 99 | Orange |
| | 7 | 17 | 5.5 to 8.5 | 13 to 21 | Black | 21 | 52 | 18 to 30 | 45 to 75 | Green |
| | | | | | | 1 psig | 69 | 26 to 40 | 65 to 99 | Orange |
| | 7 | 17 | 5.5 to 8.5 | 13 to 21 | Brown (LIN) | 21 | 52 | 18 to 30 | 45 to 75 | Green |
| | | | | | | 1 psig | 69 | 26 to 40 | 65 to 99 | Orange |
| | 11 | 27 | 8 to 12 | 20 to 30 | Purple | 1 psig | 69 | 26 to 40 | 65 to 99 | Orange |
| | | | | | | 1.5 psig | 103 | 1.4 to 2.9 psig | 97 to 200 | Black |
| | 14 | 35 | 10 to 16 | 25 to 40 | White | 1 psig | 69 | 26 to 40 | 65 to 99 | Orange |
| | | | | | | 1.5 psig | 103 | 1.4 to 2.9 psig | 97 to 200 | Black |
| | 1 psig | 69 | 14 to 30 | 35 to 75 | Dark Green | 2 psig | 138 | 1.4 to 2.9 psig | 97 to 200 | Black |
| | | | | | | 3 psig | 207 | 2.6 to 3.7 psig | 179 to 255 | Purple |
| CS823IT, CS823IL, CS823ET and CS823EL | 2 psig | 138 | 1 to 2.5 psig | 69 to 170 | Dark Blue | 3 psig | 207 | 2.6 to 3.7 psig | 179 to 255 | Purple |
| | | | | | | 4 psig | 276 | 3.6 to 6 psig | 248 to 414 | Dark Blue |
| | | | | | | 5 psig | 345 | 3.6 to 6 psig | 248 to 414 | Dark Blue |
| | 3 psig | 207 | 1.5 to 3.5 psig | 100 to 241 | Orange | 6 psig | 414 | 5.1 to 7.5 psig | 352 to 517 | Red |
| | | | | | | 7 psig | 483 | 5.1 to 7.5 psig | 352 to 517 | Red |
| | | | | | | 7.5 psig | 517 | 5.1 to 7.5 psig | 352 to 517 | Red |

Table 9. CS800 Series Disk Color Selection

| PRESSURE REGISTRATION | TYPE | BODY SIZE | | SPRING RANGE ⁽¹⁾ | | BODY MATERIAL | END CONNECTION | DISK COLOR | DISK ASSEMBLY PART NUMBER | REPAIR KIT ⁽²⁾ |
|-----------------------|-----------------|-----------------|-----------------------|-----------------------------|-----------------------|---------------------------|-----------------|-------------|---------------------------|---------------------------|
| | | In. | DN | In. w.c. | mbar | | | | | |
| Internal | CS800 | 1-1/4 and 1-1/2 | 32 and 40 | 3.5 to 30 | 9 to 75 | All Materials | All Connections | Black | GE29773X022 | RCS800XBLK2 |
| | | | | 3.5 to 6 | 9 to 15 | All Materials | All Connections | Green | GE29773X042 | RCS800XGRN2 |
| | | 2 | 50 | 5.5 to 8.5 and 8 to 12 | 13 to 21 and 20 to 30 | Gray Cast Iron | All Connections | Blue | GE29773X032 | RCS800XBLU2 |
| | | | | | | Ductile Iron or WCC Steel | Flanged | Blue | GE29773X032 | RCS800XBLU2 |
| | | | | Threaded | Dark Gray | GE29773X082 | RCS800XGRY2 | | | |
| | | | 10 to 16 and 14 to 30 | 25 to 40 and 35 to 75 | All Materials | All Connections | Green | GE29773X042 | RCS800XGRN2 | |
| | CS820 and CS850 | All Sizes | 1 to 10 psig | 69 to 690 | All Materials | All Connections | Black | GE29773X022 | RCS800XBLK2 | |
| External | All | All Sizes | All | All Materials | All Connections | Black | GE29773X022 | RCS800XBLK2 | | |

1. The 3.5 to 30 in. w.c. / 9 to 75 mbar spring range indicates that all of the springs within this range are applicable.

2. Repair kit includes O-ring (key 19), disk assembly (key 36) and O-ring (key 62).

Table 10. CS803 and CS804 Series Disk Color Selection

| PRESSURE REGISTRATION | TYPE | BODY SIZE | | SPRING RANGE ⁽¹⁾ | | BODY MATERIAL | END CONNECTION | DISK COLOR | DISK ASSEMBLY PART NUMBER | REPAIR KIT ⁽²⁾ | |
|-----------------------|-----------------|-----------|--------------|-----------------------------|---------------|-----------------------|---------------------------|-----------------|---------------------------|---------------------------|-------------|
| | | In. | DN | In. w.c. | mbar | | | | | | |
| Internal | CS803 and CS804 | 1-1/2 | 40 | 3.5 to 30 | 9 to 75 | All Materials | All Connections | Black | GE29773X022 | RCS800XBLK2 | |
| | | 2 | 50 | 3.5 to 6 | | 9 to 15 | All Materials | All Connections | Green | GE29773X042 | RCS800XGRN2 |
| | | | | 5.5 to 8.5 and 8 to 12 | | 13 to 21 and 20 to 30 | Ductile Iron or WCC Steel | Flanged | Blue | GE29773X032 | RCS800XBLU2 |
| | | | | | | | Gray Cast Iron | Threaded | Dark Gray | GE29773X082 | RCS800XGRY2 |
| | | | | 10 to 16 and 14 to 30 | | 25 to 40 and 35 to 75 | All Materials | All Connections | Green | GE29773X042 | RCS800XGRN2 |
| | All Sizes | | 1 to 10 psig | 69 to 690 | All Materials | All Connections | Black | GE29773X022 | RCS800XBLK2 | | |
| External | All | All Sizes | | All | | All Materials | All Connections | Black | GE29773X022 | RCS800XBLK2 | |

1. The 3.5 to 30 in. w.c. / 9 to 75 mbar spring range indicates that all of the springs within this range are applicable.
 2. Repair kit includes O-ring (key 19), disk assembly (key 36) and O-ring (key 62).

Table 11. CS805 and CS806 Series Disk Color Selection

| PRESSURE REGISTRATION | TYPE | BODY SIZE | | SPRING RANGE ⁽¹⁾ | | BODY MATERIAL | END CONNECTION | DISK COLOR | DISK ASSEMBLY PART NUMBER | REPAIR KIT ⁽³⁾ |
|-----------------------|-----------------|-----------|----|-----------------------------|-----------|----------------|-----------------|--------------------------------|---------------------------|---------------------------|
| | | In. | DN | In. w.c. | mbar | | | | | |
| Internal | CS805 and CS806 | 1-1/4 | 32 | 3.5 to 30 | 9 to 75 | Gray Cast Iron | All Connections | Yellow/White Dot | GE29773X062 | RCS800XYEL2 |
| | | 1-1/2 | 40 | | | | | Green/White Dot | GE29773X092 | RCS800XGR22 |
| | | 2 | 50 | | | | | White/White Dot ⁽²⁾ | GE29773X052 | RCS800XWHT2 |
| | CS825 and CS826 | All Sizes | | 1 to 5.5 psig | 69 to 380 | Gray Cast Iron | All Connections | Yellow/White Dot | GE29773X062 | RCS800XYEL2 |
| External | All | All Sizes | | All | | All Materials | All Connections | Black | GE29773X022 | RCS800XBLK2 |

1. The 3.5 to 30 in. w.c. / 9 to 75 mbar spring range indicates that all of the springs within this range are applicable.
 2. White/White Dot disk requires the open end to be directed downstream with the direction of flow.
 3. Repair kit includes O-ring (key 19), disk assembly (key 36) and O-ring (key 62).

Table 12. Regulator and Slam-Shut Overpressure Shutoff (OPSO) Pressure Ranges

| REGULATOR | | | | | SLAM-SHUT DEVICE | | | | |
|-----------|------------------|---------------|-----------------|------------|---------------------------------|------|-----------------------------|------------|------------------------------|
| Type | Factory Setpoint | | Spring Range | | Factory Setpoint ⁽¹⁾ | | Spring Range ⁽²⁾ | | Spring Part Number and Color |
| | In. w.c. | mbar | In. w.c. | mbar | In. w.c. | mbar | In. w.c. | mbar | |
| | | | | | | | | | |
| CS804 | 4 | 10 | 3.5 to 6 | 9 to 15 | 19 | 47 | 12 to 25 | 30 to 60 | GF02168X012 / Brown |
| | 7 | 17 | 5.5 to 8.5 | 14 to 21 | 22 | 55 | | | |
| | 7 (optional) | 17 (optional) | 5.5 to 8.5 | 14 to 21 | 25 | 62 | 16 to 44 | 40 to 110 | GF02169X012 / Red |
| | 11 | 27 | 8 to 12 | 20 to 30 | | | | | |
| | 14 | 35 | 10 to 16 | 25 to 40 | 30 | 75 | 24 to 78 | 60 to 190 | GF02170X012 / Orange |
| | 14 (optional) | 35 (optional) | 10 to 16 | 25 to 40 | 2 psig | 138 | 1.4 to 4.1 psig | 97 to 283 | GF02171X012 / Pink |
| | 1 psig | 69 | 14 to 30 | 35 to 75 | 2 psig | 138 | | | |
| CS824 | 2 psig | 138 | 1 to 2.5 psig | 69 to 170 | 3.5 psig | 241 | 2 to 7.3 psig | 138 to 503 | GF02172X012 / Green |
| | 3 psig | 207 | 1.5 to 3.5 psig | 100 to 241 | 5 psig | 345 | | | |
| | 5 psig | 345 | 2.5 to 5.5 psig | 170 to 380 | 7 psig | 483 | 3.2 to 8.5 psig | 221 to 586 | GF02173X012 / Silver |
| CS854 | 7 psig | 483 | 5 to 10 psig | 345 to 690 | 9 psig | 621 | 5.8 to 13 psig | 400 to 896 | GF04353X012 / Yellow |

1. For units equipped with Token Relief, if Non-Factory Slam-shut OPSO setpoints are specified, they must be higher than the Token Relief Start-to-Discharge values provided in Table 5.
 2. If Non-Factory OPSO setpoints are specified, the allowable OPSO setpoint cannot exceed the maximum of 3 psig / 207 mbar above the regulator setpoint in order to ensure no internal parts damage from overpressure.

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Table 13. Regulator and Slam-Shut Underpressure Shutoff (UPSO) Pressure and Overpressure Shutoff (OPSO) Ranges

| REGULATOR | | | | | SLAM-SHUT DEVICE | | | | | | | | | |
|-----------|------------------|------|-----------------|------------|---------------------------------|------|------------------|------------|------------------------------|---------------------------------|------|--|------------|------------------------------|
| | | | | | Under Pressure Shut-off (UPSO) | | | | | Over Pressure Shut-off (OPSO) | | | | |
| Type | Factory Setpoint | | Spring Range | | Factory Setpoint ⁽¹⁾ | | Spring Range | | Spring Part Number and Color | Factory Setpoint ⁽²⁾ | | Spring Range Over UPSO Setpoint ⁽³⁾ | | Spring Part Number and Color |
| | In. w.c. | mbar | In. w.c. | mbar | In. w.c. | mbar | In. w.c. | mbar | | In. w.c. | mbar | In. w.c. | mbar | |
| CS804 | 7 | 17 | 5.5 to 8.5 | 14 to 21 | 3 | 7 | 2 to 12 | 5 to 30 | T14168T0012 / White | 22 | 55 | 17 to 28 | 42 to 69 | GF02168X012 / Brown |
| | 11 | 27 | 8 to 12 | 20 to 30 | 6 | 15 | | | | | | | | |
| | 14 | 35 | 10 to 16 | 25 to 40 | 9 | 22 | | | | | | | | |
| | 1 psig | 69 | 14 to 30 | 35 to 75 | 0.5 psig | 35 | 0.36 to 2.3 psig | 25 to 160 | T14170T0012 / Silver | 2 psig | 138 | 1.3 to 3.1 psig | 90 to 214 | GF02170X012 / Orange |
| CS824 | 2 psig | 138 | 1 to 2.5 psig | 69 to 170 | 1 psig | 69 | 0.36 to 2.3 psig | 25 to 160 | T14170T0012 / Silver | 3.5 psig | 241 | 1.3 to 3.1 psig | 90 to 214 | GF02170X012 / Orange |
| | 3 psig | 207 | 1.5 to 3.5 psig | 100 to 241 | 1.75 psig | 121 | 1.5 to 7.3 psig | 100 to 500 | FA142869X12 / Orange Stripe | 5 psig | 345 | 2.7 to 5.5 psig | 186 to 379 | GF02171X012 / Pink |
| | 5 psig | 345 | 2.5 to 5.5 psig | 170 to 380 | 3 psig | 207 | | | | 7 psig | 483 | | | |
| CS854 | 7 psig | 483 | 5 to 10 psig | 345 to 690 | 3.5 psig | 241 | 1.5 to 7.3 psig | 100 to 500 | FA142869X12 / Orange Stripe | 9 psig | 621 | 2.7 to 5.5 psig | 186 to 379 | GF02171X012 / Pink |

1. If Non-Factory UPSO setpoints are specified, a minimum differential of 4 in. w.c. / 10 mbar between UPSO setpoint and regulator setpoint must be maintained in order to ensure a secure latch of the Slam-Shut.
2. For units equipped with Token Relief, if Non-Factory Slam-shut OPSO setpoints are specified, they must be higher than the Token Relief Start-to-Discharge values provided in Table 5.
3. If Non-Factory OPSO setpoints are specified, the allowable OPSO setpoint cannot exceed the maximum of 3 psig / 207 mbar above the regulator setpoint in order to ensure no internal parts damage from overpressure.

Principle of Operation and Overpressure Protection

Types CS800, CS820 and CS850 Base Regulator Operation

Refer to Figures 3 and 4. When downstream demand decreases, the pressure under the diaphragm increases. This pressure overcomes the regulator setting (which is set by the regulator control spring). Through the action of the pusher post assembly, lever and valve stem, the valve disk moves closer to the orifice and reduces gas flow. If demand downstream increases, pressure under the diaphragm decreases. Spring force pushes the pusher post assembly downward, the valve disk moves away from the orifice and the gas flow increases downstream as the regulator opens in response to the decreased pressure underneath the diaphragm.

Relief Operation

Internal Relief “R”

Type numbers with the “R” suffix, e.g., Type CS800IR, provide internal relief discharge through the diaphragm assembly (see Figure 3) to minimize overpressure. Any outlet pressure above

the start-to-discharge point of the non-adjustable relief spring (see Table 5) moves the diaphragm off the relief seat, allowing excess pressure to discharge through the vent. If conditions should exist that prevent normal operation of the regulator or internal relief valve, the relief valve stem acts as a secondary travel stop contacting the underside of the closing cap and stopping the upward travel of the relief seat. Since the diaphragm continues to rise as downstream pressure builds, the diaphragm lifts off of the relief seat to provide relief operation. This secondary travel stop for internal relief is not available on token relieving units. Units with internal relief valve have 1 NPT vent size. See Figures 9, 11, 13, 15, 17 and 19 for relief capacity.

High-Capacity Internal Relief “Q”

Type numbers with the “Q” suffix, e.g., Type CS800IQ, provide high capacity relief discharge across the diaphragm assembly to minimize overpressure. Any outlet pressure above the start-to-discharge point of the non-adjustable relief spring (see Table 5) moves the diaphragm off the relief seat, allowing excess pressure to discharge through the vent. If emergency conditions should exist that prevent normal operation of the regulator or internal relief valve, the relief valve stem acts as a secondary travel stop contacting the underside of the closing cap and stopping the upward

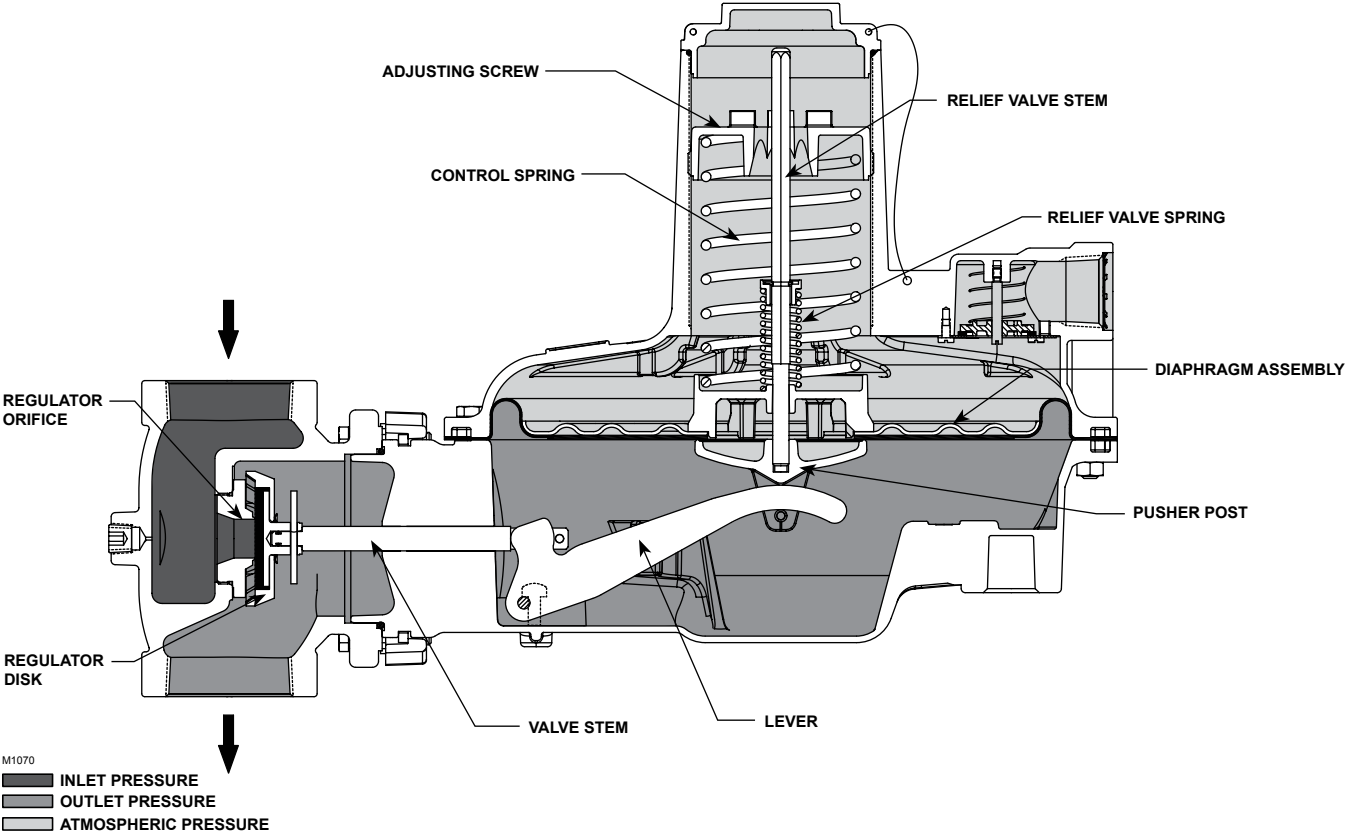


Figure 3. Type CS800IR Internally Registered Regulator with Internal Relief Operational Schematic

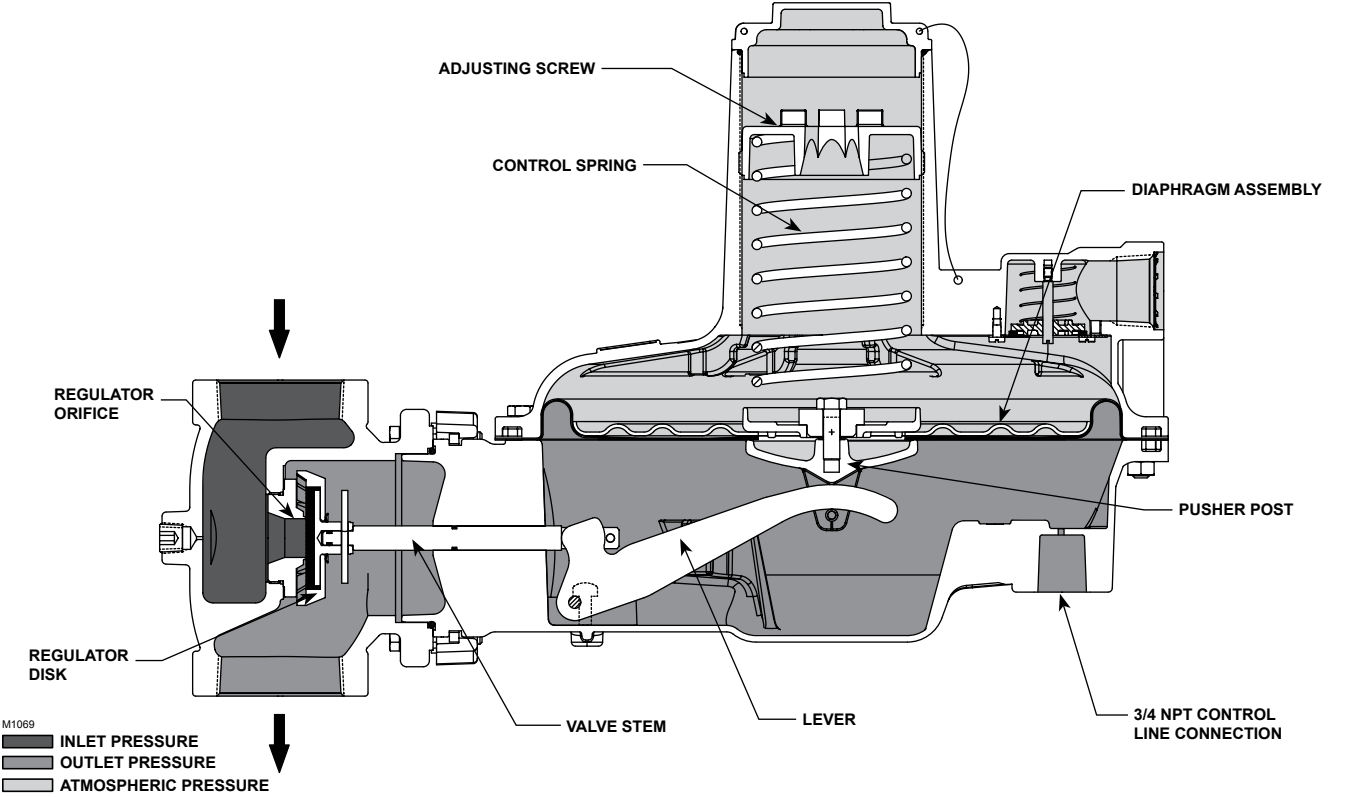
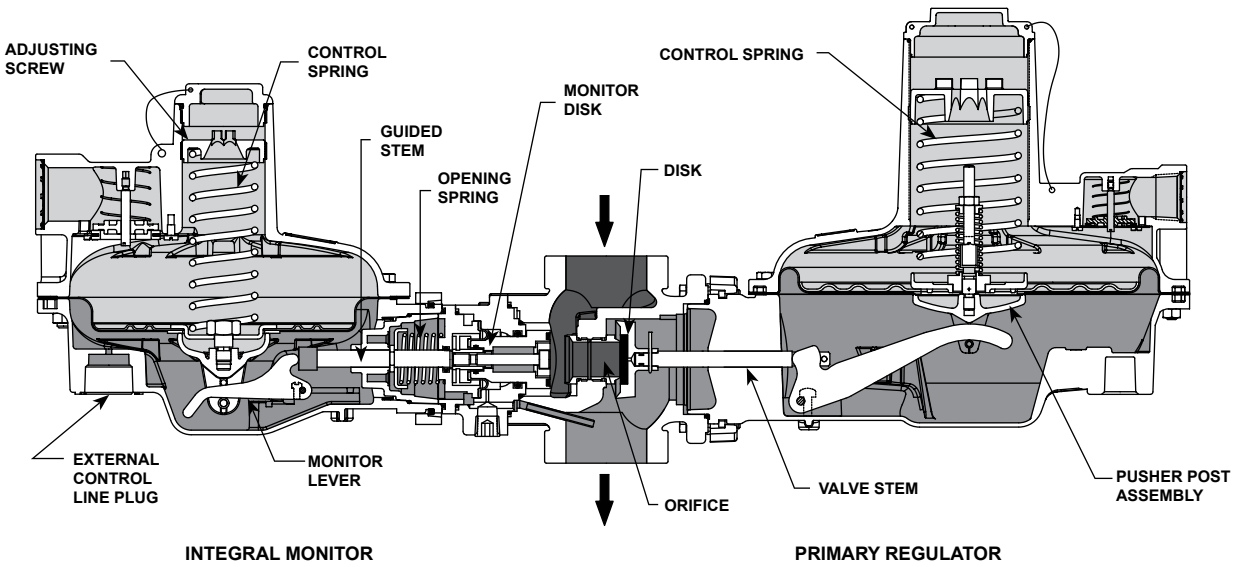


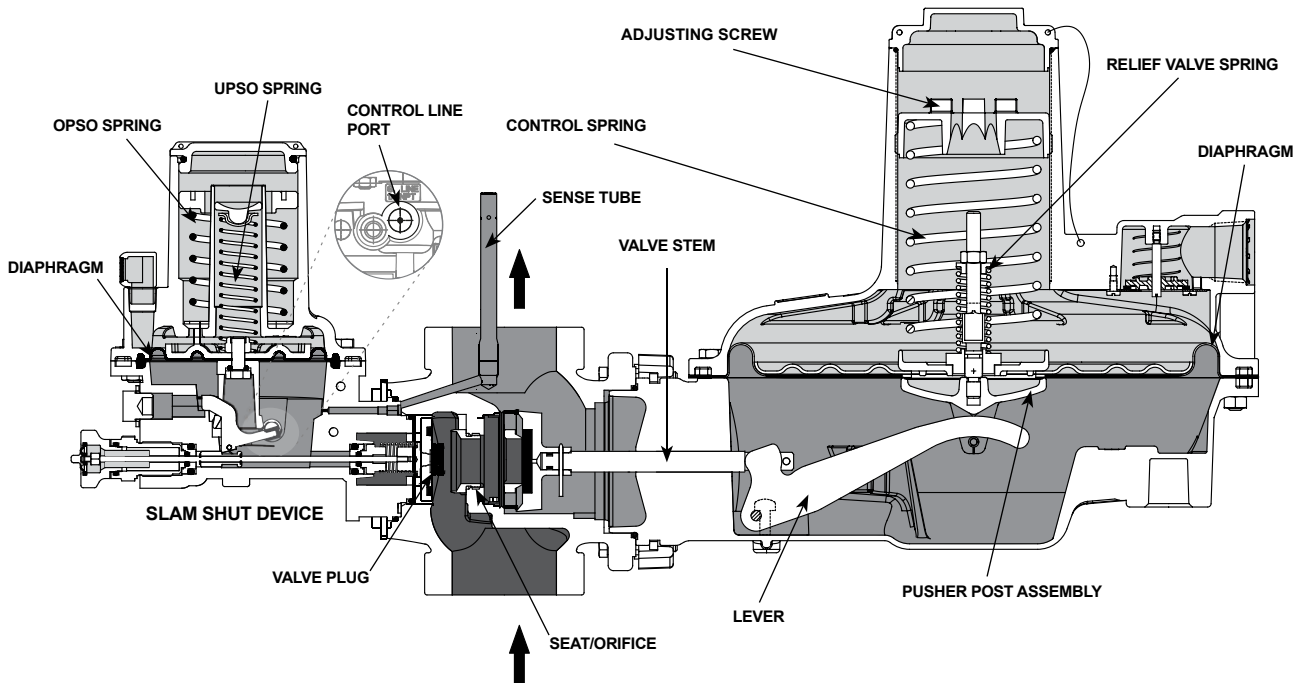
Figure 4. Type CS800EN Externally Registered Regulator Operational Schematic

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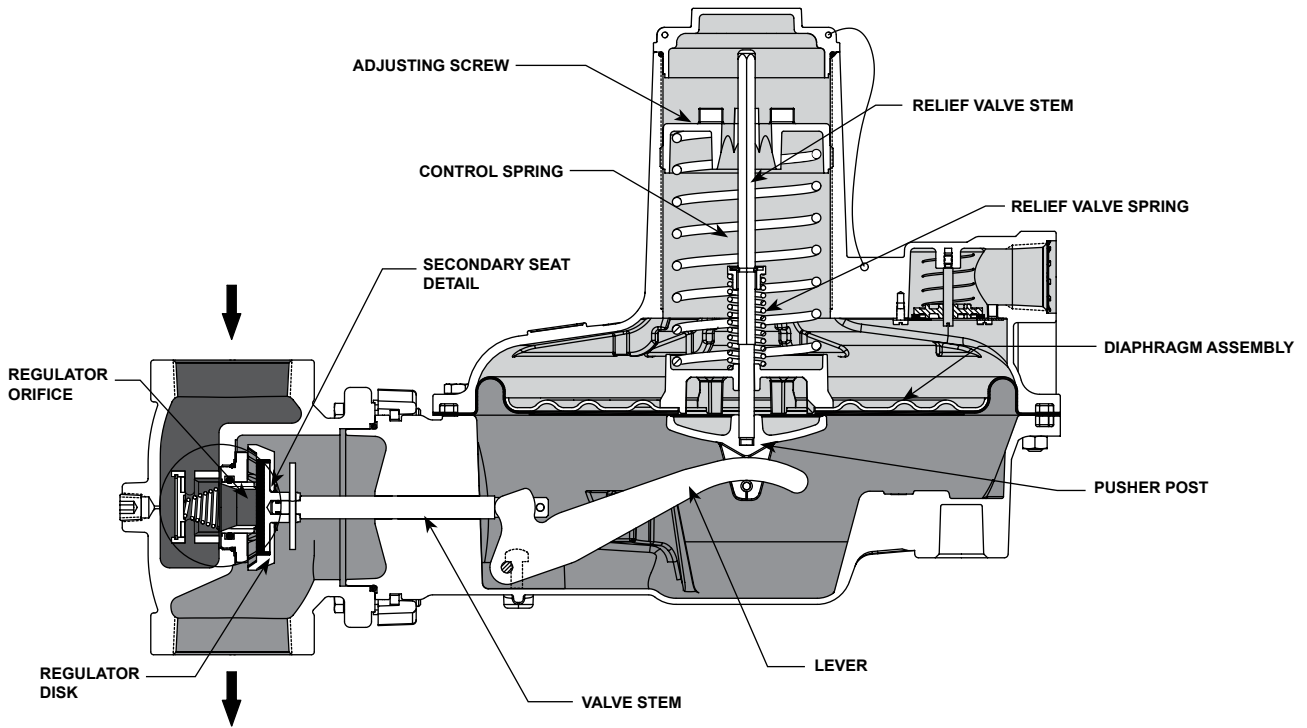
M1074
 ■ INLET PRESSURE
 ■ OUTLET PRESSURE
 ■ ATMOSPHERIC PRESSURE

Figure 5. Type CS803IT Internally Registered Primary Regulator with Internally Registered Integral Monitor Operational Schematic



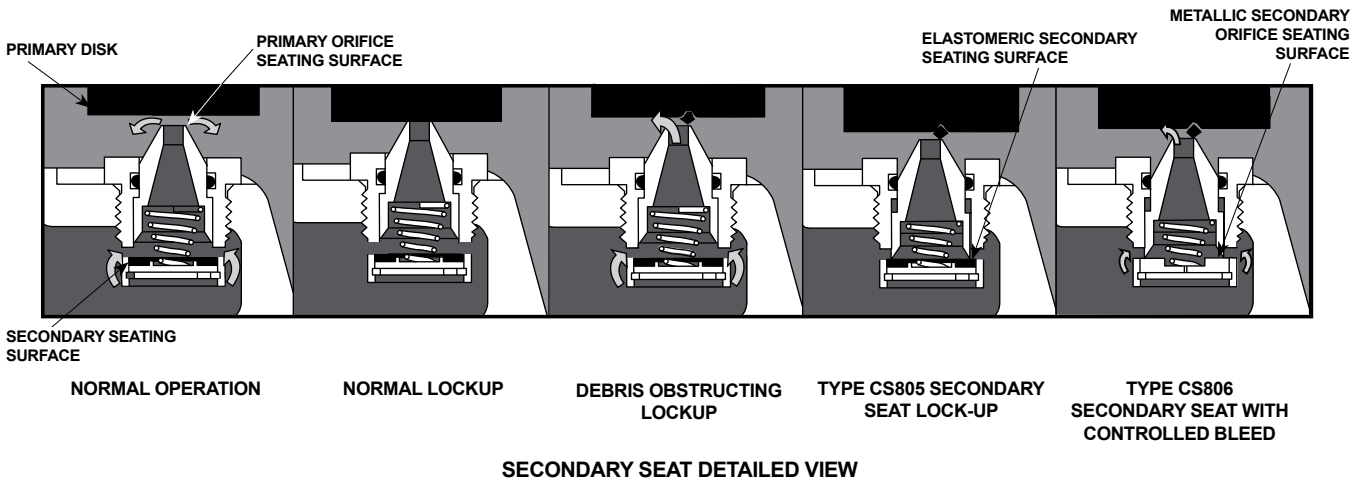
M1075
 ■ INLET PRESSURE
 ■ OUTLET PRESSURE
 ■ ATMOSPHERIC PRESSURE

Figure 6. Type CS804IT Internally Registered Regulator with Slam-Shut Module Operational Schematic



M1072

- INLET PRESSURE
- OUTLET PRESSURE
- ATMOSPHERIC PRESSURE



M1072

- INLET PRESSURE
- OUTLET PRESSURE
- ATMOSPHERIC PRESSURE

Figure 7. CS805 Series with Secondary Seat™ Protection

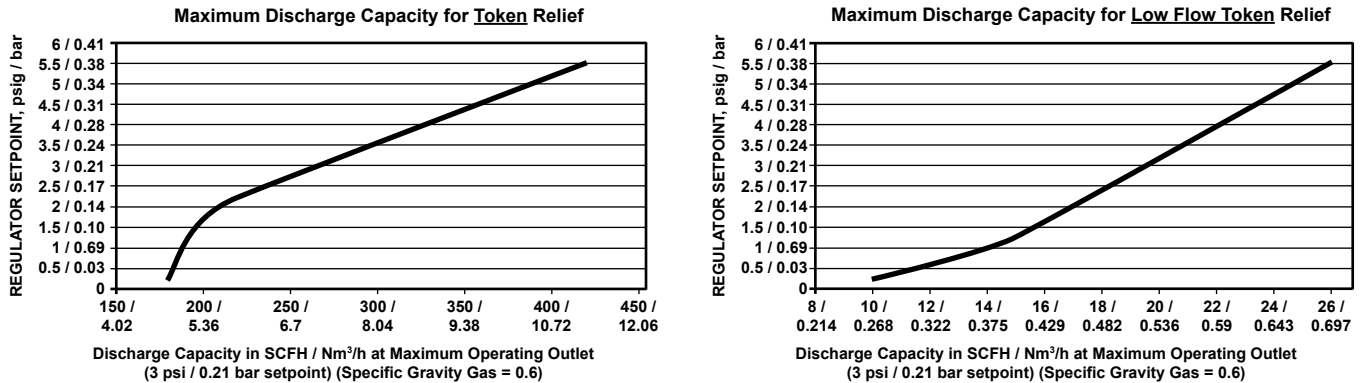


Figure 8. Maximum Discharge Capacity for Token and Low Flow Token Relief

travel of the relief seat. Since the diaphragm continues to rise as downstream pressure builds, the diaphragm lifts off of the relief seat to provide relief operation. The secondary travel stop for internal relief is not available on token relieving units. Units with high capacity internal relief valve have 2-1/2 NPT vent size. See Figures 10, 12, 14, 16, 18 and 20 for relief capacity.

Token Relief “T” and Low Flow Token Relief “L”

Type numbers with the “T” or “L” suffix, e.g., Types CS800IT and CS800IL provide a low capacity/token relief. Token relief provides relief from minor overpressure caused by nicks or dents on the orifice or by thermal expansion of gas in the downstream line. Token relief also provides a token or signal, in the form of odor, that an overpressure situation is occurring. Start-to-discharge values for Token reliefs are found in Table 5. Maximum discharge capacities for Token reliefs are found in Figure 8.

Types CS803 and CS823 Integral True-Monitor™ Operation

Types CS803 and CS823 combine the operation of a conventional two-regulator wide-open monitor set into one body, see Figure 5. The Integral True-Monitor is installed on the inlet side of the body and serves to control downstream pressure in the situation where the Primary regulator can no longer regulate downstream pressure. During normal operation the True-Monitor is in a wide-open state as its setpoint is set higher than the primary regulator. See Tables 7 and 8 for guidance regarding the setpoints of the regulator and associated Integral Monitor sets. If the downstream pressure should rise to the setpoint of the True-Monitor due to loss of pressure control by the primary regulator, the

monitor will assume control and regulate flow to the downstream system. Internal and external downstream pressure registration are available. External pressure registration requires a downstream sensing line. See the Type TM600 Instruction Manual for additional details of operation.

If a Token relief is present, the token relief will relieve a small amount of gas to the atmosphere as an indication that the Integral Monitor is controlling the downstream pressure.

Types CS804, CS824 and CS854 Slam-Shut Operation

The Type VSX8 Slam-shut module on the CS804 Series regulators is a fast acting shutoff device that provides overpressure (OPSO) or overpressure and underpressure (OPSO/UPSO) protection by completely shutting off the flow of gas to the downstream system. See Tables 12 and 13 for guidance regarding the typical setpoint of the regulator and associated OPSO and UPSO sets. The Type VSX8’s actions are independent of the CS804 Series regulator and of variations to the inlet pressure. The Type VSX8 provides the option of internal or external downstream pressure registration. External registration requires a downstream sensing line.

The Type VSX8 shutoff disk is normally in the open (reset) position, see Figure 6. If the downstream pressure below the slam-shut diaphragm increases (or decreases) until it reaches the slam-shut setpoint, this diaphragm moves upward (or downward) to release the trip mechanism which allows the spring force on the stem to push the disk against the seat, shutting off all gas flow. To reset the slam-shut after gas has been shutoff, refer to Type VSX8 Instruction Manual (D103127X012) for additional details.

Note

In order for the Underpressure Shutoff (UPS) of any slam-shut to be triggered, the downstream pipe pressure must drop below the UPS setpoint. In the case of a downstream line break, numerous factors can prevent the downstream pipe pressure from decreasing below the slam-shut UPS setpoint. These factors include the distance of pipe to the break, the diameter of the pipe, size of the break and the number of restrictions, such as valves, elbows and bends, downstream of the regulator and/or slam-shut device. Due to these factors additional protections should be installed to stop flow in the event of a line break.

Types CS805 and CS825 with Secondary Seat™ Protection

Note

Types CS805 and CS825 regulators do not have any means to alert when the Secondary Seat operates at lockup. Therefore, it is recommended that Internal relief or high-capacity relief are also selected or the addition of some other method of overpressure protection be added in the downstream system as discussed in the Overpressure Protection section.

Refer to Figure 7. The Type CS805 provides Secondary Seat Protection. As downstream demand decreases and downstream pressure rises to the regulator pressure lockup value, the regulator will lockup. If, however, damage has occurred to the primary disk, to the primary orifice seating surface or debris has become lodged between the primary disk and primary orifice, the outlet pressure will continue to rise. This additional pressure causes the primary disk to apply additional force to the orifice seating surface, which causes the Secondary seating surface to move toward the Secondary disk or sealing surface. If downstream demand decreases to zero, then the secondary seating surface will contact the sealing surface to provide lockup. See Table 6 for Secondary Seat shutoff above setpoint.

Types CS806 and CS826 Secondary Seat Protection with Bleed

The Types CS806 and CS826 provides small bleed to the downstream system as an indication that the Secondary Seat is providing lock-up. In the event that the primary orifice and disk cannot provide lockup, the secondary seating surface will move into contact with a metal disk. This metal to metal interface, combined with a small drilled bleed hole, will allow a small amount of gas to bleed downstream thereby increasing outlet pressure until the internal relief valve begins to discharge gas to the atmosphere. The odor of this discharged gas provides an indication that the regulator is relying on the Secondary Seat for overpressure protection. See Table 6 for Secondary Seat maximum downstream buildup.

Secondary Seat Protection Limitations

Note

Overpressure conditions can occur in the downstream piping when the Secondary Seat Protection is installed. The Secondary Seat Protection serves only as a backup to the primary seat for lockup. Refer to the sections on Overpressure Protection and Maintenance.

Secondary Seat Protection does not provide additional overpressure protection in the event the secondary seat or disk is damaged by debris or contamination in the pipeline or from conditions that would cause the regulator to go wide-open.

Installation

The CS800 Series regulators may be installed in any position. However, the spring case vent should be pointed downward. If gas escaping through the CS800 Series internal relief valve could constitute a hazard, the spring case vent must be piped to a location where escaping gas will not be hazardous. If the vented gas will be piped to another location, use obstruction-free tubing or piping at least equal in size to the vent; protect the end of the vent pipe from anything that might clog it. Regulators with External Registration require the use of an external control line.

Non-Relieving “N”

Type numbers with the “N” suffix, e.g., Type CS800IN, do not provide internal relief discharge through the diaphragm assembly.

The CS800 Series regulators have outlet pressure ratings that are lower than their inlet pressure ratings. A pressure relieving or pressure limiting device is needed if the application inlet pressure can exceed the outlet pressure rating and the regulator is not equipped with internal relief, high capacity relief, Integral True-Monitor™ Protection or Secondary Seat™ Protection.

Note

Overpressuring any portion of a regulator or associated equipment may cause personal injury, leakage or property damage due to bursting of pressure-containing parts or explosion of accumulated gas. Provide appropriate pressure relieving or pressure limiting devices to ensure that the limits in the specifications section are not exceeded. Regulator operation within ratings does not prevent the possibility of damage from external sources or from debris in the pipeline.

Downstream Control Line Connection

A CS800 Series regulator with an EN, ET or ER in the type number has a blocked throat, an O-ring stem seal and a 3/4 NPT control line tapping in the lower diaphragm casing, see Figure 4. A regulator with a downstream control line is used for monitoring installations or other applications where there is other equipment installed between the regulator and the pressure control point. The O-ring stem seal helps separate body pressure from diaphragm case pressure on monitor installations where leakage cannot be tolerated.

Capacity Information

Tables 14 through 66 provide natural gas regulating capacities at selected inlet pressures, outlet pressure settings and body outlet sizes. Flows are in SCFH (60°F and 14.7 psia) and Nm³/h (0°C and 1.01325 bar) of 0.6 specific gravity natural gas. To determine equivalent capacities for air, propane, butane or

nitrogen, multiply the capacity number in the tables by the following appropriate conversion factor: 0.775 for air, 0.628 for propane, 0.548 for butane or 0.789 for nitrogen. For gases of other specific gravities, multiply the given capacity by 0.775 and divide by the square root of the appropriate specific gravity.

Relief Sizing

For critical flow:

To determine wide-open flow capacities for relief sizing of 0.6 specific gravity natural gas at 60°F at critical pressure drops (absolute outlet pressure equal to approximately one-half or less than one-half of the absolute inlet pressure), use the following formula:

$$Q = P_{1abs}(C_g)(1.29)$$

For subcritical flow:

If pressure drops are lower than critical (absolute outlet pressure greater than approximately one-half the absolute inlet pressure), use the following formula and convert according to the factors in the preceding paragraph if necessary:

$$Q = \sqrt{\frac{520}{GT}} C_g P_1 \text{SIN} \left(\frac{3417}{C_1} \sqrt{\frac{\Delta P}{P_1}} \right) \text{DEG}$$

where:

- C_1 = C_g/C_v (see Table 3)
- C_g = Gas sizing coefficient (see Table 3)
- G = Gas specific gravity (air = 1.0)
- P_1 = Regulator inlet pressure, psia
- ΔP = Pressure drop across regulator, psig
- Q = Gas flow rate, SCFH
- T = Absolute temperature of gas at inlet, °Rankine

Note

Due to boost, the above formulas cannot be used to obtain correct regulating capacities for regulators with internal registration.

The published capacities were obtained using inlet and outlet piping the same size as the regulator body size.

Table 14. Types CS800, CS803 and CS804 Internal Registration Flow Capacities for 4 in. w.c. / 10 mbar Setpoint for 1-1/2 in. / DN 40 Body Size

| SETPOINT | ACCURACY | | SPRING | | | |
|------------|-------------|------------|-------------------|--|---------------------|--|
| | Drop | Boost | Set Range | | Part Number / Color | |
| 4 in. w.c. | -1 in. w.c. | 2 in. w.c. | 3.5 to 6 in. w.c. | | GE30337X012 / Red | |
| 10 mbar | -2.5 mbar | 5 mbar | 9 to 15 mbar | | | |

| CAPACITIES IN SCFH / Nm ³ /h OF 0.6 SPECIFIC GRAVITY NATURAL GAS | | | | | | | | | | | | | | | | | |
|---|------|------------------------|--------------------|-----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|--------|--------------------|---------------------------|--------------------|
| Inlet Pressure | | Orifice Size, In. / mm | | | | | | | | | | | | | | | |
| | | 1/4 / 6.4 | | 3/8 / 9.5 | | 1/2 / 13 | | 5/8 / 16 | | 3/4 / 19 | | 7/8 / 22 | | 1 / 25 | | 1-3/8 / 35 ⁽¹⁾ | |
| psig | bar | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h |
| Body Size: 1-1/2 in. / DN 40 | | | | | | | | | | | | | | | | | |
| 0.4 | 0.03 | | | 300 | 8.1 | 300 | 8.1 | 300 | 8.1 | 1000 | 26.8 | 1400 | 37.6 | 1400 | 37.6 | 1600 | 43.0 |
| 0.51 | 0.04 | | | 300 | 8.1 | 500 | 13.4 | 850 | 22.8 | 1400 | 37.6 | 1590 | 42.7 | 1600 | 43.0 | 1710 | 45.9 |
| 1 | 0.07 | 400 | 10.7 | 800 | 21.5 | 1200 | 32.2 | 1540 | 41.3 | 2100 | 56.4 | 2300 | 61.7 | 2500 | 67.1 | 2700 | 72.5 |
| 2 | 0.14 | 600 | 16.1 | 1300 | 34.9 | 2000 | 53.7 | 2400 | 64.4 | 2800 | 75.2 | 3100 | 83.2 | 3470 | 93.2 | 3470 | 93.2 |
| 3 | 0.21 | 780 | 20.9 | 1600 | 43.0 | 2470 | 66.3 | 2860 | 76.8 | 3360 | 90.2 | 3620 | 97.2 | 4100 | 110 | 4190 | 113 |
| 5 | 0.34 | 1150 | 30.9 | 2170 | 58.3 | 2940 | 78.9 | 3800 | 102 | 4500 | 121 | 4580 | 123 | 5190 | 139 | 5190 | 139 |
| 10 | 0.69 | 1370 | 36.8 | 2900 | 77.9 | 4750 | 128 | 5200 | 140 | 5650 | 152 | 5650 | 152 | 5650 | 152 | 5930 | 159 |
| 15 | 1.0 | 1600 | 43.0 | 3600 | 96.6 | 6200 | 166 | 6500 | 175 | 6500 | 175 | 6500 | 175 | 6000 | 161 | 6710 | 180 |
| 20 | 1.4 | 2070 | 55.6 | 4300 | 115 | 6620 | 178 | 7250 | 195 | 7250 | 195 | 7400 | 199 | 7500 | 201 | | |
| 25 | 1.7 | 2550 | 68.5 | 5000 | 134 | 7050 | 189 | 7250 | 195 | 7250 | 195 | 7500 | 201 | 9000 | 242 | | |
| 30 | 2.1 | 2860 | 76.8 | 5010 | 135 | 7050 | 189 | 7250 | 195 | 7250 | 195 | 7500 | 201 | | | | |
| 40 | 2.8 | 3170 | 85.1 | 5020 | 135 | 7050 | 189 | 7250 | 195 | 7250 | 195 | 7500 | 201 | | | | |
| 50 | 3.4 | 4120 | 111 | 5070 | 136 | 7050 | 189 | 7250 | 195 | 7250 | 195 | 7500 | 201 | | | | |
| 60 | 4.1 | 4750 | 128 | 5100 | 137 | 7050 | 189 | 7250 | 195 | 7250 | 195 | | | | | | |
| 80 | 5.5 | 5700 | 153 | 6200 | 166 | 7170 | 193 | | | | | | | | | | |
| 100 | 6.9 | 6650 | 179 | 7300 | 196 | 7300 | 196 | | | | | | | | | | |
| 125 | 8.6 | 6950 | 187 | 8300 | 223 | | | | | | | | | | | | |

 Black areas show where indicated droop/boost would be exceeded regardless of capacity.
 Blank areas indicate where maximum operating inlet pressure for a given orifice size is exceeded.
 1. Not available on the Type CS803.

Table 15. Types CS800, CS803 and CS804 Internal Registration Flow Capacities for 4 in. w.c. / 10 mbar Setpoint for 2 in. / DN 50 Body Size

| SETPOINT | ACCURACY | | SPRING | | | |
|------------|-------------|------------|-------------------|--|---------------------|--|
| | Drop | Boost | Set Range | | Part Number / Color | |
| 4 in. w.c. | -1 in. w.c. | 2 in. w.c. | 3.5 to 6 in. w.c. | | GE30337X012 / Red | |
| 10 mbar | -2.5 mbar | 5 mbar | 9 to 15 mbar | | | |

| CAPACITIES IN SCFH / Nm ³ /h OF 0.6 SPECIFIC GRAVITY NATURAL GAS | | | | | | | | | | | | | | | | | |
|---|------|------------------------|--------------------|-----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|--------|--------------------|---------------------------|--------------------|
| Inlet Pressure | | Orifice Size, In. / mm | | | | | | | | | | | | | | | |
| | | 1/4 / 6.4 | | 3/8 / 9.5 | | 1/2 / 13 | | 5/8 / 16 | | 3/4 / 19 | | 7/8 / 22 | | 1 / 25 | | 1-3/8 / 35 ⁽¹⁾ | |
| psig | bar | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h |
| Body Size: 2 in. / DN 50 | | | | | | | | | | | | | | | | | |
| 0.4 | 0.03 | | | 300 | 8.1 | 300 | 8.1 | 300 | 8.1 | 1170 | 31.4 | 1400 | 37.6 | 1600 | 43.0 | 1800 | 48.3 |
| 0.51 | 0.04 | | | 300 | 8.1 | 500 | 13.4 | 1000 | 26.8 | 1550 | 41.6 | 1900 | 51.0 | 2070 | 55.6 | 2400 | 64.4 |
| 1 | 0.07 | 400 | 10.7 | 900 | 24.2 | 1300 | 34.9 | 1760 | 47.2 | 1950 | 52.3 | 3000 | 80.5 | 2710 | 72.8 | 3800 | 102 |
| 2 | 0.14 | 600 | 16.1 | 1240 | 33.3 | 2070 | 55.6 | 2620 | 70.3 | 3930 | 106 | 5000 | 134 | 3450 | 92.6 | 5620 | 151 |
| 3 | 0.21 | 730 | 19.6 | 1530 | 41.1 | 2580 | 69.3 | 3540 | 95.0 | 4980 | 134 | 6200 | 166 | 6830 | 183 | 8010 | 215 |
| 5 | 0.34 | 1000 | 26.8 | 2090 | 56.1 | 3700 | 99.3 | 5500 | 148 | 7800 | 209 | 8600 | 231 | 9500 | 255 | 10,620 | 285 |
| 10 | 0.69 | 1320 | 35.4 | 3000 | 80.5 | 5100 | 137 | 7450 | 200 | 10,400 | 279 | 10,900 | 293 | 11,750 | 315 | 12,580 | 338 |
| 15 | 1.0 | 1650 | 44.3 | 3700 | 99.3 | 6500 | 175 | 9400 | 252 | 13,000 | 349 | 13,200 | 354 | 14,000 | 376 | 13,150 | 353 |
| 20 | 1.4 | 2020 | 54.2 | 4450 | 120 | 7850 | 211 | 10,150 | 273 | 13,000 | 349 | 13,200 | 354 | 16,000 | 430 | | |
| 25 | 1.7 | 2400 | 64.4 | 5200 | 140 | 9200 | 247 | 10,900 | 293 | 13,000 | 349 | 13,200 | 354 | 18,000 | 483 | | |
| 30 | 2.1 | 2720 | 73.0 | 5560 | 149 | 9460 | 254 | 10,980 | 295 | 13,400 | 360 | 13,560 | 364 | | | | |
| 40 | 2.8 | 3040 | 81.6 | 5920 | 159 | 9720 | 261 | 11,060 | 297 | 13,800 | 371 | 13,920 | 374 | | | | |
| 50 | 3.4 | 4000 | 107 | 7000 | 188 | 10,500 | 282 | 11,300 | 303 | 15,000 | 403 | 12,510 | 336 | | | | |
| 60 | 4.1 | 4450 | 120 | 9000 | 242 | 12,800 | 344 | 13,800 | 371 | 11,140 | 299 | | | | | | |
| 80 | 5.5 | 4970 | 133 | 9250 | 248 | 12,850 | 345 | | | | | | | | | | |
| 100 | 6.9 | 5500 | 148 | 9500 | 255 | 11,770 | 316 | | | | | | | | | | |
| 125 | 8.6 | 7250 | 195 | 9500 | 255 | | | | | | | | | | | | |

 Black areas show where indicated droop/boost would be exceeded regardless of capacity.
 Gray areas indicate limited capacities due to boost effects.
 Blank areas indicate where maximum operating inlet pressure for a given orifice size is exceeded.
 1. Not available on the Type CS803.

Bulletin 71.1:CS800

Table 16. Types CS800, CS803 and CS804 Internal Registration Flow Capacities for 7 in. w.c. / 17 mbar Setpoint for 1-1/2 in. / DN 40 Body Size

| SETPOINT | ACCURACY | | SPRING | |
|------------|-------------|------------|---------------------|---------------------|
| | Drop | Boost | Set Range | Part Number / Color |
| 7 in. w.c. | -1 in. w.c. | 2 in. w.c. | 5.5 to 8.5 in. w.c. | GE30338X012 / Black |
| 17 mbar | -2.5 mbar | 5 mbar | 13 to 21 mbar | |

| CAPACITIES IN SCFH / Nm ³ /h OF 0.6 SPECIFIC GRAVITY NATURAL GAS | | | | | | | | | | | | | | | | | |
|---|------|------------------------------|--------------------|-----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|--------|--------------------|---------------------------|--------------------|
| Inlet Pressure | | Orifice Size, In. / mm | | | | | | | | | | | | | | | |
| | | 1/4 / 6.4 | | 3/8 / 9.5 | | 1/2 / 13 | | 5/8 / 16 | | 3/4 / 19 | | 7/8 / 22 | | 1 / 25 | | 1-3/8 / 35 ⁽¹⁾ | |
| | | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h |
| psig | bar | Body Size: 1-1/2 in. / DN 40 | | | | | | | | | | | | | | | |
| 0.4 | 0.03 | | | 430 | 11.5 | 740 | 19.9 | 550 | 14.8 | 800 | 21.5 | 800 | 21.5 | 1060 | 28.5 | 1420 | 38.1 |
| 0.51 | 0.04 | | | 520 | 14.0 | 800 | 21.5 | 890 | 23.9 | 1100 | 29.5 | 1150 | 30.9 | 1300 | 34.9 | 1630 | 43.8 |
| 1 | 0.07 | 570 | 15.3 | 770 | 20.7 | 1140 | 30.6 | 1360 | 36.5 | 1510 | 40.5 | 1830 | 49.1 | 1960 | 52.6 | 2640 | 70.9 |
| 2 | 0.14 | 780 | 20.9 | 980 | 26.3 | 1570 | 42.1 | 1790 | 48.1 | 2220 | 59.6 | 2510 | 67.4 | 2790 | 74.9 | 3550 | 95.3 |
| 3 | 0.21 | 990 | 26.6 | 1230 | 33.0 | 1960 | 52.6 | 2380 | 63.9 | 2810 | 75.4 | 3310 | 88.9 | 3680 | 98.8 | 4380 | 118 |
| 5 | 0.34 | 1220 | 32.8 | 1920 | 51.5 | 2940 | 78.9 | 3390 | 91.0 | 4130 | 111 | 4130 | 111 | 4850 | 130 | 5510 | 148 |
| 10 | 0.69 | 1600 | 43.0 | 3160 | 84.8 | 4900 | 132 | 5130 | 138 | 5950 | 160 | 6270 | 168 | 6650 | 179 | 7200 | 193 |
| 15 | 1.0 | 1980 | 53.2 | 4150 | 111 | 6310 | 169 | 6040 | 162 | 7110 | 191 | 7240 | 194 | 7520 | 202 | 7650 | 205 |
| 20 | 1.4 | 2330 | 62.6 | 4910 | 132 | 7300 | 196 | 7130 | 191 | 7770 | 209 | 7770 | 209 | 8010 | 215 | | |
| 25 | 1.7 | 2620 | 70.3 | 5680 | 153 | 7550 | 203 | 7550 | 203 | 8220 | 221 | 8330 | 224 | 8330 | 224 | | |
| 30 | 2.1 | 2990 | 80.3 | 6370 | 171 | 8310 | 223 | 8140 | 219 | 8560 | 230 | 8560 | 230 | | | | |
| 40 | 2.8 | 3650 | 98.0 | 7830 | 210 | 8990 | 241 | 8690 | 233 | 8770 | 235 | 8770 | 235 | | | | |
| 50 | 3.4 | 4320 | 116 | 9010 | 242 | 9010 | 242 | 8880 | 238 | 9000 | 242 | 9210 | 247 | | | | |
| 60 | 4.1 | 5010 | 135 | 9040 | 243 | 9040 | 243 | 9040 | 243 | 9070 | 244 | | | | | | |
| 80 | 5.5 | 6290 | 169 | 9620 | 258 | 9620 | 258 | | | | | | | | | | |
| 100 | 6.9 | 7550 | 202 | 9510 | 255 | 9510 | 255 | | | | | | | | | | |
| 125 | 8.6 | 7820 | 210 | 9600 | 258 | | | | | | | | | | | | |

 Black areas show where indicated droop/boost would be exceeded regardless of capacity.
 Blank areas indicate where maximum operating inlet pressure for a given orifice size is exceeded.
 1. Not available on the Type CS803.

Table 17. Types CS800⁽¹⁾⁽³⁾, CS803⁽²⁾⁽³⁾ and CS804⁽³⁾⁽⁵⁾ Internal Registration Flow Capacities for 7 in. w.c. / 17 mbar Setpoint for 2 in. / DN 50 Body Size, Enhanced Low Inlet (LIN) Option

| SETPOINT | ACCURACY | | SPRING | |
|------------|-------------|------------|---------------------|---------------------|
| | Drop | Boost | Set Range | Part Number / Color |
| 7 in. w.c. | -1 in. w.c. | 2 in. w.c. | 5.5 to 8.5 in. w.c. | GE49043X012 / Brown |
| 17 mbar | -2.5 mbar | 5 mbar | 13 to 21 mbar | |

| CAPACITIES IN SCFH / Nm ³ /h OF 0.6 SPECIFIC GRAVITY NATURAL GAS | | | | | | | | | | | | | | | | | |
|---|------|--------------------------|--------------------|-----------|--------------------|----------|--------------------|----------|--------------------|-------------------------|--------------------|----------|--------------------|-----------------------|--------------------|------------------------------|--------------------|
| Inlet Pressure | | Orifice Size, In. / mm | | | | | | | | | | | | | | | |
| | | 1/4 / 6.4 | | 3/8 / 9.5 | | 1/2 / 13 | | 5/8 / 16 | | 3/4 / 19 ⁽¹⁾ | | 7/8 / 22 | | 1 / 25 ⁽²⁾ | | 1-3/8 / 35 ⁽⁴⁾⁽⁵⁾ | |
| | | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h |
| psig | bar | Body Size: 2 in. / DN 50 | | | | | | | | | | | | | | | |
| 0.4 | 0.03 | | | 460 | 12.3 | 750 | 20.1 | 910 | 24.4 | 1210 | 32.5 | 1470 | 39.5 | 1590 | 42.7 | 2390 | 64.2 |
| 0.51 | 0.04 | | | 600 | 16.1 | 820 | 22.0 | 1120 | 30.1 | 1580 | 42.4 | 1690 | 45.4 | 1720 | 46.2 | 2910 | 78.1 |
| 1 | 0.07 | 570 | 15.3 | 820 | 22.0 | 1330 | 35.7 | 1670 | 44.8 | 2190 | 58.8 | 2690 | 72.2 | 3330 | 89.4 | 4300 | 115 |
| 2 | 0.14 | 810 | 21.7 | 1080 | 29.0 | 2040 | 54.8 | 2750 | 73.8 | 3950 | 106 | 4610 | 124 | 4990 | 134 | 6250 | 168 |
| 3 | 0.21 | 1040 | 27.9 | 1450 | 38.9 | 2830 | 76.0 | 3730 | 100 | 5140 | 138 | 5920 | 159 | 6590 | 177 | 6970 | 187 |
| 5 | 0.34 | 1260 | 33.8 | 2050 | 55.0 | 3870 | 104 | 4990 | 134 | 7730 | 208 | 9080 | 244 | 11,020 | 296 | 10,380 | 279 |
| 10 | 0.69 | 1610 | 43.2 | 3070 | 82.4 | 6130 | 165 | 9360 | 251 | 12,330 | 331 | 14,570 | 391 | 16,360 | 439 | 13,210 | 355 |
| 15 | 1.0 | 1980 | 53.2 | 4050 | 109 | 7810 | 210 | 11,780 | 316 | 16,180 | 434 | 19,680 | 528 | 21,270 | 571 | 16,160 | 434 |
| 20 | 1.4 | 2160 | 58.0 | 4920 | 132 | 9210 | 247 | 13,860 | 372 | 18,920 | 508 | 22,030 | 591 | 22,030 | 591 | | |
| 25 | 1.7 | 2490 | 66.8 | 5720 | 154 | 10,520 | 282 | 16,160 | 434 | 22,030 ⁽³⁾ | 591 ⁽³⁾ | 22,030 | 591 | 22,030 | 591 | | |

- Black areas show where indicated droop/boost would be exceeded regardless of capacity.
- Blank areas indicate where maximum operating inlet pressure for a given orifice size is exceeded.
- 1. Type CS800 with Ductile Iron or Steel body exhibits a 20% reduction in capacity for indicated orifice size. Multiply listed values by a factor of 0.8.
- 2. Type CS800 with Ductile Iron or Steel Bodies and Type CS803 exhibit a 20% reduction in capacity for indicated orifice size. Multiply listed values by a factor of 0.8.
- 3. Due to boost, the Type CS800 with Ductile Iron or Steel bodies, the Types CS803 and CS804 exhibit a 40% reduction in capacity for indicated condition. Multiply listed values by a factor of 0.6.
- 4. Not available on the Type CS803.
- 5. Type CS804 exhibits a 20% reduction in capacity for indicated orifice size. Multiply listed values by a factor of 0.8.

Table 18. Types CS800⁽¹⁾, CS803⁽²⁾ and CS804 Internal Registration Flow Capacities for 7 in. w.c. / 17 mbar Setpoint for 2 in. / DN 50 Body Size

| SETPOINT | ACCURACY | | SPRING | |
|------------|-------------|------------|---------------------|---------------------|
| | Drop | Boost | Set Range | Part Number / Color |
| 7 in. w.c. | -1 in. w.c. | 2 in. w.c. | 5.5 to 8.5 in. w.c. | GE30338X012 / Black |
| 17 mbar | -2.5 mbar | 5 mbar | 13 to 21 mbar | |

| CAPACITIES IN SCFH / Nm ³ /h OF 0.6 SPECIFIC GRAVITY NATURAL GAS | | | | | | | | | | | | | | | | | |
|---|------|--------------------------|--------------------|-----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|--------------------------|--------------------|---------------------------|--------------------|
| Inlet Pressure | | Orifice Size, In. / mm | | | | | | | | | | | | | | | |
| | | 1/4 / 6.4 | | 3/8 / 9.5 | | 1/2 / 13 | | 5/8 / 16 | | 3/4 / 19 | | 7/8 / 22 | | 1 / 25 ⁽¹⁾⁽²⁾ | | 1-3/8 / 35 ⁽³⁾ | |
| | | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h |
| psig | bar | Body Size: 2 in. / DN 50 | | | | | | | | | | | | | | | |
| 5 | 0.34 | 1120 | 30.1 | 1120 | 30.1 | 2600 | 69.8 | 3670 | 98.5 | 4630 | 124 | 8130 | 218 | 9590 | 257 | 5510 | 148 |
| 10 | 0.69 | 1480 | 39.7 | 2520 | 67.7 | 4840 | 130 | 9100 | 244 | 12,450 | 334 | 13,250 | 356 | 16,280 | 437 | 7200 | 193 |
| 15 | 1.0 | 1870 | 50.2 | 3130 | 84.0 | 7760 | 208 | 12,000 | 322 | 16,170 | 434 | 16,630 | 446 | 20,380 | 547 | 7650 | 205 |
| 20 | 1.4 | 2130 | 57.2 | 4230 | 114 | 9200 | 247 | 14,550 | 391 | 19,090 | 513 | 17,370 | 466 | 22,860 | 614 | | |
| 25 | 1.7 | 2500 | 67.1 | 5530 | 149 | 10,510 | 282 | 15,920 | 427 | 20,180 | 542 | 17,370 | 466 | 22,860 | 614 | | |
| 30 | 2.1 | 2850 | 76.5 | 6290 | 169 | 11,850 | 318 | 18,720 | 503 | 23,010 | 618 | 17,380 | 467 | | | | |
| 40 | 2.8 | 3590 | 96.4 | 7850 | 211 | 14,100 | 379 | 22,910 | 615 | 25,910 | 696 | 16,180 | 434 | | | | |
| 50 | 3.4 | 4200 | 113 | 9280 | 249 | 16,740 | 449 | 24,340 | 653 | 27,340 | 734 | 12,050 | 324 | | | | |
| 60 | 4.1 | 4910 | 132 | 10,810 | 290 | 19,390 | 521 | 24,360 | 654 | 19,730 | 530 | | | | | | |
| 80 | 5.5 | 6220 | 167 | 13,740 | 369 | 25,530 | 685 | | | | | | | | | | |
| 100 | 6.9 | 7440 | 200 | 16,630 | 446 | 25,530 | 685 | | | | | | | | | | |
| 125 | 8.6 | 8730 | 234 | 20,320 | 546 | | | | | | | | | | | | |

- Blank areas indicate where maximum operating inlet pressure for a given orifice size is exceeded.
- Gray areas indicate limited capacities due to boost effects.
- 1. Type CS800 with Ductile Iron or Steel Bodies exhibit a 20% reduction in capacity for indicated orifice size. Multiply listed values by a factor of 0.8.
- 2. Types CS803 and CS804 exhibit a 30% reduction in capacity for indicated orifice size. Multiply listed values by a factor of 0.7.
- 3. Not available on the Type CS803.

Bulletin 71.1:CS800

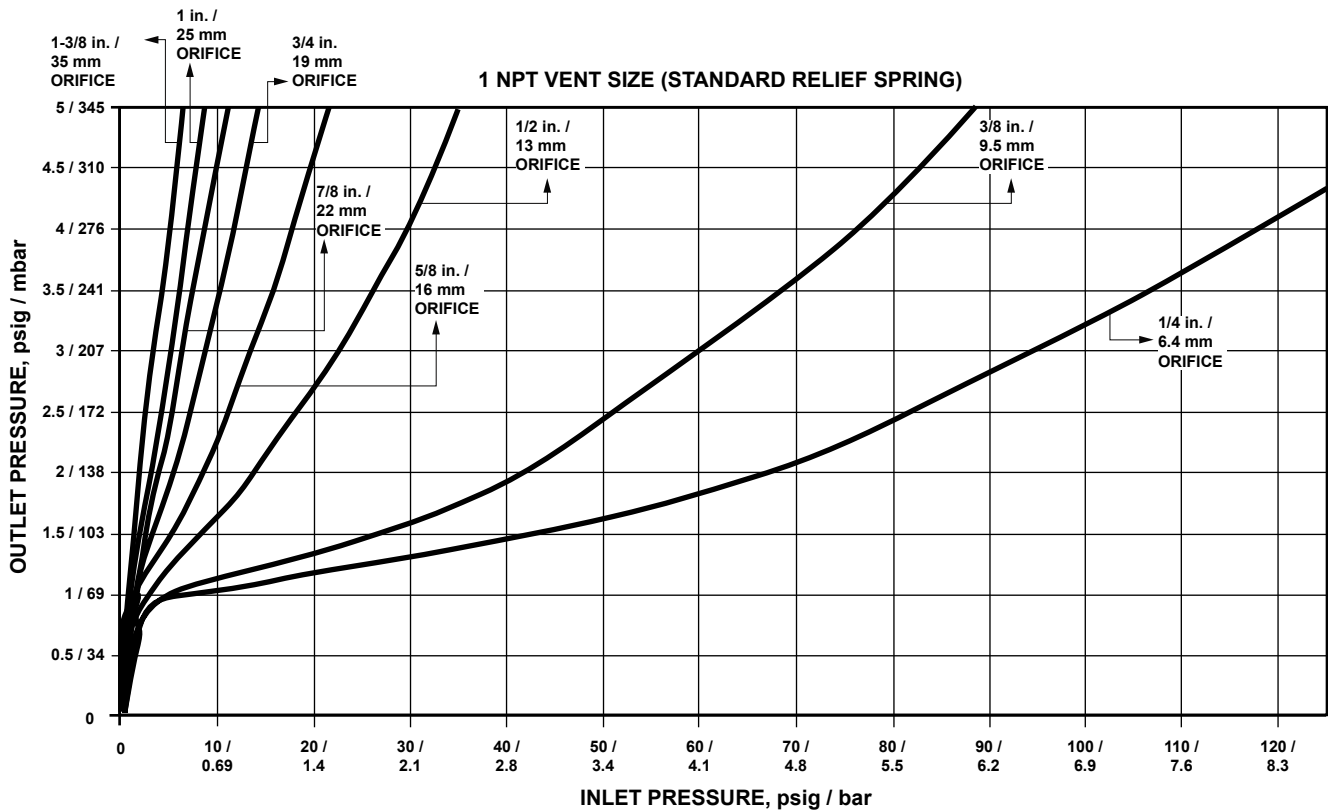


Figure 9. Type CS800IR Relief Curves (Blocked Open per Orifice Size) at 7 in. w.c. / 17 mbar Set Pressure

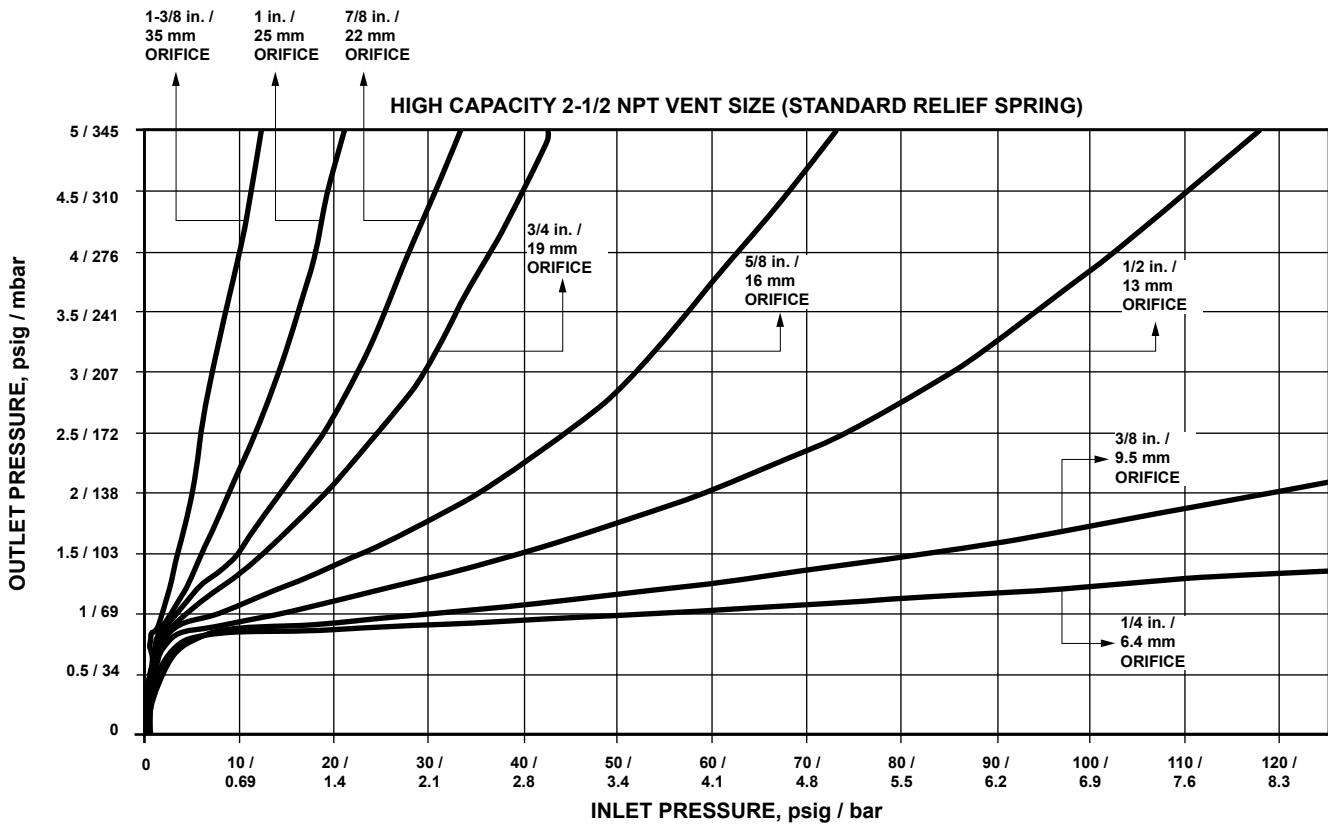


Figure 10. Type CS800IQ High Capacity Relief Curves (Blocked Open per Orifice Size) at 7 in. w.c. / 17 mbar Set Pressure

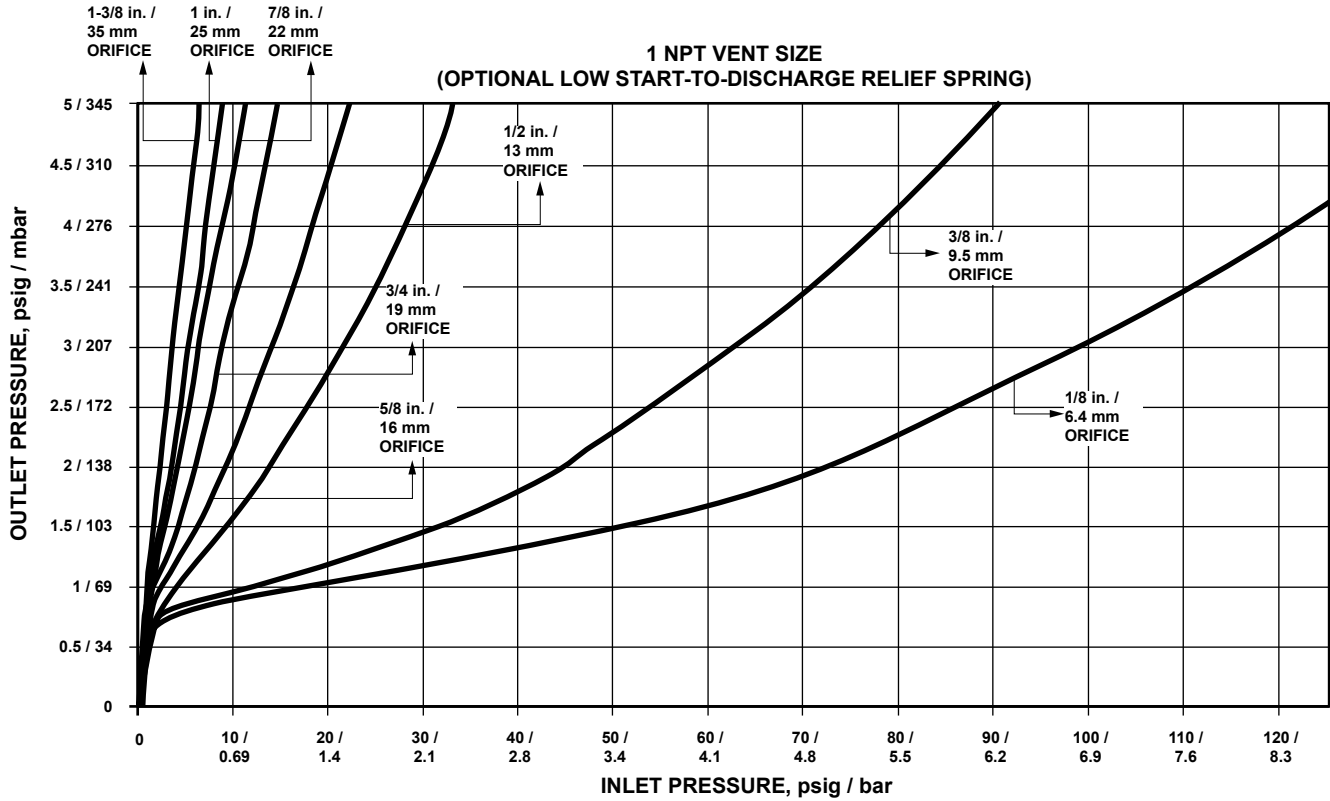


Figure 11. Type CS800IR Relief Curves (Blocked Open per Orifice Size) at 7 in. w.c. / 17 mbar Set Pressure

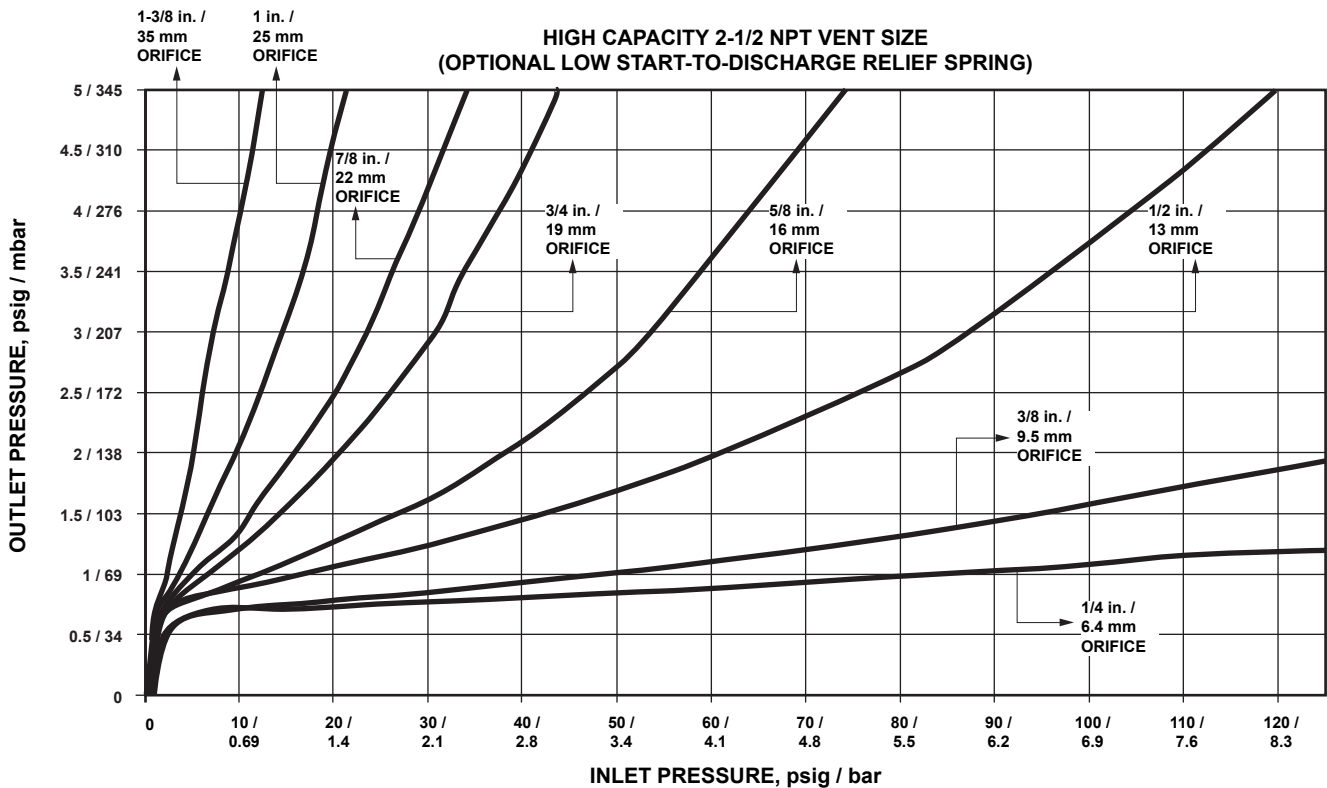


Figure 12. Type CS800IQ High Capacity Relief Curves (Blocked Open per Orifice Size) at 7 in. w.c. / 17 mbar Set Pressure

Bulletin 71.1:CS800

Table 19. Types CS800, CS803 and CS804 Internal Registration Flow Capacities for 14 in. w.c. / 35 mbar Setpoint for 1-1/2 in. / DN 40 Body Size

| SETPOINT | ACCURACY | | SPRING | |
|-------------|-------------|------------|-------------------|---------------------|
| | Droop | Boost | Set Range | Part Number / Color |
| 14 in. w.c. | -2 in. w.c. | 2 in. w.c. | 10 to 16 in. w.c. | GE30340X012 / White |
| 35 mbar | -5 mbar | 5 mbar | 25 to 40 mbar | |

| CAPACITIES IN SCFH / Nm ³ /h OF 0.6 SPECIFIC GRAVITY NATURAL GAS | | | | | | | | | | | | | | | | | |
|---|------|------------------------|--------------------|-----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|--------|--------------------|---------------------------|--------------------|
| Inlet Pressure | | Orifice Size, In. / mm | | | | | | | | | | | | | | | |
| | | 1/4 / 6.4 | | 3/8 / 9.5 | | 1/2 / 13 | | 5/8 / 16 | | 3/4 / 19 | | 7/8 / 22 | | 1 / 25 | | 1-3/8 / 35 ⁽¹⁾ | |
| psig | bar | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h |
| Body Size: 1-1/2 in. / DN 40 | | | | | | | | | | | | | | | | | |
| 1 | 0.07 | 450 | 12.1 | 670 | 18.0 | 1000 | 26.8 | 1100 | 29.5 | 1250 | 33.6 | 1400 | 37.6 | 1500 | 40.3 | 1950 | 52.3 |
| 2 | 0.14 | 550 | 14.8 | 1070 | 28.7 | 1400 | 37.6 | 1600 | 43.0 | 1750 | 47.0 | 2000 | 53.7 | 2300 | 61.7 | 2500 | 67.1 |
| 3 | 0.21 | 700 | 18.8 | 1160 | 31.1 | 1610 | 43.2 | 1900 | 51.0 | 2160 | 58.0 | 2500 | 67.1 | 2960 | 79.5 | 3250 | 87.2 |
| 5 | 0.34 | 1000 | 26.8 | 1200 | 32.2 | 2050 | 55.0 | 2500 | 67.1 | 3000 | 80.5 | 3600 | 96.6 | 4300 | 115 | 4750 | 128 |
| 10 | 0.69 | 1370 | 36.8 | 2120 | 56.9 | 3150 | 84.6 | 3800 | 102 | 4550 | 122 | 5100 | 137 | 5800 | 156 | 6300 | 169 |
| 15 | 1.0 | 1750 | 47.0 | 3050 | 81.9 | 4250 | 114 | 5100 | 137 | 6100 | 164 | 6700 | 180 | 7300 | 196 | 7850 | 211 |
| 20 | 1.4 | 2120 | 56.9 | 3900 | 105 | 4950 | 133 | 6000 | 161 | 7250 | 195 | 7600 | 204 | 8000 | 215 | | |
| 25 | 1.7 | 2500 | 67.1 | 4750 | 128 | 5650 | 152 | 7000 | 188 | 8700 | 234 | 8700 | 234 | 8600 | 231 | | |
| 30 | 2.1 | 2820 | 75.7 | 5420 | 146 | 6260 | 168 | 7500 | 201 | 8960 | 241 | 8960 | 241 | | | | |
| 40 | 2.8 | 3140 | 84.3 | 6090 | 164 | 6870 | 184 | 7900 | 212 | 9220 | 248 | 9220 | 248 | | | | |
| 50 | 3.4 | 4100 | 110 | 8100 | 217 | 8720 | 234 | 9300 | 250 | 9870 | 265 | 9870 | 265 | | | | |
| 60 | 4.1 | 4750 | 128 | 9450 | 254 | 9730 | 261 | 9730 | 261 | 10,240 | 275 | | | | | | |
| 80 | 5.5 | 6100 | 164 | 9920 | 266 | 10,270 | 276 | | | | | | | | | | |
| 100 | 6.9 | 7450 | 200 | 10,400 | 279 | 10,430 | 280 | | | | | | | | | | |
| 125 | 8.6 | 9050 | 243 | 10,400 | 279 | | | | | | | | | | | | |

Blank areas indicate where maximum operating inlet pressure for a given orifice size is exceeded.
1. Not available on the Type CS803.

Table 20. Types CS800, CS803 and CS804 Series Internal Registration Flow Capacities for 14 in. w.c. / 35 mbar Setpoint for 2 in. / DN 50 Body Size

| SETPOINT | ACCURACY | | SPRING | |
|-------------|-------------|------------|-------------------|---------------------|
| | Droop | Boost | Set Range | Part Number / Color |
| 14 in. w.c. | -2 in. w.c. | 2 in. w.c. | 10 to 16 in. w.c. | GE30340X012 / White |
| 35 mbar | -5 mbar | 5 mbar | 25 to 40 mbar | |

| CAPACITIES IN SCFH / Nm ³ /h OF 0.6 SPECIFIC GRAVITY NATURAL GAS | | | | | | | | | | | | | | | | | |
|---|------|------------------------|--------------------|-----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|--------|--------------------|---------------------------|--------------------|
| Inlet Pressure | | Orifice Size, In. / mm | | | | | | | | | | | | | | | |
| | | 1/4 / 6.4 | | 3/8 / 9.5 | | 1/2 / 13 | | 5/8 / 16 | | 3/4 / 19 | | 7/8 / 22 | | 1 / 25 | | 1-3/8 / 35 ⁽¹⁾ | |
| psig | bar | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h |
| Body Size: 2 in. / DN 50 | | | | | | | | | | | | | | | | | |
| 1 | 0.07 | 450 | 12.1 | 630 | 16.9 | 770 | 20.7 | 1300 | 34.9 | 1500 | 40.3 | 1600 | 43.0 | 1700 | 45.6 | 2700 | 72.5 |
| 2 | 0.14 | 600 | 16.1 | 1000 | 26.8 | 1800 | 48.3 | 2240 | 60.1 | 2800 | 75.2 | 3260 | 87.5 | 3800 | 102 | 3800 | 102 |
| 3 | 0.21 | 750 | 20.1 | 1210 | 32.5 | 2200 | 59.1 | 2700 | 72.5 | 3200 | 85.9 | 3700 | 99.3 | 4300 | 115 | 6060 | 163 |
| 5 | 0.34 | 1050 | 28.2 | 1750 | 47.0 | 2800 | 75.2 | 3300 | 88.6 | 4000 | 107 | 4600 | 124 | 5300 | 142 | 10,200 | 274 |
| 10 | 0.69 | 1400 | 37.6 | 2720 | 73.0 | 4250 | 114 | 6500 | 175 | 9200 | 247 | 10,300 | 277 | 11,650 | 313 | 14,550 | 391 |
| 15 | 1.0 | 1750 | 47.0 | 3700 | 99.3 | 5700 | 153 | 9600 | 258 | 14,400 | 387 | 16,100 | 432 | 17,910 | 481 | 17,110 | 459 |
| 20 | 1.4 | 2170 | 58.3 | 4700 | 126 | 7950 | 213 | 11,700 | 314 | 16,200 | 435 | 18,800 | 505 | 20,290 | 545 | | |
| 25 | 1.7 | 2560 | 68.7 | 5700 | 153 | 10,200 | 274 | 12,400 | 333 | 18,000 | 483 | 21,400 | 575 | 22,000 | 591 | | |
| 30 | 2.1 | 2910 | 78.1 | 6440 | 173 | 10,310 | 277 | 12,400 | 333 | 18,220 | 489 | 21,400 | 575 | | | | |
| 40 | 2.8 | 3540 | 95.0 | 7770 | 209 | 10,540 | 283 | 13,020 | 350 | 18,680 | 502 | 21,400 | 575 | | | | |
| 50 | 3.4 | 4170 | 112 | 9190 | 247 | 10,770 | 289 | 14,500 | 389 | 19,140 | 514 | 21,400 | 575 | | | | |
| 60 | 4.1 | 4800 | 129 | 10,900 | 293 | 11,000 | 295 | 14,900 | 400 | 19,600 | 526 | | | | | | |
| 80 | 5.5 | 6100 | 164 | 12,550 | 337 | 12,550 | 337 | | | | | | | | | | |
| 100 | 6.9 | 7400 | 199 | 14,100 | 379 | 14,100 | 379 | | | | | | | | | | |
| 125 | 8.6 | 9100 | 244 | 16,120 | 433 | | | | | | | | | | | | |

Blank areas indicate where maximum operating inlet pressure for a given orifice size is exceeded.
1. Not available on the Type CS803.

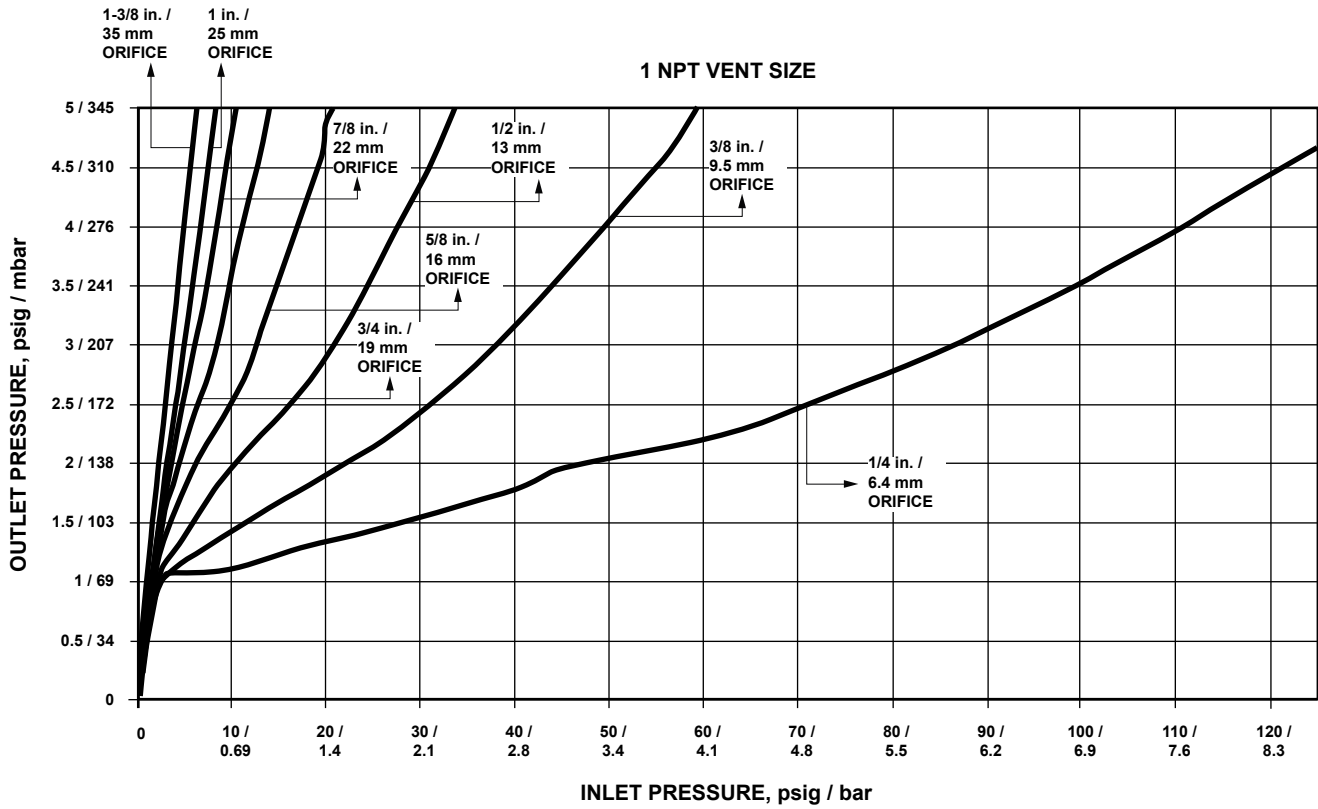


Figure 13. Type CS800IR Relief Curves (Blocked Open per Orifice Size) at 14 in. w.c. / 35 mbar Set Pressure

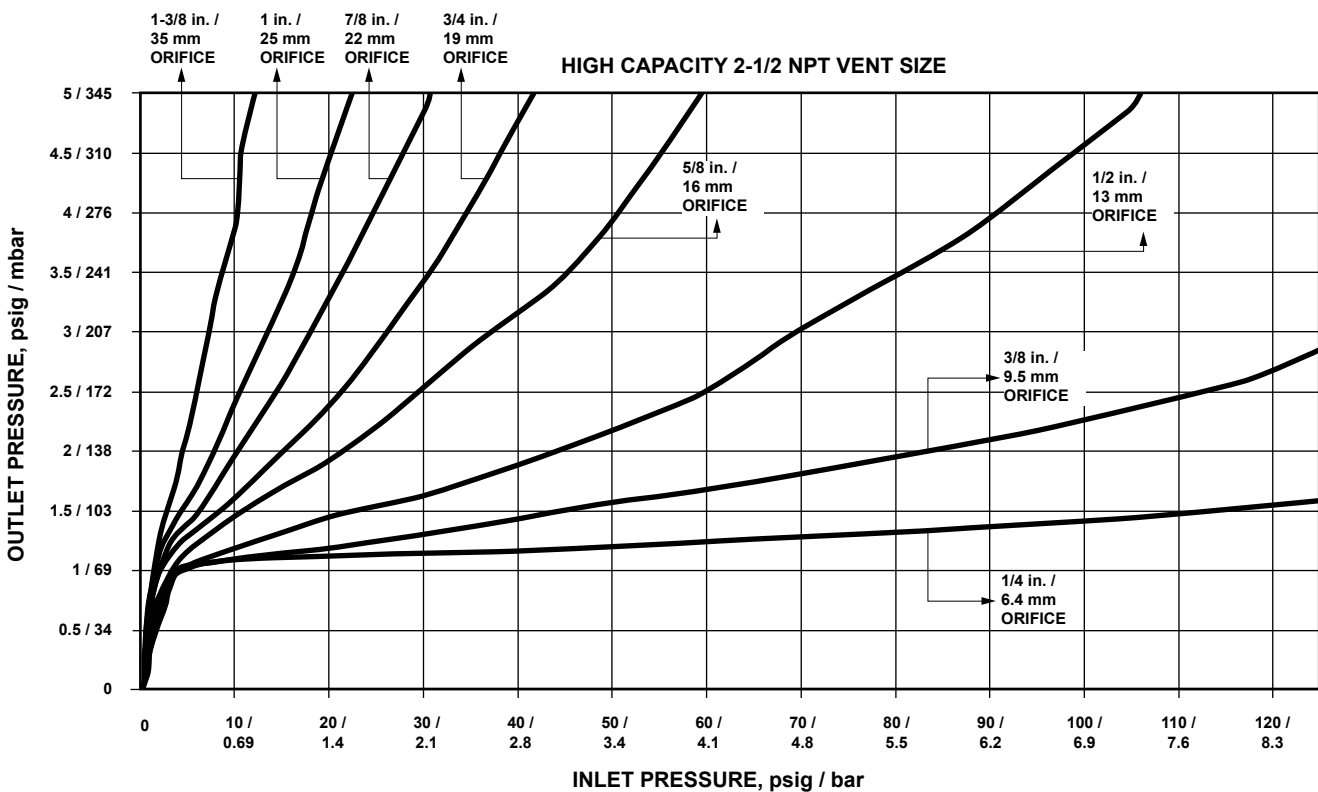


Figure 14. Type CS800IQ High Capacity Relief Curves (Blocked Open per Orifice Size) at 14 in. w.c. / 35 mbar Set Pressure

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Table 21. Types CS800, CS803 and CS804 Internal Registration Flow Capacities for 1 psig / 0.07 bar Setpoint for 1-1/2 in. / DN 40 Body Size at 1% ABS Accuracy

| SETPOINT | ACCURACY: +/- 1% ABS | | SPRING | |
|----------|----------------------|--------------|-------------------|--------------------------|
| | Droop | Boost | Set Range | Part Number / Color |
| 1 psig | -4.3 in. w.c. | 4.3 in. w.c. | 14 to 30 in. w.c. | GE30341X012 / Dark Green |
| 0.07 bar | -11 mbar | 11 mbar | 35 to 75 mbar | |

| CAPACITIES IN SCFH / Nm ³ /h OF 0.6 SPECIFIC GRAVITY NATURAL GAS | | | | | | | | | | | | | | | | | |
|---|------|------------------------------|--------------------|-----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|--------|--------------------|------------------------------|--------------------|
| Inlet Pressure | | Orifice Size, In. / mm | | | | | | | | | | | | | | | |
| | | 1/4 / 6.4 | | 3/8 / 9.5 | | 1/2 / 13 | | 5/8 / 16 | | 3/4 / 19 | | 7/8 / 22 | | 1 / 25 | | 1-3/8 / 35 ⁽¹⁾⁽²⁾ | |
| | | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h |
| psig | bar | Body Size: 1-1/2 in. / DN 40 | | | | | | | | | | | | | | | |
| 2 | 0.14 | 650 | 17.4 | 1050 | 28.2 | 1350 | 36.2 | 1800 | 48.3 | 2450 | 65.8 | 2600 | 69.8 | 2700 | 72.5 | 3000 | 80.5 |
| 3 | 0.21 | 780 | 20.9 | 1400 | 37.6 | 1800 | 48.3 | 2260 | 60.7 | 2900 | 77.9 | 3130 | 84.0 | 3360 | 90.2 | 3730 | 100 |
| 5 | 0.34 | 1050 | 28.2 | 2100 | 56.4 | 2700 | 72.5 | 3200 | 85.9 | 3800 | 102 | 4200 | 113 | 4700 | 126 | 5200 | 140 |
| 10 | 0.69 | 1500 | 40.3 | 2800 | 75.2 | 3700 | 99.3 | 4600 | 124 | 5600 | 150 | 6300 | 169 | 7000 | 188 | 7300 | 196 |
| 15 | 1.0 | 1950 | 52.3 | 3750 | 101 | 4900 | 132 | 5800 | 156 | 6900 | 185 | 7600 | 204 | 8500 | 228 | 8750 | 235 |
| 20 | 1.4 | 2200 | 59.1 | 4600 | 124 | 5800 | 156 | 6900 | 185 | 8150 | 219 | 9200 | 247 | 10,350 | 278 | | |
| 25 | 1.7 | 2500 | 67.1 | 5000 | 134 | 7250 | 195 | 8100 | 217 | 9050 | 243 | 9500 | 255 | 10,850 | 291 | | |
| 30 | 2.1 | 2800 | 75.2 | 6000 | 161 | 8200 | 220 | 8700 | 234 | 9400 | 252 | 9500 | 255 | 11,000 | 295 | | |
| 40 | 2.8 | 3550 | 95.3 | 7350 | 197 | 9100 | 244 | 9300 | 250 | 9500 | 255 | 9500 | 255 | | | | |
| 50 | 3.4 | 4050 | 109 | 8450 | 227 | 10,300 | 276 | 10,300 | 277 | 10,300 | 277 | 10,300 | 277 | | | | |
| 60 | 4.1 | 4800 | 129 | 9050 | 243 | 10,450 | 281 | 10,500 | 282 | 10,550 | 283 | 10,550 | 283 | | | | |
| 80 | 5.5 | 5900 | 158 | 11,000 | 295 | 11,000 | 295 | 11,000 | 295 | 11,000 | 295 | | | | | | |
| 100 | 6.9 | 7400 | 199 | 11,150 | 299 | 11,150 | 299 | | | | | | | | | | |
| 125 | 8.6 | 9000 | 242 | 11,750 | 315 | | | | | | | | | | | | |

Blank areas indicate where maximum operating inlet pressure for a given orifice size is exceeded.
 1. Not available on the Type CS803.
 2. Type CS824 exhibits a 20% reduction in capacity for indicated orifice size. Multiply listed values by a factor of 0.8.

Table 22. Types CS800, CS803 and CS804 Internal Registration Flow Capacities for 1 psig / 0.07 bar Setpoint for 2 in. / DN 50 Body Size at 1% ABS Accuracy

| SETPOINT | ACCURACY: +/- 1% ABS | | SPRING | |
|----------|----------------------|--------------|-------------------|--------------------------|
| | Droop | Boost | Set Range | Part Number / Color |
| 1 psig | -4.3 in. w.c. | 4.3 in. w.c. | 14 to 30 in. w.c. | GE30341X012 / Dark Green |
| 0.07 bar | -11 mbar | 11 mbar | 35 to 75 mbar | |

| CAPACITIES IN SCFH / Nm ³ /h OF 0.6 SPECIFIC GRAVITY NATURAL GAS | | | | | | | | | | | | | | | | | |
|---|------|--------------------------|--------------------|-----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|--------|--------------------|---------------------------|--------------------|
| Inlet Pressure | | Orifice Size, In. / mm | | | | | | | | | | | | | | | |
| | | 1/4 / 6.4 | | 3/8 / 9.5 | | 1/2 / 13 | | 5/8 / 16 | | 3/4 / 19 | | 7/8 / 22 | | 1 / 25 | | 1-3/8 / 35 ⁽¹⁾ | |
| | | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h |
| psig | bar | Body Size: 2 in. / DN 50 | | | | | | | | | | | | | | | |
| 2 | 0.14 | 570 | 39.3 | 970 | 66.9 | 1910 | 132 | 1910 | 132 | 2750 | 190 | 2900 | 200 | 3100 | 214 | 3300 | 228 |
| 3 | 0.21 | 730 | 50.3 | 1460 | 101 | 2250 | 155 | 2660 | 183 | 3200 | 221 | 3630 | 250 | 4150 | 286 | 5200 | 359 |
| 5 | 0.34 | 1050 | 72.4 | 2200 | 152 | 2750 | 190 | 3400 | 234 | 4100 | 283 | 5100 | 352 | 6250 | 431 | 9000 | 621 |
| 10 | 0.69 | 1500 | 103 | 2500 | 172 | 4050 | 279 | 6100 | 421 | 8500 | 586 | 10,700 | 738 | 13,250 | 914 | 13,700 | 945 |
| 15 | 1.0 | 1900 | 131 | 3450 | 238 | 5800 | 400 | 9000 | 621 | 13,000 | 896 | 14,400 | 993 | 16,000 | 1103 | 16,300 | 1124 |
| 20 | 1.4 | 2240 | 154 | 4800 | 331 | 7700 | 531 | 10,200 | 703 | 13,300 | 917 | 15,700 | 1083 | 18,500 | 1276 | | |
| 25 | 1.7 | 2500 | 172 | 5600 | 386 | 10,400 | 717 | 13,100 | 903 | 16,500 | 1138 | 17,700 | 1220 | 19,000 | 1310 | | |
| 30 | 2.1 | 2900 | 200 | 6350 | 438 | 11,950 | 823 | 15,000 | 1034 | 18,800 | 1296 | 19,000 | 1310 | 19,300 | 1331 | | |
| 40 | 2.8 | 3650 | 252 | 7850 | 541 | 14,550 | 1003 | 16,700 | 1151 | 19,300 | 1331 | 19,500 | 1344 | | | | |
| 50 | 3.4 | 4250 | 293 | 9300 | 641 | 16,700 | 1151 | 18,400 | 1269 | 20,500 | 1413 | 20,700 | 1427 | | | | |
| 60 | 4.1 | 4900 | 338 | 10,950 | 755 | 19,400 | 1338 | 20,000 | 1379 | 20,800 | 1434 | 21,000 | 1448 | | | | |
| 80 | 5.5 | 6200 | 428 | 13,790 | 951 | 20,400 | 1407 | 20,600 | 1420 | 20,800 | 1434 | | | | | | |
| 100 | 6.9 | 7400 | 510 | 16,510 | 1138 | 21,100 | 1455 | | | | | | | | | | |
| 125 | 8.6 | 9350 | 645 | 20,200 | 1393 | | | | | | | | | | | | |

Blank areas indicate where maximum operating inlet pressure for a given orifice size is exceeded.
 1. Not available on the Type CS803.

Table 23. Types CS800, CS803 and CS804 Internal Registration Flow Capacities for 1 psig / 0.07 bar Setpoint for 1-1/2 in. / DN 40 Body Size at 2% ABS Accuracy

| SETPOINT | ACCURACY: +/- 2% ABS | | SPRING | |
|----------|----------------------|--------------|-------------------|--------------------------|
| | Droop | Boost | Set Range | Part Number / Color |
| 1 psig | -8.7 in. w.c. | 8.7 in. w.c. | 14 to 30 in. w.c. | GE30341X012 / Dark Green |
| 0.07 bar | -22 mbar | 22 mbar | 35 to 75 mbar | |

| CAPACITIES IN SCFH / Nm ³ /h OF 0.6 SPECIFIC GRAVITY NATURAL GAS | | | | | | | | | | | | | | | | | |
|---|------|------------------------------|--------------------|-----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|--------|--------------------|------------------------------|--------------------|
| Inlet Pressure | | Orifice Size, In. / mm | | | | | | | | | | | | | | | |
| | | 1/4 / 6.4 | | 3/8 / 9.5 | | 1/2 / 13 | | 5/8 / 16 | | 3/4 / 19 | | 7/8 / 22 | | 1 / 25 | | 1-3/8 / 35 ⁽¹⁾⁽²⁾ | |
| | | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h |
| psig | bar | Body Size: 1-1/2 in. / DN 40 | | | | | | | | | | | | | | | |
| 2 | 0.14 | 740 | 19.9 | 1450 | 38.9 | 2100 | 56.4 | 2800 | 75.2 | 3700 | 99.3 | 4100 | 110 | 4650 | 125 | 5350 | 144 |
| 3 | 0.21 | 910 | 24.4 | 1800 | 48.3 | 2580 | 69.3 | 3400 | 91.3 | 4480 | 120 | 5100 | 137 | 5730 | 154 | 6200 | 166 |
| 5 | 0.34 | 1180 | 31.7 | 2320 | 62.3 | 3550 | 95.3 | 4700 | 126 | 6050 | 162 | 6900 | 185 | 7900 | 212 | 7900 | 212 |
| 10 | 0.69 | 1630 | 43.8 | 3380 | 90.7 | 5100 | 137 | 6700 | 180 | 8550 | 230 | 9000 | 242 | 9550 | 256 | 10,100 | 271 |
| 15 | 1.0 | 1960 | 52.6 | 4170 | 112 | 6700 | 180 | 7900 | 212 | 9400 | 252 | 10,300 | 277 | 11,250 | 302 | 11,400 | 306 |
| 20 | 1.4 | 2250 | 60.4 | 4740 | 127 | 8100 | 217 | 9200 | 247 | 10,500 | 282 | 11,300 | 303 | 12,200 | 328 | | |
| 25 | 1.7 | 2660 | 71.4 | 5710 | 153 | 10,100 | 271 | 10,800 | 290 | 11,550 | 310 | 12,000 | 322 | 12,600 | 338 | | |
| 30 | 2.1 | 2960 | 79.5 | 6440 | 173 | 10,550 | 283 | 11,400 | 306 | 12,350 | 332 | 12,700 | 341 | 13,100 | 352 | | |
| 40 | 2.8 | 3650 | 98.0 | 7850 | 211 | 10,550 | 283 | 11,400 | 306 | 12,350 | 332 | 12,350 | 332 | | | | |
| 50 | 3.4 | 4350 | 117 | 9250 | 248 | 12,000 | 322 | 12,500 | 336 | 13,000 | 349 | 13,000 | 349 | | | | |
| 60 | 4.1 | 5000 | 134 | 10,900 | 293 | 12,600 | 338 | 12,800 | 344 | 13,000 | 349 | 13,000 | 349 | | | | |
| 80 | 5.5 | 6340 | 170 | 12,550 | 337 | 13,000 | 349 | 13,000 | 349 | 13,000 | 349 | | | | | | |
| 100 | 6.9 | 7740 | 208 | 12,900 | 346 | 13,450 | 361 | | | | | | | | | | |
| 125 | 8.6 | 9380 | 252 | 13,450 | 361 | | | | | | | | | | | | |

Blank areas indicate where maximum operating inlet pressure for a given orifice size is exceeded.

1. Not available on the Type CS803.

2. Type CS824 exhibits a 20% reduction in capacity for indicated orifice size. Multiply listed values by a factor of 0.8.

Table 24. Types CS800, CS803 and CS804 Internal Registration Flow Capacities for 1 psig / 0.07 bar Setpoint for 2 in. / DN 50 Body Size at 2% ABS Accuracy

| SETPOINT | ACCURACY: +/- 2% ABS | | SPRING | |
|----------|----------------------|--------------|-------------------|--------------------------|
| | Droop | Boost | Set Range | Part Number / Color |
| 1 psig | -8.7 in. w.c. | 8.7 in. w.c. | 14 to 30 in. w.c. | GE30341X012 / Dark Green |
| 0.07 bar | -22 mbar | 22 mbar | 35 to 75 mbar | |

| CAPACITIES IN SCFH / Nm ³ /h OF 0.6 SPECIFIC GRAVITY NATURAL GAS | | | | | | | | | | | | | | | | | |
|---|------|--------------------------|--------------------|-----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|--------|--------------------|---------------------------|--------------------|
| Inlet Pressure | | Orifice Size, In. / mm | | | | | | | | | | | | | | | |
| | | 1/4 / 6.4 | | 3/8 / 9.5 | | 1/2 / 13 | | 5/8 / 16 | | 3/4 / 19 | | 7/8 / 22 | | 1 / 25 | | 1-3/8 / 35 ⁽¹⁾ | |
| | | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h |
| psig | bar | Body Size: 2 in. / DN 50 | | | | | | | | | | | | | | | |
| 2 | 0.14 | 700 | 18.8 | 1110 | 29.8 | 2340 | 62.8 | 3100 | 83.2 | 4100 | 110 | 4800 | 129 | 5470 | 147 | 7900 | 212 |
| 3 | 0.21 | 850 | 22.8 | 1710 | 45.9 | 2960 | 79.5 | 4060 | 109 | 5180 | 139 | 6430 | 173 | 7630 | 205 | 10,030 | 269 |
| 5 | 0.34 | 1150 | 30.9 | 2250 | 60.4 | 4000 | 107 | 5800 | 156 | 7920 | 213 | 9700 | 260 | 11,620 | 312 | 14,300 | 384 |
| 10 | 0.69 | 1610 | 43.2 | 3510 | 94.2 | 6200 | 166 | 8900 | 239 | 12,250 | 329 | 14,750 | 396 | 18,280 | 491 | 19,480 | 523 |
| 15 | 1.0 | 1910 | 51.3 | 4250 | 114 | 7850 | 211 | 11,500 | 309 | 15,010 | 403 | 18,700 | 502 | 21,390 | 574 | 22,760 | 611 |
| 20 | 1.4 | 2240 | 60.1 | 4980 | 134 | 9100 | 244 | 13,600 | 365 | 18,990 | 510 | 22,300 | 599 | 24,110 | 647 | | |
| 25 | 1.7 | 2610 | 70.1 | 5770 | 155 | 10,300 | 277 | 15,500 | 416 | 21,800 | 585 | 26,200 | 703 | 26,620 | 715 | | |
| 30 | 2.1 | 2910 | 78.1 | 6540 | 176 | 11,800 | 317 | 18,300 | 491 | 24,710 | 663 | 27,670 | 743 | 27,670 | 743 | | |
| 40 | 2.8 | 3630 | 97.4 | 8000 | 215 | 14,300 | 384 | 21,600 | 580 | 29,870 | 802 | 30,500 | 819 | | | | |
| 50 | 3.4 | 4330 | 116 | 9300 | 250 | 16,700 | 448 | 24,400 | 655 | 31,950 | 858 | 31,950 | 858 | | | | |
| 60 | 4.1 | 4950 | 133 | 10,850 | 291 | 19,500 | 524 | 26,100 | 701 | 32,010 | 859 | 32,410 | 870 | | | | |
| 80 | 5.5 | 6310 | 169 | 13,600 | 365 | 24,600 | 660 | 28,900 | 776 | 32,010 | 859 | | | | | | |
| 100 | 6.9 | 7640 | 205 | 16,810 | 451 | 30,200 | 811 | | | | | | | | | | |
| 125 | 8.6 | 9370 | 252 | 20,480 | 550 | | | | | | | | | | | | |

Blank areas indicate where maximum operating inlet pressure for a given orifice size is exceeded.

1. Not available on the Type CS803.

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Table 25. Types CS800, CS803 and CS804 Internal Registration Flow Capacities for 1 psig / 0.07 bar Setpoint for 1-1/2 in. / DN 40 Body Size at 10% Accuracy

| SETPOINT | ACCURACY: +/- 10% GAUGE | | SPRING | |
|----------|-------------------------|--------------|-------------------|--------------------------|
| | Droop | Boost | Set Range | Part Number / Color |
| 1 psig | -2.8 in. w.c. | 2.8 in. w.c. | 14 to 30 in. w.c. | GE30341X012 / Dark Green |
| 0.07 bar | -7 mbar | 7 mbar | 35 to 75 mbar | |

| CAPACITIES IN SCFH / Nm ³ /h OF 0.6 SPECIFIC GRAVITY NATURAL GAS | | | | | | | | | | | | | | | | | |
|---|------|------------------------------|--------------------|-----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|--------|--------------------|------------------------------|--------------------|
| Inlet Pressure | | Orifice Size, In. / mm | | | | | | | | | | | | | | | |
| | | 1/4 / 6.4 | | 3/8 / 9.5 | | 1/2 / 13 | | 5/8 / 16 | | 3/4 / 19 | | 7/8 / 22 | | 1 / 25 | | 1-3/8 / 35 ⁽¹⁾⁽²⁾ | |
| | | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h |
| psig | bar | Body Size: 1-1/2 in. / DN 40 | | | | | | | | | | | | | | | |
| 2 | 0.14 | 530 | 14.2 | 710 | 19.1 | 940 | 25.2 | 1220 | 32.8 | 1430 | 38.4 | 1430 | 38.4 | 1330 | 35.7 | 1930 | 51.8 |
| 3 | 0.21 | 620 | 16.6 | 1070 | 28.7 | 1150 | 30.9 | 1490 | 40.0 | 1770 | 47.5 | 1700 | 45.6 | 1700 | 45.6 | 2530 | 67.9 |
| 5 | 0.34 | 810 | 21.7 | 1560 | 41.9 | 1650 | 44.3 | 2050 | 55.0 | 2530 | 67.9 | 2450 | 65.8 | 2450 | 65.8 | 3750 | 101 |
| 10 | 0.69 | 1360 | 36.5 | 2080 | 55.8 | 3100 | 83.2 | 3840 | 103 | 4680 | 126 | 4840 | 130 | 4950 | 133 | 5330 | 143 |
| 15 | 1.0 | 1650 | 44.3 | 2920 | 78.4 | 3860 | 104 | 4670 | 125 | 5570 | 150 | 6290 | 169 | 7000 | 188 | 7500 | 201 |
| 20 | 1.4 | 1960 | 52.6 | 3650 | 98.0 | 4560 | 122 | 5040 | 135 | 5570 | 150 | 6680 | 179 | 8120 | 218 | | |
| 25 | 1.7 | 2400 | 64.4 | 4400 | 118 | 5550 | 149 | 6700 | 180 | 7900 | 212 | 7900 | 212 | 8650 | 232 | | |
| 30 | 2.1 | 2570 | 69.0 | 5270 | 142 | 5650 | 152 | 7080 | 190 | 8220 | 221 | 9300 | 250 | 9990 | 268 | | |
| 40 | 2.8 | 3360 | 90.2 | 3960 | 106 | 7300 | 196 | 7790 | 209 | 8470 | 227 | 8510 | 229 | | | | |
| 50 | 3.4 | 3960 | 106 | 7920 | 213 | 7970 | 214 | 8590 | 231 | 8920 | 240 | 8920 | 240 | | | | |
| 60 | 4.1 | 4660 | 125 | 7820 | 210 | 8020 | 215 | 8520 | 229 | 9020 | 242 | 9020 | 242 | | | | |
| 80 | 5.5 | 5860 | 157 | 8740 | 235 | 9020 | 242 | 9020 | 242 | 9020 | 242 | | | | | | |
| 100 | 6.9 | 7350 | 197 | 8960 | 241 | 10,150 | 273 | | | | | | | | | | |
| 125 | 8.6 | 9050 | 243 | 10,020 | 269 | | | | | | | | | | | | |

Blank areas indicate where maximum operating inlet pressure for a given orifice size is exceeded.
 1. Not available on the Type CS803.
 2. Type CS824 exhibits a 20% reduction in capacity for indicated orifice size. Multiply listed values by a factor of 0.8.

Table 26. Types CS800, CS803 and CS804 Internal Registration Flow Capacities for 1 psig / 0.07 bar Setpoint for 2 in. / DN 50 Body Size at 10% Accuracy

| SETPOINT | ACCURACY: +/- 10% GAUGE | | SPRING | |
|----------|-------------------------|--------------|-------------------|--------------------------|
| | Droop | Boost | Set Range | Part Number / Color |
| 1 psig | -2.8 in. w.c. | 2.8 in. w.c. | 14 to 30 in. w.c. | GE30341X012 / Dark Green |
| 0.07 bar | -7 mbar | 7 mbar | 35 to 75 mbar | |

| CAPACITIES IN SCFH / Nm ³ /h OF 0.6 SPECIFIC GRAVITY NATURAL GAS | | | | | | | | | | | | | | | | | |
|---|------|--------------------------|--------------------|-----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|--------|--------------------|---------------------------|--------------------|
| Inlet Pressure | | Orifice Size, In. / mm | | | | | | | | | | | | | | | |
| | | 1/4 / 6.4 | | 3/8 / 9.5 | | 1/2 / 13 | | 5/8 / 16 | | 3/4 / 19 | | 7/8 / 22 | | 1 / 25 | | 1-3/8 / 35 ⁽¹⁾ | |
| | | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h |
| psig | bar | Body Size: 2 in. / DN 50 | | | | | | | | | | | | | | | |
| 2 | 0.14 | 500 | 13.4 | 860 | 23.1 | 1420 | 38.1 | 1450 | 38.9 | 1450 | 38.9 | 1450 | 38.9 | 1450 | 38.9 | 1450 | 38.9 |
| 3 | 0.21 | 610 | 16.4 | 1030 | 27.7 | 1420 | 38.1 | 1660 | 44.6 | 2000 | 53.7 | 2300 | 61.7 | 2700 | 72.5 | 3260 | 87.5 |
| 5 | 0.34 | 850 | 22.8 | 1640 | 44.0 | 1800 | 48.3 | 2130 | 57.2 | 2570 | 69.0 | 3320 | 89.1 | 4190 | 113 | 5140 | 138 |
| 10 | 0.69 | 1350 | 36.2 | 1750 | 47.0 | 2380 | 63.9 | 4000 | 107 | 5920 | 159 | 6540 | 176 | 7110 | 191 | 8470 | 227 |
| 15 | 1.0 | 1610 | 43.2 | 2690 | 72.2 | 3540 | 95.0 | 5290 | 142 | 7470 | 201 | 7680 | 206 | 8050 | 216 | 9580 | 257 |
| 20 | 1.4 | 2000 | 53.7 | 3760 | 101 | 5350 | 144 | 7430 | 200 | 9760 | 262 | 9760 | 262 | 9800 | 263 | | |
| 25 | 1.7 | 2400 | 64.4 | 4340 | 117 | 7000 | 188 | 9770 | 262 | 13,100 | 352 | 13,410 | 360 | 13,890 | 373 | | |
| 30 | 2.1 | 2470 | 66.3 | 5120 | 137 | 7500 | 201 | 11,420 | 307 | 16,250 | 436 | 17,320 | 465 | 18,520 | 497 | | |
| 40 | 2.8 | 3490 | 93.7 | 7300 | 196 | 13,100 | 352 | 15,510 | 416 | 18,410 | 494 | 20,910 | 561 | | | | |
| 50 | 3.4 | 3900 | 105 | 8020 | 215 | 16,110 | 433 | 17,090 | 459 | 18,410 | 494 | 22,290 | 598 | | | | |
| 60 | 4.1 | 4600 | 124 | 10,700 | 287 | 18,800 | 505 | 19,700 | 529 | 20,700 | 556 | 22,410 | 602 | | | | |
| 80 | 5.5 | 5700 | 153 | 13,000 | 349 | 18,800 | 505 | 19,700 | 529 | 20,700 | 556 | | | | | | |
| 100 | 6.9 | 7190 | 193 | 15,720 | 422 | 19,070 | 512 | | | | | | | | | | |
| 125 | 8.6 | 9190 | 247 | 19,600 | 526 | | | | | | | | | | | | |

Blank areas indicate where maximum operating inlet pressure for a given orifice size is exceeded.
 1. Not available on the Type CS803.

Table 27. Types CS800, CS803⁽¹⁾ and CS804⁽²⁾ Internal Registration Flow Capacities for 1 psig / 0.07 bar Setpoint for 1-1/2 in. / DN 40 Body Size at 20% Accuracy

| SETPOINT | ACCURACY: + / - 20% GAUGE | | SPRING | |
|----------|---------------------------|--------------|-------------------|--------------------------|
| | Droop | Boost | Set Range | Part Number / Color |
| 1 psig | -5.5 in. w.c. | 5.5 in. w.c. | 14 to 30 in. w.c. | GE30341X012 / Dark Green |
| 0.07 bar | -14 mbar | 14 mbar | 35 to 75 mbar | |

| CAPACITIES IN SCFH / Nm ³ /h OF 0.6 SPECIFIC GRAVITY NATURAL GAS | | | | | | | | | | | | | | | | | |
|---|------|------------------------------|--------------------|-----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|--------|--------------------|------------------------------|--------------------|
| Inlet Pressure | | Orifice Size, In. / mm | | | | | | | | | | | | | | | |
| | | 1/4 / 6.4 | | 3/8 / 9.5 | | 1/2 / 13 | | 5/8 / 16 | | 3/4 / 19 | | 7/8 / 22 | | 1 / 25 | | 1-3/8 / 35 ⁽¹⁾⁽²⁾ | |
| | | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h |
| psig | bar | Body Size: 1-1/2 in. / DN 40 | | | | | | | | | | | | | | | |
| 2 | 0.14 | 500 | 13.4 | 750 | 20.1 | 1750 | 47.0 | 2000 | 53.7 | 2250 | 60.4 | 2300 | 61.7 | 2400 | 64.4 | 2850 | 76.5 |
| 3 | 0.21 | 700 | 18.8 | 1100 | 29.5 | 1930 | 51.8 | 2200 | 59.1 | 2630 | 70.6 | 2900 | 77.9 | 3210 | 86.2 | 3680 | 98.8 |
| 5 | 0.34 | 1100 | 29.5 | 1800 | 48.3 | 2300 | 61.7 | 2800 | 75.2 | 3400 | 91.3 | 4100 | 110 | 4850 | 130 | 5350 | 144 |
| 10 | 0.69 | 1600 | 43.0 | 3200 | 85.9 | 4600 | 124 | 5800 | 156 | 7250 | 195 | 8000 | 215 | 8800 | 236 | 8800 | 236 |
| 15 | 1.0 | 1900 | 51.0 | 3970 | 107 | 5400 | 145 | 6600 | 177 | 8030 | 216 | 8700 | 234 | 9410 | 253 | 10,020 | 269 |
| 20 | 1.4 | 2200 | 59.1 | 4750 | 128 | 6200 | 166 | 7400 | 199 | 8820 | 237 | 9400 | 252 | 10,020 | 269 | | |
| 25 | 1.7 | 2500 | 67.1 | 5520 | 148 | 7000 | 188 | 8200 | 220 | 9610 | 258 | 10,100 | 271 | 10,630 | 285 | | |
| 30 | 2.1 | 2800 | 75.2 | 6300 | 169 | 7800 | 209 | 9000 | 242 | 10,400 | 279 | 10,800 | 290 | 11,250 | 302 | | |
| 40 | 2.8 | 3500 | 94.0 | 7400 | 199 | 8410 | 226 | 9400 | 252 | 10,600 | 285 | 10,600 | 285 | | | | |
| 50 | 3.4 | 4200 | 113 | 8500 | 228 | 9030 | 242 | 9800 | 263 | 10,800 | 290 | 10,800 | 290 | | | | |
| 60 | 4.1 | 4900 | 132 | 9600 | 258 | 9650 | 259 | 10,300 | 277 | 11,000 | 295 | 11,000 | 295 | | | | |
| 80 | 5.5 | 6100 | 164 | 10,070 | 270 | 10,800 | 290 | 10,900 | 293 | 11,000 | 295 | | | | | | |
| 100 | 6.9 | 7300 | 196 | 10,550 | 283 | 11,950 | 321 | | | | | | | | | | |
| 125 | 8.6 | 9100 | 244 | 10,550 | 283 | | | | | | | | | | | | |

Blank areas indicate where maximum operating inlet pressure for a given orifice size is exceeded.

1. Not available on the Type CS803.

2. Type CS824 exhibits a 20% reduction in capacity for indicated orifice size. Multiply listed values by a factor of 0.8.

Table 28. Types CS800, CS803 and CS804 Internal Registration Flow Capacities for 1 psig / 0.07 bar Setpoint for 2 in. / DN 50 Body Size at 20% Accuracy

| SETPOINT | ACCURACY: + / - 20% GAUGE | | SPRING | |
|----------|---------------------------|--------------|-------------------|--------------------------|
| | Droop | Boost | Set Range | Part Number / Color |
| 1 psig | -5.5 in. w.c. | 5.5 in. w.c. | 14 to 30 in. w.c. | GE30341X012 / Dark Green |
| 0.07 bar | -14 mbar | 14 mbar | 35 to 75 mbar | |

| CAPACITIES IN SCFH / Nm ³ /h OF 0.6 SPECIFIC GRAVITY NATURAL GAS | | | | | | | | | | | | | | | | | |
|---|------|--------------------------|--------------------|-----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|--------|--------------------|---------------------------|--------------------|
| Inlet Pressure | | Orifice Size, In. / mm | | | | | | | | | | | | | | | |
| | | 1/4 / 6.4 | | 3/8 / 9.5 | | 1/2 / 13 | | 5/8 / 16 | | 3/4 / 19 | | 7/8 / 22 | | 1 / 25 | | 1-3/8 / 35 ⁽¹⁾ | |
| | | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h |
| psig | bar | Body Size: 2 in. / DN 50 | | | | | | | | | | | | | | | |
| 2 | 0.14 | 650 | 17.4 | 1040 | 27.9 | 2200 | 59.1 | 2570 | 69.0 | 3200 | 85.9 | 3400 | 91.3 | 3600 | 96.6 | 4500 | 121 |
| 3 | 0.21 | 800 | 21.5 | 1560 | 41.9 | 2530 | 67.9 | 3100 | 83.2 | 3730 | 100 | 4300 | 115 | 4960 | 133 | 6330 | 170 |
| 5 | 0.34 | 1100 | 29.5 | 2300 | 61.7 | 3200 | 85.9 | 3900 | 105 | 4800 | 129 | 6100 | 164 | 7700 | 207 | 10,000 | 269 |
| 10 | 0.69 | 1600 | 43.0 | 3000 | 80.5 | 4300 | 115 | 7500 | 201 | 11,400 | 306 | 13,200 | 354 | 15,200 | 408 | 16,300 | 438 |
| 15 | 1.0 | 1900 | 51.0 | 4000 | 107 | 6900 | 185 | 10,800 | 290 | 14,560 | 391 | 18,000 | 483 | 19,930 | 535 | 20,170 | 542 |
| 20 | 1.4 | 2300 | 61.7 | 4900 | 132 | 9100 | 244 | 13,600 | 365 | 18,520 | 497 | 21,300 | 572 | 22,680 | 609 | | |
| 25 | 1.7 | 2600 | 69.8 | 5600 | 150 | 10,500 | 282 | 15,500 | 416 | 21,700 | 583 | 24,300 | 652 | 24,410 | 655 | | |
| 30 | 2.1 | 2900 | 77.9 | 6500 | 175 | 11,800 | 317 | 17,900 | 481 | 24,020 | 645 | 25,320 | 680 | 25,580 | 687 | | |
| 40 | 2.8 | 3700 | 99.3 | 8000 | 215 | 14,500 | 389 | 20,100 | 540 | 27,000 | 725 | 27,810 | 747 | | | | |
| 50 | 3.4 | 4300 | 115 | 9300 | 250 | 16,600 | 446 | 21,700 | 583 | 27,810 | 747 | 27,810 | 747 | | | | |
| 60 | 4.1 | 4900 | 132 | 10,940 | 294 | 19,500 | 524 | 24,900 | 669 | 29,050 | 780 | 29,050 | 780 | | | | |
| 80 | 5.5 | 6300 | 169 | 13,830 | 371 | 24,000 | 644 | 27,400 | 736 | 29,070 | 780 | | | | | | |
| 100 | 6.9 | 7700 | 207 | 16,680 | 448 | 29,500 | 792 | | | | | | | | | | |
| 125 | 8.6 | 9600 | 258 | 20,200 | 542 | | | | | | | | | | | | |

Blank areas indicate where maximum operating inlet pressure for a given orifice size is exceeded.

1. Not available on the Type CS803.

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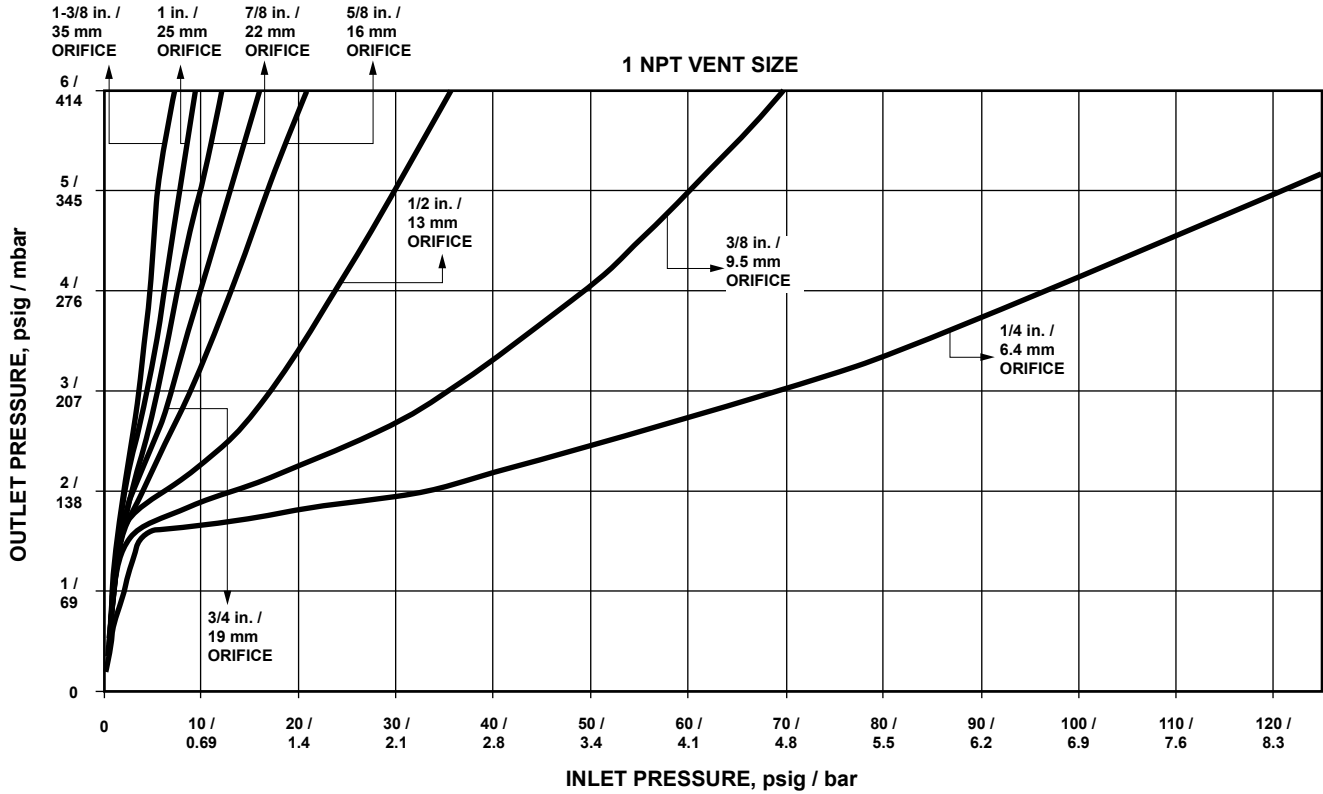


Figure 15. Type CS800IR Relief Curves (Blocked Open per Orifice Size) at 1 psig / 0.07 bar Set Pressure

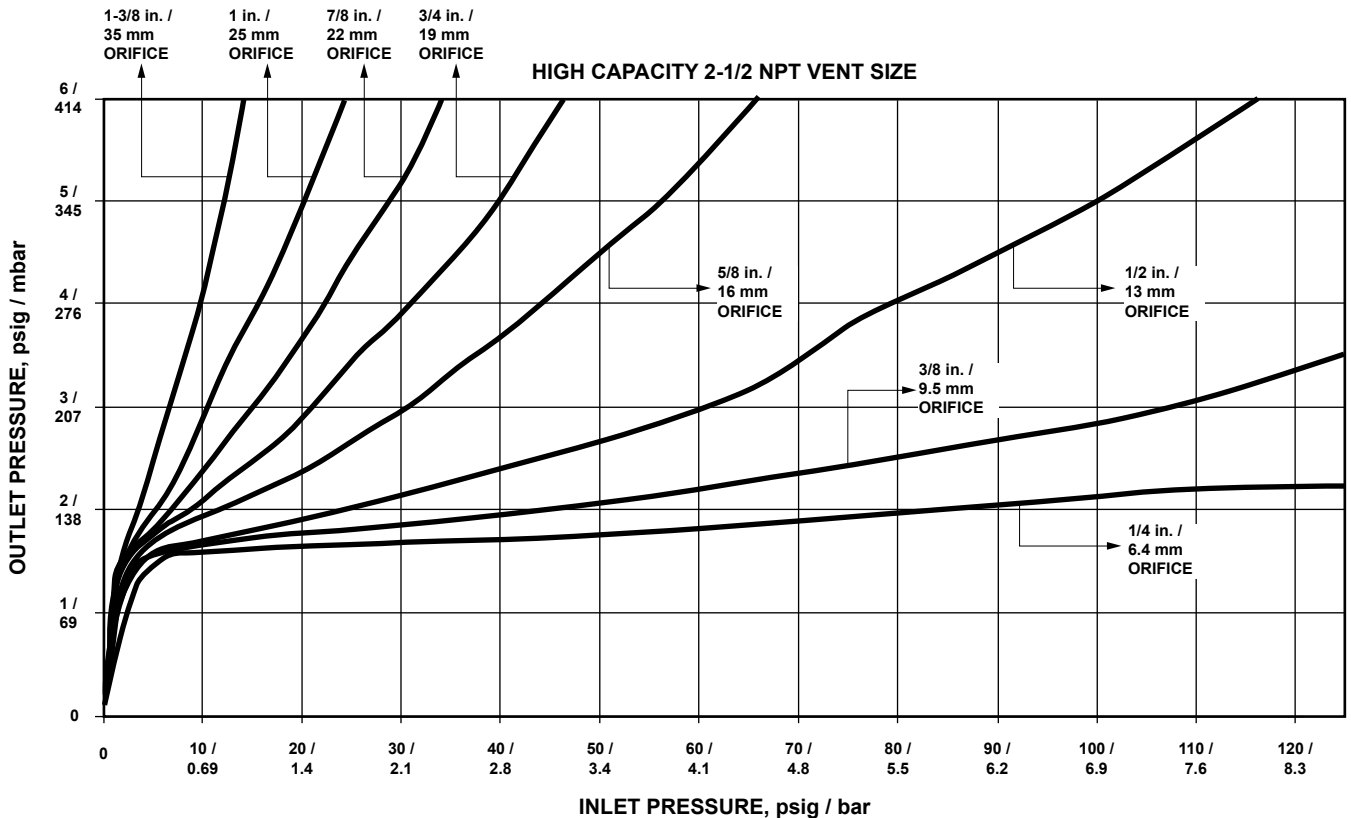


Figure 16. Type CS800IQ High Capacity Relief Curves (Blocked Open per Orifice Size) at 1 psig / 0.07 bar Set Pressure

Table 29. Types CS820, CS823 and CS824 Internal Registration Flow Capacities for 2 psig / 0.14 bar Setpoint for 1-1/2 in. / DN 40 Body Size at 1% ABS Accuracy

| SETPOINT | ACCURACY: + / - 1% ABS | | SPRING | |
|----------|------------------------|-----------|------------------|-------------------------|
| | Droop | Boost | Set Range | Part Number / Color |
| 2 psig | -0.17 psig | 0.17 psig | 1 to 2.5 psig | GE30342X012 / Dark Blue |
| 0.14 bar | -12 mbar | 12 mbar | 0.07 to 0.17 bar | |

| CAPACITIES IN SCFH / Nm ³ /h OF 0.6 SPECIFIC GRAVITY NATURAL GAS | | | | | | | | | | | | | | | | | |
|---|------|------------------------------|--------------------|-----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|--------|--------------------|---------------------------|--------------------|
| Inlet Pressure | | Orifice Size, In. / mm | | | | | | | | | | | | | | | |
| | | 1/4 / 6.4 | | 3/8 / 9.5 | | 1/2 / 13 | | 5/8 / 16 | | 3/4 / 19 | | 7/8 / 22 | | 1 / 25 | | 1-3/8 / 35 ⁽¹⁾ | |
| | | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h |
| psig | bar | Body Size: 1-1/2 in. / DN 40 | | | | | | | | | | | | | | | |
| 3 | 0.21 | 710 | 19.1 | 1000 | 26.8 | 1000 | 26.8 | 1380 | 37.0 | 1600 | 43.0 | 1780 | 47.8 | 1800 | 48.3 | 2510 | 67.4 |
| 5 | 0.34 | 900 | 24.2 | 1160 | 31.1 | 1740 | 46.7 | 2080 | 55.8 | 2440 | 65.5 | 2920 | 78.4 | 3300 | 88.6 | 4150 | 111 |
| 10 | 0.69 | 1410 | 37.9 | 1980 | 53.2 | 2930 | 78.7 | 3780 | 102 | 4280 | 115 | 4760 | 128 | 5250 | 141 | 6430 | 173 |
| 15 | 1.0 | 1920 | 51.5 | 2690 | 72.2 | 4040 | 109 | 5060 | 136 | 5580 | 150 | 5760 | 155 | 6920 | 186 | 7720 | 207 |
| 20 | 1.4 | 2310 | 62.0 | 3370 | 90.5 | 5180 | 139 | 6350 | 171 | 6870 | 184 | 7500 | 201 | 7870 | 211 | | |
| 25 | 1.7 | 2570 | 69.0 | 4050 | 109 | 6050 | 162 | 7280 | 195 | 7580 | 204 | 7890 | 212 | 8440 | 227 | | |
| 30 | 2.1 | 2930 | 78.7 | 4720 | 127 | 6960 | 187 | 7800 | 209 | 8570 | 230 | 8230 | 221 | 9050 | 243 | | |
| 40 | 2.8 | 3510 | 94.2 | 6280 | 169 | 8370 | 225 | 9400 | 252 | 9450 | 254 | 9290 | 250 | | | | |
| 50 | 3.4 | 4330 | 116 | 7550 | 203 | 9320 | 250 | 9440 | 253 | 10,220 | 274 | 10,040 | 270 | | | | |
| 60 | 4.1 | 4940 | 133 | 8960 | 241 | 10,010 | 269 | 10,420 | 280 | 10,420 | 280 | 10,140 | 272 | | | | |
| 80 | 5.5 | 6360 | 171 | 10,320 | 277 | 10,890 | 292 | 11,180 | 300 | 11,180 | 300 | | | | | | |
| 100 | 6.9 | 7560 | 203 | 11,090 | 298 | 11,290 | 303 | | | | | | | | | | |
| 125 | 8.6 | 9300 | 250 | 11,290 | 303 | | | | | | | | | | | | |

Blank areas indicate where maximum operating inlet pressure for a given orifice size is exceeded.
 1. Not available on the Type CS823.

Table 30. Types CS820, CS823⁽¹⁾⁽²⁾ and CS824⁽³⁾ Internal Registration Flow Capacities for 2 psig / 0.14 bar Setpoint for 2 in. / DN 50 Body Size at 1% ABS Accuracy

| SETPOINT | ACCURACY: + / - 1% ABS | | SPRING | |
|----------|------------------------|-----------|------------------|-------------------------|
| | Droop | Boost | Set Range | Part Number / Color |
| 2 psig | -0.17 psig | 0.17 psig | 1 to 2.5 psig | GE30342X012 / Dark Blue |
| 0.14 bar | -12 mbar | 12 mbar | 0.07 to 0.17 bar | |

| CAPACITIES IN SCFH / Nm ³ /h OF 0.6 SPECIFIC GRAVITY NATURAL GAS | | | | | | | | | | | | | | | | | |
|---|------|--------------------------|--------------------|--------------------------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|-----------------------|--------------------|------------------------------|--------------------|
| Inlet Pressure | | Orifice Size, In. / mm | | | | | | | | | | | | | | | |
| | | 1/4 / 6.4 | | 3/8 / 9.5 ⁽¹⁾ | | 1/2 / 13 | | 5/8 / 16 | | 3/4 / 19 | | 7/8 / 22 | | 1 / 25 ⁽¹⁾ | | 1-3/8 / 35 ⁽²⁾⁽³⁾ | |
| | | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h |
| psig | bar | Body Size: 2 in. / DN 50 | | | | | | | | | | | | | | | |
| 3 | 0.21 | 650 | 17.4 | 810 | 21.7 | 1080 | 29.0 | 1610 | 43.2 | 1690 | 45.4 | 1860 | 49.9 | 2690 | 72.2 | 3060 | 82.1 |
| 5 | 0.34 | 1040 | 27.9 | 1290 | 34.6 | 1850 | 49.7 | 2540 | 68.2 | 2900 | 77.9 | 3960 | 106 | 4270 | 115 | 5340 | 143 |
| 10 | 0.69 | 1480 | 39.7 | 2240 | 60.1 | 3410 | 91.5 | 4850 | 130 | 5780 | 155 | 7560 | 203 | 9230 | 248 | 10,800 | 290 |
| 15 | 1.0 | 1870 | 50.2 | 3260 | 87.5 | 5410 | 145 | 7700 | 207 | 8490 | 228 | 11,750 | 315 | 12,530 | 336 | 14,550 | 391 |
| 20 | 1.4 | 2280 | 61.2 | 4070 | 109 | 7360 | 198 | 10,180 | 273 | 11,900 | 320 | 13,250 | 356 | 14,760 | 396 | | |
| 25 | 1.7 | 2600 | 69.8 | 4980 | 134 | 9100 | 244 | 12,640 | 339 | 15,050 | 404 | 16,190 | 435 | 17,120 | 460 | | |
| 30 | 2.1 | 2920 | 78.4 | 5780 | 155 | 10,640 | 286 | 14,500 | 389 | 16,950 | 455 | 17,370 | 466 | 18,170 | 488 | | |
| 40 | 2.8 | 3510 | 94.2 | 7640 | 205 | 14,010 | 376 | 17,930 | 481 | 20,100 | 537 | 20,230 | 542 | | | | |
| 50 | 3.4 | 4240 | 113 | 8790 | 236 | 16,930 | 455 | 21,160 | 568 | 22,560 | 606 | 20,230 | 542 | | | | |
| 60 | 4.1 | 4980 | 134 | 10,650 | 286 | 19,640 | 527 | 23,460 | 630 | 23,600 | 634 | 20,230 | 542 | | | | |
| 80 | 5.5 | 6300 | 169 | 13,600 | 365 | 24,830 | 667 | 24,830 | 667 | 24,830 | 667 | | | | | | |
| 100 | 6.9 | 7620 | 205 | 16,280 | 437 | 28,790 | 773 | | | | | | | | | | |
| 125 | 8.6 | 9370 | 252 | 19,900 | 534 | | | | | | | | | | | | |

1. Type CS823 exhibits a 15% reduction in capacity for indicated orifice size. Multiply listed values by a factor of 0.85.
 2. Not available on the Type CS823.
 3. Type CS824 exhibits a 20% reduction in capacity for indicated orifice size. Multiply listed values by a factor of 0.8.

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Table 31. Types CS820, CS823 and CS824 Internal Registration Flow Capacities for 2 psig / 0.14 bar Setpoint for 1-1/2 in. / DN 40 Body Size at 2% ABS Accuracy

| SETPOINT | ACCURACY: + / - 2% ABS | | SPRING | |
|----------|------------------------|-----------|------------------|-------------------------|
| | Droop | Boost | Set Range | Part Number / Color |
| 2 psig | -0.33 psig | 0.33 psig | 1 to 2.5 psig | GE30342X012 / Dark Blue |
| 0.14 bar | -23 mbar | 23 mbar | 0.07 to 0.17 bar | |

| CAPACITIES IN SCFH / Nm ³ /h OF 0.6 SPECIFIC GRAVITY NATURAL GAS | | | | | | | | | | | | | | | | | |
|---|------|------------------------------|--------------------|-----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|--------|--------------------|---------------------------|--------------------|
| Inlet Pressure | | Orifice Size, In. / mm | | | | | | | | | | | | | | | |
| | | 1/4 / 6.4 | | 3/8 / 9.5 | | 1/2 / 13 | | 5/8 / 16 | | 3/4 / 19 | | 7/8 / 22 | | 1 / 25 | | 1-3/8 / 35 ⁽¹⁾ | |
| | | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h |
| psig | bar | Body Size: 1-1/2 in. / DN 40 | | | | | | | | | | | | | | | |
| 3 | 0.21 | 800 | 21.5 | 1350 | 36.2 | 1810 | 48.6 | 2370 | 63.6 | 2680 | 71.9 | 3460 | 92.9 | 3490 | 93.7 | 4140 | 111 |
| 5 | 0.34 | 1010 | 27.1 | 1790 | 48.1 | 2810 | 75.4 | 3740 | 100 | 4210 | 113 | 5000 | 134 | 5640 | 151 | 7310 | 196 |
| 10 | 0.69 | 1550 | 41.6 | 2930 | 78.7 | 4800 | 129 | 6160 | 165 | 6880 | 185 | 7440 | 200 | 8520 | 229 | 9690 | 260 |
| 15 | 1.0 | 1980 | 53.2 | 3870 | 104 | 6450 | 173 | 8040 | 216 | 8610 | 231 | 9020 | 242 | 10,210 | 274 | 10,800 | 290 |
| 20 | 1.4 | 2310 | 62.0 | 4740 | 127 | 7810 | 210 | 9480 | 255 | 10,030 | 269 | 10,510 | 282 | 11,350 | 305 | | |
| 25 | 1.7 | 2670 | 71.7 | 5560 | 149 | 8890 | 239 | 10,270 | 276 | 11,080 | 297 | 11,160 | 300 | 12,220 | 328 | | |
| 30 | 2.1 | 2980 | 80.0 | 6300 | 169 | 9830 | 264 | 11,500 | 309 | 11,900 | 320 | 11,560 | 310 | 12,590 | 338 | | |
| 40 | 2.8 | 3630 | 97.4 | 7850 | 211 | 11,290 | 303 | 12,590 | 338 | 12,870 | 346 | 12,630 | 339 | | | | |
| 50 | 3.4 | 4360 | 117 | 9160 | 246 | 12,610 | 339 | 13,100 | 352 | 13,340 | 358 | 13,340 | 358 | | | | |
| 60 | 4.1 | 4990 | 134 | 10,860 | 292 | 13,500 | 362 | 13,530 | 363 | 13,530 | 363 | 13,530 | 363 | | | | |
| 80 | 5.5 | 6380 | 171 | 13,420 | 360 | 14,230 | 382 | 14,230 | 382 | 14,230 | 382 | | | | | | |
| 100 | 6.9 | 7660 | 206 | 14,690 | 394 | 15,150 | 407 | | | | | | | | | | |
| 125 | 8.6 | 9390 | 252 | 14,690 | 394 | | | | | | | | | | | | |

Blank areas indicate where maximum operating inlet pressure for a given orifice size is exceeded.
 1. Not available on the Type CS823.

Table 32. Types CS820, CS823⁽¹⁾⁽²⁾ and CS824⁽⁴⁾ Internal Registration Flow Capacities for 2 psig / 0.14 bar Setpoint for 2 in. / DN 50 Body Size at 2% ABS Accuracy

| SETPOINT | ACCURACY: + / - 2% ABS | | SPRING | |
|----------|------------------------|-----------|------------------|-------------------------|
| | Droop | Boost | Set Range | Part Number / Color |
| 2 psig | -0.33 psig | 0.33 psig | 1 to 2.5 psig | GE30342X012 / Dark Blue |
| 0.14 bar | -23 mbar | 23 mbar | 0.07 to 0.17 bar | |

| CAPACITIES IN SCFH / Nm ³ /h OF 0.6 SPECIFIC GRAVITY NATURAL GAS | | | | | | | | | | | | | | | | | |
|---|------|--------------------------|--------------------|-----------|--------------------|----------|--------------------|----------|--------------------|---------------------|---------------------|----------|--------------------|-----------------------|--------------------|------------------------------|--------------------|
| Inlet Pressure | | Orifice Size, In. / mm | | | | | | | | | | | | | | | |
| | | 1/4 / 6.4 | | 3/8 / 9.5 | | 1/2 / 13 | | 5/8 / 16 | | 3/4 / 19 | | 7/8 / 22 | | 1 / 25 ⁽¹⁾ | | 1-3/8 / 35 ⁽³⁾⁽⁴⁾ | |
| | | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h |
| psig | bar | Body Size: 2 in. / DN 50 | | | | | | | | | | | | | | | |
| 3 | 0.21 | 720 | 19.3 | 1150 | 30.9 | 1980 | 53.2 | 2470 | 66.3 | 3230 ⁽²⁾ | 86.7 ⁽²⁾ | 3540 | 95.0 | 4200 | 113 | 5640 | 151 |
| 5 | 0.34 | 1140 | 30.6 | 1850 | 49.7 | 3140 | 84.3 | 4120 | 111 | 5150 ⁽²⁾ | 138 ⁽²⁾ | 6120 | 164 | 7050 | 189 | 9210 | 247 |
| 10 | 0.69 | 1600 | 43.0 | 3100 | 83.2 | 5380 | 144 | 7250 | 195 | 8730 | 234 | 11,300 | 303 | 12,550 | 337 | 16,570 | 445 |
| 15 | 1.0 | 1980 | 53.2 | 4150 | 111 | 7440 | 200 | 10,230 | 275 | 12,410 | 333 | 15,290 | 411 | 16,900 | 454 | 19,470 | 523 |
| 20 | 1.4 | 2330 | 62.6 | 4930 | 132 | 9100 | 244 | 12,570 | 337 | 15,870 | 426 | 18,530 | 497 | 19,190 | 515 | | |
| 25 | 1.7 | 2650 | 71.1 | 5670 | 152 | 10,450 | 281 | 14,690 | 394 | 18,720 | 503 | 21,120 | 567 | 22,120 | 594 | | |
| 30 | 2.1 | 2940 | 78.9 | 6170 | 166 | 11,770 | 316 | 16,960 | 455 | 20,850 | 560 | 23,130 | 621 | 23,740 | 637 | | |
| 40 | 2.8 | 3580 | 96.1 | 7920 | 213 | 14,780 | 397 | 20,790 | 558 | 24,670 | 662 | 26,630 | 715 | | | | |
| 50 | 3.4 | 4280 | 115 | 9090 | 244 | 17,550 | 471 | 24,300 | 652 | 26,400 | 709 | 28,150 | 756 | | | | |
| 60 | 4.1 | 4980 | 134 | 10,860 | 292 | 20,470 | 550 | 28,340 | 761 | 28,340 | 761 | 29,780 | 800 | | | | |
| 80 | 5.5 | 6310 | 169 | 13,700 | 368 | 25,840 | 694 | 30,680 | 824 | 30,680 | 824 | | | | | | |
| 100 | 6.9 | 7650 | 205 | 16,580 | 445 | 30,980 | 832 | | | | | | | | | | |
| 125 | 8.6 | 9360 | 251 | 20,190 | 542 | | | | | | | | | | | | |

1. Type CS823 exhibits a 10% reduction in capacity for indicated orifice size. Multiply listed values by a factor of 0.9.
 2. Due to droop, the Type CS823 exhibits a 15% reduction in capacity for indicated conditions. Multiply listed values by a factor of 0.85.
 3. Not available on the Type CS823.
 4. Type CS824 exhibits a 20% reduction in capacity for indicated orifice size. Multiply listed values by a factor of 0.8.

Table 33. Types CS820, CS823 and CS824 Internal Registration Flow Capacities for 2 psig / 0.14 bar Setpoint for 1-1/2 in. / DN 40 Body Size at 10% Accuracy

| SETPOINT | ACCURACY: + / - 10% GAUGE | | SPRING | |
|----------|---------------------------|-----------|------------------|-------------------------|
| | Droop | Boost | Set Range | Part Number / Color |
| 2 psig | -0.20 psig | 0.20 psig | 1 to 2.5 psig | GE30342X012 / Dark Blue |
| 0.14 bar | -14 mbar | 14 mbar | 0.07 to 0.17 bar | |

| CAPACITIES IN SCFH / Nm ³ /h OF 0.6 SPECIFIC GRAVITY NATURAL GAS | | | | | | | | | | | | | | | | | |
|---|------|------------------------------|--------------------|-----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|--------|--------------------|---------------------------|--------------------|
| Inlet Pressure | | Orifice Size, In. / mm | | | | | | | | | | | | | | | |
| | | 1/4 / 6.4 | | 3/8 / 9.5 | | 1/2 / 13 | | 5/8 / 16 | | 3/4 / 19 | | 7/8 / 22 | | 1 / 25 | | 1-3/8 / 35 ⁽¹⁾ | |
| | | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h |
| psig | bar | Body Size: 1-1/2 in. / DN 40 | | | | | | | | | | | | | | | |
| 3 | 0.21 | 740 | 19.9 | 1170 | 31.4 | 1170 | 31.4 | 1560 | 41.9 | 1730 | 46.4 | 2240 | 60.1 | 2240 | 60.1 | 3080 | 82.7 |
| 5 | 0.34 | 960 | 25.8 | 1410 | 37.9 | 1980 | 53.2 | 2510 | 67.4 | 2850 | 76.5 | 3640 | 97.7 | 3980 | 107 | 4830 | 130 |
| 10 | 0.69 | 1450 | 38.9 | 2260 | 60.7 | 3360 | 90.2 | 4320 | 116 | 5040 | 135 | 5510 | 148 | 6030 | 162 | 7410 | 199 |
| 15 | 1.0 | 1940 | 52.1 | 3080 | 82.7 | 4640 | 125 | 5830 | 157 | 6480 | 174 | 6980 | 187 | 7740 | 208 | 8440 | 227 |
| 20 | 1.4 | 2310 | 62.0 | 3880 | 104 | 5920 | 159 | 7090 | 190 | 7720 | 207 | 8020 | 215 | 8860 | 238 | | |
| 25 | 1.7 | 2610 | 70.1 | 4660 | 125 | 6830 | 183 | 8210 | 220 | 8470 | 227 | 8600 | 231 | 9180 | 246 | | |
| 30 | 2.1 | 2960 | 79.5 | 5430 | 146 | 7750 | 208 | 8810 | 237 | 9450 | 254 | 9120 | 245 | 9860 | 265 | | |
| 40 | 2.8 | 3570 | 95.8 | 6830 | 183 | 9110 | 245 | 10,220 | 274 | 10,230 | 275 | 10,230 | 275 | | | | |
| 50 | 3.4 | 4340 | 117 | 8310 | 223 | 10,060 | 270 | 10,520 | 282 | 10,800 | 290 | 10,800 | 290 | | | | |
| 60 | 4.1 | 4970 | 133 | 9680 | 260 | 10,850 | 291 | 11,100 | 298 | 11,100 | 298 | 11,100 | 298 | | | | |
| 80 | 5.5 | 6370 | 171 | 11,390 | 306 | 11,810 | 317 | 11,810 | 317 | 11,810 | 317 | | | | | | |
| 100 | 6.9 | 7590 | 204 | 12,070 | 324 | 12,090 | 325 | | | | | | | | | | |
| 125 | 8.6 | 9340 | 251 | 12,080 | 324 | | | | | | | | | | | | |

Blank areas indicate where maximum operating inlet pressure for a given orifice size is exceeded.
 1. Not available on the Type CS823.

Table 34. Types CS820, CS823⁽¹⁾ and CS824 Internal Registration Flow Capacities for 2 psig / 0.14 bar Setpoint for 2 in. / DN 50 Body Size at 10% Accuracy

| SETPOINT | ACCURACY: + / - 10% GAUGE | | SPRING | |
|----------|---------------------------|-----------|------------------|-------------------------|
| | Droop | Boost | Set Range | Part Number / Color |
| 2 psig | -0.20 psig | 0.20 psig | 1 to 2.5 psig | GE30342X012 / Dark Blue |
| 0.14 bar | -14 mbar | 14 mbar | 0.07 to 0.17 bar | |

| CAPACITIES IN SCFH / Nm ³ /h OF 0.6 SPECIFIC GRAVITY NATURAL GAS | | | | | | | | | | | | | | | | | |
|---|------|--------------------------|--------------------|---------------------|---------------------|----------|--------------------|----------|--------------------|---------------------|---------------------|----------|--------------------|--------|--------------------|------------------------------|--------------------|
| Inlet Pressure | | Orifice Size, In. / mm | | | | | | | | | | | | | | | |
| | | 1/4 / 6.4 | | 3/8 / 9.5 | | 1/2 / 13 | | 5/8 / 16 | | 3/4 / 19 | | 7/8 / 22 | | 1 / 25 | | 1-3/8 / 35 ⁽²⁾⁽³⁾ | |
| | | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h |
| psig | bar | Body Size: 2 in. / DN 50 | | | | | | | | | | | | | | | |
| 3 | 0.21 | 670 | 18.0 | 910 | 24.4 | 1280 | 34.4 | 1760 | 47.2 | 1920 ⁽¹⁾ | 51.5 ⁽¹⁾ | 2310 | 62.0 | 2770 | 74.4 | 3490 | 93.7 |
| 5 | 0.34 | 1080 | 29.0 | 1430 | 38.4 | 2230 | 59.9 | 3110 | 83.5 | 3440 ⁽¹⁾ | 92.3 ⁽¹⁾ | 4830 | 130 | 4970 | 133 | 6390 | 172 |
| 10 | 0.69 | 1510 | 40.5 | 2580 ⁽¹⁾ | 69.3 ⁽¹⁾ | 4040 | 109 | 5470 | 147 | 6680 | 179 | 8670 | 233 | 10,060 | 270 | 12,100 | 325 |
| 15 | 1.0 | 1900 | 51.0 | 3610 | 96.9 | 6220 | 167 | 8610 | 231 | 9800 | 263 | 12,320 | 331 | 13,570 | 364 | 17,260 | 463 |
| 20 | 1.4 | 2310 | 62.0 | 4520 | 121 | 7980 | 214 | 10,990 | 295 | 13,000 | 349 | 14,630 | 393 | 16,230 | 436 | | |
| 25 | 1.7 | 2620 | 70.3 | 5380 | 144 | 9690 | 260 | 13,480 | 362 | 16,010 | 430 | 17,180 | 461 | 18,510 | 497 | | |
| 30 | 2.1 | 2940 | 78.9 | 5910 | 159 | 11,080 | 297 | 15,240 | 409 | 18,190 | 488 | 19,450 | 522 | 19,930 | 535 | | |
| 40 | 2.8 | 3530 | 94.8 | 7770 | 209 | 14,390 | 386 | 18,740 | 503 | 21,510 | 577 | 22,830 | 613 | | | | |
| 50 | 3.4 | 4250 | 114 | 8860 | 238 | 17,160 | 461 | 22,320 | 599 | 23,060 | 619 | 23,060 | 619 | | | | |
| 60 | 4.1 | 4980 | 134 | 10,710 | 288 | 20,160 | 541 | 23,740 | 637 | 23,740 | 637 | 23,740 | 637 | | | | |
| 80 | 5.5 | 6310 | 169 | 13,640 | 366 | 25,290 | 679 | 26,330 | 707 | 26,330 | 707 | | | | | | |
| 100 | 6.9 | 7640 | 205 | 16,380 | 440 | 29,370 | 789 | | | | | | | | | | |
| 125 | 8.6 | 9370 | 252 | 19,980 | 536 | | | | | | | | | | | | |

1. Due to droop, the Type CS823 exhibits a 10% reduction in capacity for indicated conditions. Multiply listed values by a factor of 0.9.
 2. Not available on the Type CS823.
 3. Type CS824 exhibits a 20% reduction in capacity for indicated orifice size. Multiply listed values by a factor of 0.8.

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Table 35. Types CS820, CS823 and CS824 Internal Registration Flow Capacities for 2 psig / 0.14 bar Setpoint for 1-1/2 in. / DN 40 Body Size at 20% Accuracy

| SETPOINT | ACCURACY: + / - 20% GAUGE | | SPRING | |
|----------|---------------------------|-----------|------------------|-------------------------|
| | Droop | Boost | Set Range | Part Number / Color |
| 2 psig | -0.40 psig | 0.40 psig | 1 to 2.5 psig | GE30342X012 / Dark Blue |
| 0.14 bar | -28 mbar | 28 mbar | 0.07 to 0.17 bar | |

| CAPACITIES IN SCFH / Nm ³ /h OF 0.6 SPECIFIC GRAVITY NATURAL GAS | | | | | | | | | | | | | | | | | |
|---|------|------------------------------|--------------------|-----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|--------|--------------------|---------------------------|--------------------|
| Inlet Pressure | | Orifice Size, In. / mm | | | | | | | | | | | | | | | |
| | | 1/4 / 6.4 | | 3/8 / 9.5 | | 1/2 / 13 | | 5/8 / 16 | | 3/4 / 19 | | 7/8 / 22 | | 1 / 25 | | 1-3/8 / 35 ⁽¹⁾ | |
| | | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h |
| psig | bar | Body Size: 1-1/2 in. / DN 40 | | | | | | | | | | | | | | | |
| 3 | 0.21 | 820 | 22.0 | 1420 | 38.1 | 1960 | 52.6 | 2830 | 76.0 | 3200 | 85.9 | 3950 | 106 | 4160 | 112 | 4620 | 124 |
| 5 | 0.34 | 1060 | 28.5 | 1860 | 49.9 | 3220 | 86.4 | 4200 | 113 | 5020 | 135 | 5920 | 159 | 6570 | 176 | 8000 | 215 |
| 10 | 0.69 | 1590 | 42.7 | 3120 | 83.8 | 5230 | 140 | 6870 | 184 | 7600 | 204 | 8410 | 226 | 9580 | 257 | 11,220 | 301 |
| 15 | 1.0 | 1990 | 53.4 | 4090 | 110 | 6970 | 187 | 8880 | 238 | 9820 | 264 | 10,200 | 274 | 11,520 | 309 | 11,790 | 317 |
| 20 | 1.4 | 2310 | 62.0 | 4880 | 131 | 8440 | 227 | 10,380 | 279 | 11,160 | 300 | 11,490 | 309 | 12,630 | 339 | | |
| 25 | 1.7 | 2680 | 71.9 | 5640 | 151 | 9630 | 259 | 11,480 | 308 | 12,480 | 335 | 12,130 | 326 | 13,570 | 364 | | |
| 30 | 2.1 | 2980 | 80.0 | 6340 | 170 | 10,670 | 286 | 12,360 | 332 | 12,960 | 348 | 12,990 | 349 | 13,920 | 374 | | |
| 40 | 2.8 | 3660 | 98.3 | 7850 | 211 | 12,140 | 326 | 14,150 | 380 | 14,240 | 382 | 13,470 | 362 | | | | |
| 50 | 3.4 | 4360 | 117 | 9260 | 249 | 13,460 | 361 | 14,190 | 381 | 14,920 | 401 | 14,280 | 383 | | | | |
| 60 | 4.1 | 5000 | 134 | 10,860 | 292 | 14,740 | 396 | 14,910 | 400 | 15,260 | 410 | 14,620 | 393 | | | | |
| 80 | 5.5 | 6400 | 172 | 13,710 | 368 | 15,440 | 415 | 15,440 | 415 | 15,440 | 415 | | | | | | |
| 100 | 6.9 | 7670 | 206 | 15,900 | 427 | 16,200 | 435 | | | | | | | | | | |
| 125 | 8.6 | 9410 | 253 | 16,080 | 432 | | | | | | | | | | | | |

Blank areas indicate where maximum operating inlet pressure for a given orifice size is exceeded.
 1. Not available on the Type CS823.

Table 36. Types CS820, CS823⁽¹⁾⁽²⁾ and CS824 Internal Registration Flow Capacities for 2 psig / 0.14 bar Setpoint for 2 in. / DN 50 Body Size at 20% Accuracy

| SETPOINT | ACCURACY: + / - 20% GAUGE | | SPRING | |
|----------|---------------------------|-----------|------------------|-------------------------|
| | Droop | Boost | Set Range | Part Number / Color |
| 2 psig | -0.40 psig | 0.40 psig | 1 to 2.5 psig | GE30342X012 / Dark Blue |
| 0.14 bar | -28 mbar | 28 mbar | 0.07 to 0.17 bar | |

| CAPACITIES IN SCFH / Nm ³ /h OF 0.6 SPECIFIC GRAVITY NATURAL GAS | | | | | | | | | | | | | | | | | |
|---|------|--------------------------|--------------------|-----------|--------------------|----------|--------------------|----------|--------------------|---------------------|---------------------|----------|--------------------|-----------------------|--------------------|------------------------------|--------------------|
| Inlet Pressure | | Orifice Size, In. / mm | | | | | | | | | | | | | | | |
| | | 1/4 / 6.4 | | 3/8 / 9.5 | | 1/2 / 13 | | 5/8 / 16 | | 3/4 / 19 | | 7/8 / 22 | | 1 / 25 ⁽¹⁾ | | 1-3/8 / 35 ⁽³⁾⁽⁴⁾ | |
| | | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h |
| psig | bar | Body Size: 2 in. / DN 50 | | | | | | | | | | | | | | | |
| 3 | 0.21 | 730 | 19.6 | 1280 | 34.4 | 2140 | 57.4 | 2890 | 77.6 | 3400 ⁽²⁾ | 91.3 ⁽²⁾ | 4190 | 113 | 4800 | 129 | 6490 | 174 |
| 5 | 0.34 | 1150 | 30.9 | 1960 | 52.6 | 3440 | 92.3 | 4380 | 118 | 5700 ⁽²⁾ | 153 ⁽²⁾ | 6770 | 182 | 7960 | 214 | 11,840 | 318 |
| 10 | 0.69 | 1610 | 43.2 | 3260 | 87.5 | 5790 | 155 | 7870 | 211 | 9930 | 267 | 11,840 | 318 | 13,680 | 367 | 18,160 | 488 |
| 15 | 1.0 | 1980 | 53.2 | 4200 | 113 | 7760 | 208 | 10,520 | 282 | 13,510 | 363 | 16,080 | 432 | 18,220 | 489 | 20,810 | 559 |
| 20 | 1.4 | 2330 | 62.6 | 4950 | 133 | 9250 | 248 | 12,990 | 349 | 16,570 | 445 | 19,760 | 531 | 20,610 | 553 | | |
| 25 | 1.7 | 2660 | 71.4 | 5710 | 153 | 10,560 | 284 | 15,060 | 404 | 19,630 | 527 | 22,340 | 600 | 23,530 | 632 | | |
| 30 | 2.1 | 2940 | 78.9 | 6300 | 169 | 11,890 | 319 | 17,290 | 464 | 21,870 | 587 | 24,500 | 658 | 25,180 | 676 | | |
| 40 | 2.8 | 3600 | 96.6 | 7950 | 213 | 14,880 | 400 | 21,370 | 574 | 24,710 | 663 | 28,610 | 768 | | | | |
| 50 | 3.4 | 4280 | 115 | 9200 | 247 | 17,600 | 473 | 24,860 | 667 | 27,290 | 733 | 29,870 | 802 | | | | |
| 60 | 4.1 | 4980 | 134 | 10,890 | 292 | 20,430 | 549 | 29,670 | 797 | 29,670 | 797 | 30,930 | 830 | | | | |
| 80 | 5.5 | 6310 | 169 | 13,710 | 368 | 25,880 | 695 | 32,240 | 866 | 32,240 | 866 | | | | | | |
| 100 | 6.9 | 7650 | 205 | 16,620 | 446 | 31,200 | 838 | | | | | | | | | | |
| 125 | 8.6 | 9360 | 251 | 20,220 | 543 | | | | | | | | | | | | |

1. Type CS823 exhibits a 10% reduction in capacity for indicated orifice size. Multiply listed values by a factor of 0.9.
 2. Due to droop, the Type CS823 exhibits a 15% reduction in capacity for indicated conditions. Multiply listed values by a factor of 0.85.
 3. Not available on the Type CS823.
 4. Type CS824 exhibits a 20% reduction in capacity for indicated orifice size. Multiply listed values by a factor of 0.8.

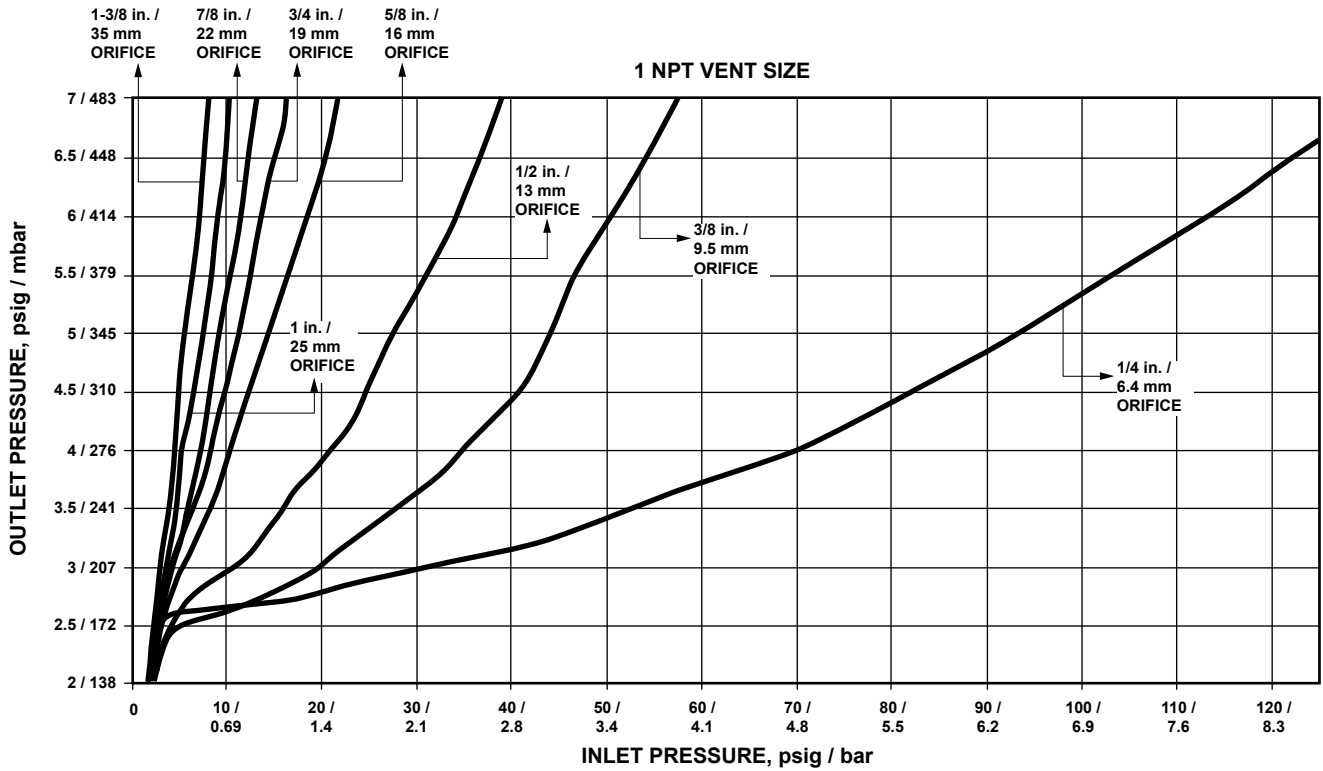


Figure 17. Type CS820IR Relief Curves (Blocked Open per Orifice Size) at 2 psig / 0.14 bar Set Pressure

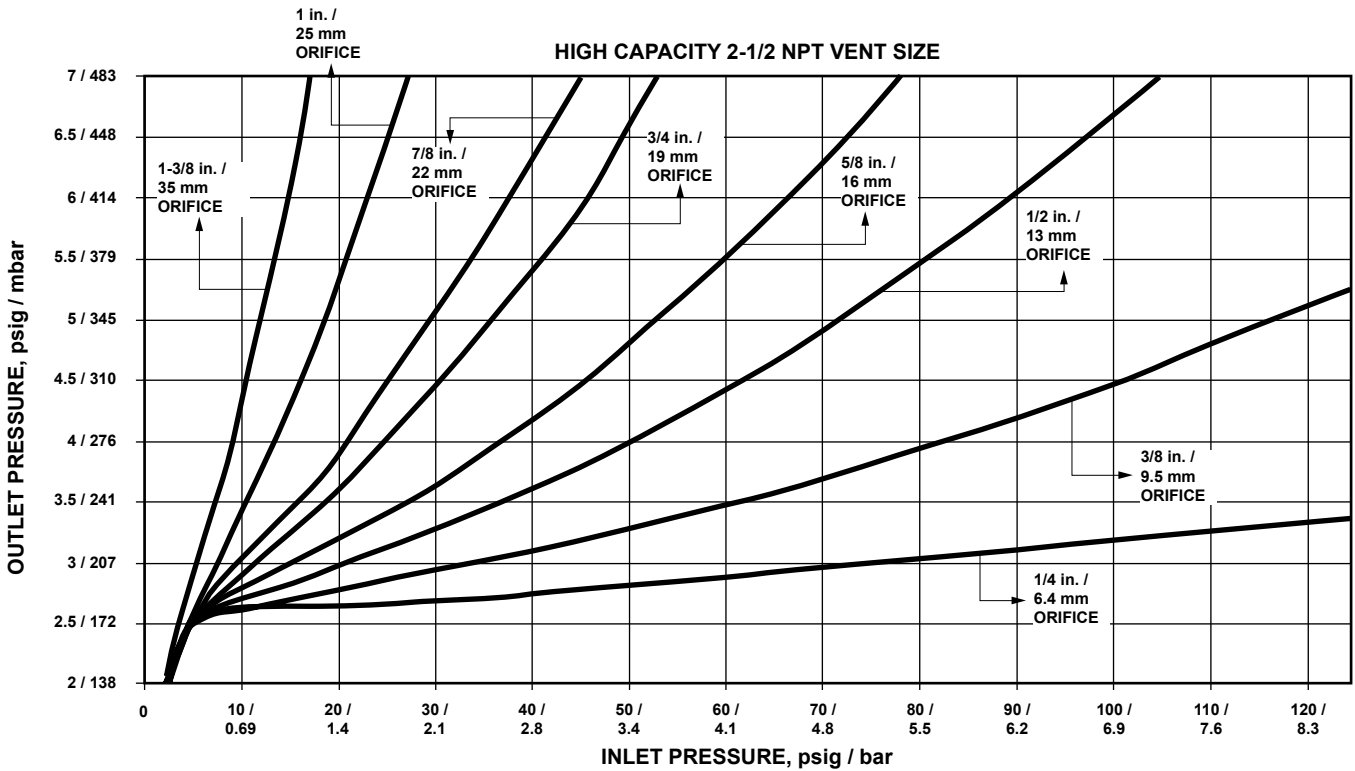


Figure 18. Type CS820IQ High Capacity Relief Curves (Blocked Open per Orifice Size) at 2 psig / 0.14 bar Set Pressure

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Table 37. Types CS820, CS823 and CS824 Internal Registration Flow Capacities for 5 psig / 0.34 bar Setpoint at 1% ABS Accuracy

| SETPOINT | ACCURACY: + / - 1% ABS | | SPRING | |
|----------|------------------------|-----------|------------------|----------------------|
| | Droop | Boost | Set Range | Part Number / Color |
| 5 psig | -0.20 psig | 0.20 psig | 2.5 to 5.5 psig | GE30343X012 / Yellow |
| 0.34 bar | -14 mbar | 14 mbar | 0.17 to 0.38 bar | |

| CAPACITIES IN SCFH / Nm ³ /h OF 0.6 SPECIFIC GRAVITY NATURAL GAS | | | | | | | | | | | | | | | | | |
|---|------|------------------------------|--------------------|-----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|--------|--------------------|---------------------------|--------------------|
| Inlet Pressure | | Orifice Size, In. / mm | | | | | | | | | | | | | | | |
| | | 1/4 / 6.4 | | 3/8 / 9.5 | | 1/2 / 13 | | 5/8 / 16 | | 3/4 / 19 | | 7/8 / 22 | | 1 / 25 | | 1-3/8 / 35 ⁽¹⁾ | |
| | | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h |
| psig | bar | Body Size: 1-1/2 in. / DN 40 | | | | | | | | | | | | | | | |
| 10 | 0.69 | 930 | 25.0 | 940 | 25.2 | 1290 | 34.6 | 1760 | 47.2 | 1910 | 51.3 | 2320 | 62.3 | 2390 | 64.2 | 3300 | 88.6 |
| 15 | 1.0 | 1220 | 32.8 | 1220 | 32.8 | 1810 | 48.6 | 2370 | 63.6 | 2660 | 71.4 | 2860 | 76.8 | 3570 | 95.8 | 4320 | 116 |
| 20 | 1.4 | 1590 | 42.7 | 1590 | 42.7 | 2250 | 60.4 | 2950 | 79.2 | 3110 | 83.5 | 3880 | 104 | 4580 | 123 | | |
| 25 | 1.7 | 1900 | 51 | 1900 | 51.0 | 2730 | 73.3 | 3570 | 95.8 | 3890 | 104 | 4370 | 117 | 5790 | 155 | | |
| 30 | 2.1 | 2160 | 58 | 2200 | 59.1 | 3150 | 84.6 | 4140 | 111 | 4290 | 115 | 5380 | 144 | 6200 | 166 | | |
| 40 | 2.8 | 2690 | 72 | 2760 | 74.1 | 3750 | 101 | 4980 | 134 | 5110 | 137 | 6560 | 176 | | | | |
| 50 | 3.4 | 3250 | 87 | 3310 | 88.9 | 4650 | 125 | 6190 | 166 | 6500 | 175 | 8020 | 215 | | | | |
| 60 | 4.1 | 3850 | 103 | 4160 | 112 | 5690 | 153 | 7090 | 190 | 7410 | 199 | 8780 | 236 | | | | |
| 80 | 5.5 | 5130 | 138 | 5290 | 142 | 7500 | 201 | 8570 | 230 | 9230 | 248 | | | | | | |
| 100 | 6.9 | 6100 | 164 | 6100 | 164 | 9000 | 242 | | | | | | | | | | |
| 125 | 8.6 | 7320 | 197 | 7430 | 200 | | | | | | | | | | | | |

Blank areas indicate where maximum operating inlet pressure for a given orifice size is exceeded.
 1. Not available on the Type CS823.

| SETPOINT | ACCURACY: + / - 1% ABS | | SPRING | |
|----------|------------------------|-----------|------------------|----------------------|
| | Droop | Boost | Set Range | Part Number / Color |
| 5 psig | -0.20 psig | 0.20 psig | 2.5 to 5.5 psig | GE30343X012 / Yellow |
| 0.34 bar | -14 mbar | 14 mbar | 0.17 to 0.38 bar | |

| CAPACITIES IN SCFH / Nm ³ /h OF 0.6 SPECIFIC GRAVITY NATURAL GAS | | | | | | | | | | | | | | | | | |
|---|------|--------------------------|--------------------|-----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|--------|--------------------|------------------------------|--------------------|
| Inlet Pressure | | Orifice Size, In. / mm | | | | | | | | | | | | | | | |
| | | 1/4 / 6.4 | | 3/8 / 9.5 | | 1/2 / 13 | | 5/8 / 16 | | 3/4 / 19 | | 7/8 / 22 | | 1 / 25 | | 1-3/8 / 35 ⁽¹⁾⁽²⁾ | |
| | | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h |
| psig | bar | Body Size: 2 in. / DN 50 | | | | | | | | | | | | | | | |
| 10 | 0.69 | 850 | 22.8 | 850 | 22.8 | 1270 | 34.1 | 1530 | 41.1 | 1900 | 51.0 | 2000 | 53.7 | 2390 | 64.2 | 3240 | 87.0 |
| 15 | 1.0 | 1150 | 30.9 | 1150 | 30.9 | 1920 | 51.5 | 2150 | 57.7 | 2790 | 74.9 | 2790 | 74.9 | 3750 | 101 | 5170 | 139 |
| 20 | 1.4 | 1490 | 40.0 | 1520 | 40.8 | 2390 | 64.2 | 2870 | 77.0 | 3360 | 90.2 | 3870 | 104 | 5030 | 135 | | |
| 25 | 1.7 | 1770 | 47.5 | 1770 | 47.5 | 2850 | 76.5 | 3350 | 89.9 | 4480 | 120 | 4480 | 120 | 6560 | 176 | | |
| 30 | 2.1 | 2020 | 54.2 | 2150 | 57.7 | 3470 | 93.2 | 4300 | 115 | 5060 | 136 | 5720 | 154 | 8010 | 215 | | |
| 40 | 2.8 | 2590 | 69.5 | 2900 | 77.9 | 4730 | 127 | 5780 | 155 | 7740 | 208 | 9120 | 245 | | | | |
| 50 | 3.4 | 3130 | 84.0 | 3630 | 97.4 | 6250 | 168 | 7200 | 193 | 9720 | 261 | 14,940 | 401 | | | | |
| 60 | 4.1 | 3460 | 92.9 | 4150 | 111 | 7950 | 213 | 8520 | 229 | 12,940 | 347 | 20,040 | 538 | | | | |
| 80 | 5.5 | 5070 | 136 | 5940 | 160 | 13,910 | 373 | 15,510 | 416 | 15,510 | 416 | | | | | | |
| 100 | 6.9 | 6800 | 183 | 8430 | 226 | 18,840 | 506 | | | | | | | | | | |
| 125 | 8.6 | 9090 | 244 | 15,390 | 413 | | | | | | | | | | | | |

Blank areas indicate where maximum operating inlet pressure for a given orifice size is exceeded.
 1. Not available on the Type CS823.
 2. Type CS824 exhibits a 20% reduction in capacity for indicated orifice size. Multiply listed values by a factor of 0.8.

Table 38. Types CS820, CS823 and CS824 Internal Registration Flow Capacities for 5 psig / 0.34 bar Setpoint at 2% ABS Accuracy

| SETPOINT | ACCURACY: + / - 2% ABS | | SPRING | |
|----------|------------------------|-----------|------------------|----------------------|
| | Droop | Boost | Set Range | Part Number / Color |
| 5 psig | -0.39 psig | 0.39 psig | 2.5 to 5.5 psig | GE30343X012 / Yellow |
| 0.34 bar | -27 mbar | 27 mbar | 0.17 to 0.38 bar | |

| CAPACITIES IN SCFH / Nm ³ /h OF 0.6 SPECIFIC GRAVITY NATURAL GAS | | | | | | | | | | | | | | | | | |
|---|------|------------------------------|--------------------|-----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|--------|--------------------|---------------------------|--------------------|
| Inlet Pressure | | Orifice Size, In. / mm | | | | | | | | | | | | | | | |
| | | 1/4 / 6.4 | | 3/8 / 9.5 | | 1/2 / 13 | | 5/8 / 16 | | 3/4 / 19 | | 7/8 / 22 | | 1 / 25 | | 1-3/8 / 35 ⁽¹⁾ | |
| | | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h |
| psig | bar | Body Size: 1-1/2 in. / DN 40 | | | | | | | | | | | | | | | |
| 10 | 0.69 | 1360 | 36.5 | 1600 | 43.0 | 2170 | 58.3 | 2940 | 78.9 | 3480 | 93.4 | 3780 | 102 | 4560 | 122 | 5730 | 154 |
| 15 | 1.0 | 1890 | 50.7 | 2120 | 56.9 | 3140 | 84.3 | 4170 | 112 | 5030 | 135 | 5710 | 153 | 6760 | 182 | 7550 | 203 |
| 20 | 1.4 | 2210 | 59.3 | 2820 | 75.7 | 3960 | 106 | 5240 | 141 | 6010 | 161 | 7140 | 192 | 8240 | 221 | | |
| 25 | 1.7 | 2520 | 67.7 | 3250 | 87.2 | 4880 | 131 | 6150 | 165 | 7290 | 196 | 7670 | 206 | 9890 | 266 | | |
| 30 | 2.1 | 2660 | 71.4 | 3830 | 103 | 5290 | 142 | 7400 | 199 | 8040 | 216 | 8930 | 240 | 10,850 | 291 | | |
| 40 | 2.8 | 3370 | 90.5 | 5000 | 134 | 7010 | 188 | 8740 | 235 | 9440 | 253 | 11,050 | 297 | | | | |
| 50 | 3.4 | 3990 | 107 | 5870 | 158 | 8470 | 227 | 10,000 | 269 | 11,420 | 307 | 12,550 | 337 | | | | |
| 60 | 4.1 | 4910 | 132 | 7150 | 192 | 9430 | 253 | 11,230 | 302 | 12,620 | 339 | 13,220 | 355 | | | | |
| 80 | 5.5 | 6180 | 166 | 9260 | 249 | 11,910 | 320 | 13,760 | 369 | 14,570 | 391 | | | | | | |
| 100 | 6.9 | 7610 | 204 | 10,620 | 285 | 13,920 | 374 | | | | | | | | | | |
| 125 | 8.6 | 9160 | 246 | 11,740 | 315 | | | | | | | | | | | | |

Blank areas indicate where maximum operating inlet pressure for a given orifice size is exceeded.
 1. Not available on the Type CS823.

| SETPOINT | ACCURACY: + / - 2% ABS | | SPRING | |
|----------|------------------------|-----------|------------------|----------------------|
| | Droop | Boost | Set Range | Part Number / Color |
| 5 psig | -0.39 psig | 0.39 psig | 2.5 to 5.5 psig | GE30343X012 / Yellow |
| 0.34 bar | -27 mbar | 27 mbar | 0.17 to 0.38 bar | |

| CAPACITIES IN SCFH / Nm ³ /h OF 0.6 SPECIFIC GRAVITY NATURAL GAS | | | | | | | | | | | | | | | | | |
|---|------|--------------------------|--------------------|-----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|--------|--------------------|------------------------------|--------------------|
| Inlet Pressure | | Orifice Size, In. / mm | | | | | | | | | | | | | | | |
| | | 1/4 / 6.4 | | 3/8 / 9.5 | | 1/2 / 13 | | 5/8 / 16 | | 3/4 / 19 | | 7/8 / 22 | | 1 / 25 | | 1-3/8 / 35 ⁽¹⁾⁽²⁾ | |
| | | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h |
| psig | bar | Body Size: 2 in. / DN 50 | | | | | | | | | | | | | | | |
| 10 | 0.69 | 1120 | 30.1 | 1540 | 41.3 | 2330 | 62.6 | 2870 | 77.0 | 3840 | 103 | 3880 | 104 | 5060 | 136 | 6180 | 166 |
| 15 | 1.0 | 1820 | 48.9 | 1950 | 52.3 | 3410 | 91.5 | 4020 | 108 | 5440 | 146 | 5830 | 157 | 7730 | 208 | 10,160 | 273 |
| 20 | 1.4 | 2250 | 60.4 | 2730 | 73.3 | 4380 | 118 | 5510 | 148 | 7550 | 203 | 8580 | 230 | 10,870 | 292 | | |
| 25 | 1.7 | 2540 | 68.2 | 3330 | 89.4 | 5560 | 149 | 6650 | 179 | 8550 | 230 | 10,580 | 284 | 13,260 | 356 | | |
| 30 | 2.1 | 2930 | 78.7 | 4050 | 109 | 6360 | 171 | 8380 | 225 | 10,580 | 284 | 13,250 | 356 | 16,600 | 446 | | |
| 40 | 2.8 | 3600 | 96.6 | 5280 | 142 | 8830 | 237 | 11,870 | 319 | 14,770 | 397 | 16,120 | 433 | | | | |
| 50 | 3.4 | 4270 | 115 | 6430 | 173 | 12,330 | 331 | 15,450 | 415 | 17,460 | 469 | 21,810 | 586 | | | | |
| 60 | 4.1 | 4890 | 131 | 8470 | 227 | 15,400 | 413 | 19,500 | 524 | 20,660 | 555 | 25,170 | 676 | | | | |
| 80 | 5.5 | 6240 | 168 | 12,210 | 328 | 21,390 | 574 | 23,340 | 627 | 23,340 | 661 | | | | | | |
| 100 | 6.9 | 7590 | 204 | 15,980 | 429 | 25,630 | 688 | | | | | | | | | | |
| 125 | 8.6 | 9350 | 251 | 19,730 | 530 | | | | | | | | | | | | |

Blank areas indicate where maximum operating inlet pressure for a given orifice size is exceeded.
 1. Not available on the Type CS823.
 2. Type CS824 exhibits a 20% reduction in capacity for indicated orifice size. Multiply listed values by a factor of 0.8.

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Table 39. Types CS820, CS823 and CS824 Internal Registration Flow Capacities for 5 psig / 0.34 bar Setpoint at 10% Accuracy

| SETPOINT | ACCURACY: + / - 10% GAUGE | | SPRING | |
|----------|---------------------------|-----------|------------------|----------------------|
| | Drop | Boost | Set Range | Part Number / Color |
| 5 psig | -0.50 psig | 0.50 psig | 2.5 to 5.5 psig | GE30343X012 / Yellow |
| 0.34 bar | -34 mbar | 34 mbar | 0.17 to 0.38 bar | |

| CAPACITIES IN SCFH / Nm ³ /h OF 0.6 SPECIFIC GRAVITY NATURAL GAS | | | | | | | | | | | | | | | | | |
|---|------|------------------------------|--------------------|-----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|--------|--------------------|---------------------------|--------------------|
| Inlet Pressure | | Orifice Size, In. / mm | | | | | | | | | | | | | | | |
| | | 1/4 / 6.4 | | 3/8 / 9.5 | | 1/2 / 13 | | 5/8 / 16 | | 3/4 / 19 | | 7/8 / 22 | | 1 / 25 | | 1-3/8 / 35 ⁽¹⁾ | |
| | | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h |
| psig | bar | Body Size: 1-1/2 in. / DN 40 | | | | | | | | | | | | | | | |
| 10 | 0.69 | 1450 | 38.9 | 1870 | 50.2 | 2650 | 71.1 | 3640 | 97.7 | 4170 | 112 | 5190 | 139 | 5760 | 155 | 7240 | 194 |
| 15 | 1.0 | 1910 | 51.3 | 2640 | 70.9 | 3920 | 105 | 5070 | 136 | 6050 | 162 | 6970 | 187 | 7960 | 214 | 9410 | 253 |
| 20 | 1.4 | 2260 | 60.7 | 3440 | 92.3 | 4910 | 132 | 6530 | 175 | 7520 | 202 | 8800 | 236 | 9670 | 260 | | |
| 25 | 1.7 | 2640 | 70.9 | 4060 | 109 | 5920 | 159 | 7510 | 202 | 8570 | 230 | 9620 | 258 | 11,320 | 304 | | |
| 30 | 2.1 | 2710 | 72.8 | 4700 | 126 | 6690 | 180 | 8750 | 235 | 9900 | 266 | 10,670 | 286 | 12,160 | 326 | | |
| 40 | 2.8 | 3410 | 91.5 | 6000 | 161 | 8000 | 215 | 10,100 | 271 | 11,330 | 304 | 13,220 | 355 | | | | |
| 50 | 3.4 | 4100 | 110 | 7260 | 195 | 10,070 | 270 | 11,540 | 310 | 13,030 | 350 | 14,920 | 401 | | | | |
| 60 | 4.1 | 4950 | 133 | 8610 | 231 | 11,250 | 302 | 12,880 | 346 | 14,220 | 382 | 15,630 | 420 | | | | |
| 80 | 5.5 | 6260 | 168 | 10,690 | 287 | 13,890 | 373 | 15,400 | 413 | 16,290 | 437 | | | | | | |
| 100 | 6.9 | 7660 | 206 | 12,590 | 338 | 15,980 | 429 | | | | | | | | | | |
| 125 | 8.6 | 9300 | 250 | 14,860 | 399 | | | | | | | | | | | | |

Blank areas indicate where maximum operating inlet pressure for a given orifice size is exceeded.
 1. Not available on the Type CS823.

| SETPOINT | ACCURACY: + / - 10% GAUGE | | SPRING | |
|----------|---------------------------|-----------|------------------|----------------------|
| | Drop | Boost | Set Range | Part Number / Color |
| 5 psig | -0.50 psig | 0.50 psig | 2.5 to 5.5 psig | GE30343X012 / Yellow |
| 0.34 bar | -34 mbar | 34 mbar | 0.17 to 0.38 bar | |

| CAPACITIES IN SCFH / Nm ³ /h OF 0.6 SPECIFIC GRAVITY NATURAL GAS | | | | | | | | | | | | | | | | | |
|---|------|--------------------------|--------------------|-----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|--------|--------------------|------------------------------|--------------------|
| Inlet Pressure | | Orifice Size, In. / mm | | | | | | | | | | | | | | | |
| | | 1/4 / 6.4 | | 3/8 / 9.5 | | 1/2 / 13 | | 5/8 / 16 | | 3/4 / 19 | | 7/8 / 22 | | 1 / 25 | | 1-3/8 / 35 ⁽¹⁾⁽²⁾ | |
| | | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h |
| psig | bar | Body Size: 2 in. / DN 50 | | | | | | | | | | | | | | | |
| 10 | 0.69 | 1280 | 34.4 | 1880 | 50.5 | 2940 | 78.9 | 3530 | 94.8 | 4830 | 130 | 4970 | 133 | 6060 | 163 | 7680 | 206 |
| 15 | 1.0 | 1880 | 50.5 | 2410 | 64.7 | 4310 | 116 | 5160 | 139 | 7240 | 194 | 7610 | 204 | 9790 | 263 | 12,150 | 326 |
| 20 | 1.4 | 2300 | 61.7 | 3310 | 88.9 | 5610 | 151 | 6900 | 185 | 9230 | 248 | 10,390 | 279 | 12,770 | 343 | | |
| 25 | 1.7 | 2660 | 71.4 | 4200 | 113 | 7040 | 189 | 8220 | 221 | 10,950 | 294 | 12,690 | 341 | 15,480 | 416 | | |
| 30 | 2.1 | 2950 | 79.2 | 4990 | 134 | 8220 | 221 | 10,580 | 284 | 13,060 | 351 | 14,810 | 398 | 19,260 | 517 | | |
| 40 | 2.8 | 3640 | 97.7 | 6360 | 171 | 11,080 | 297 | 14,630 | 393 | 17,710 | 475 | 20,120 | 540 | | | | |
| 50 | 3.4 | 4280 | 115 | 8000 | 215 | 14,370 | 386 | 18,760 | 504 | 21,200 | 569 | 23,760 | 638 | | | | |
| 60 | 4.1 | 4940 | 133 | 9900 | 266 | 17,590 | 472 | 21,760 | 584 | 23,760 | 638 | 27,480 | 738 | | | | |
| 80 | 5.5 | 6290 | 169 | 13,260 | 356 | 22,900 | 615 | 27,200 | 730 | 27,200 | 730 | | | | | | |
| 100 | 6.9 | 7650 | 205 | 16,380 | 440 | 28,030 | 753 | | | | | | | | | | |
| 125 | 8.6 | 9390 | 252 | 20,030 | 538 | | | | | | | | | | | | |

Blank areas indicate where maximum operating inlet pressure for a given orifice size is exceeded.
 1. Not available on the Type CS823.
 2. Type CS824 exhibits a 20% reduction in capacity for indicated orifice size. Multiply listed values by a factor of 0.8.

Table 40. Types CS820, CS823 and CS824 Internal Registration Flow Capacities for 5 psig / 0.34 bar Setpoint at 20% Accuracy

| SETPOINT | ACCURACY: + / - 20% GAUGE | | SPRING | |
|----------|---------------------------|----------|------------------|----------------------|
| | Drop | Boost | Set Range | Part Number / Color |
| 5 psig | -1.0 psig | 1.0 psig | 2.5 to 5.5 psig | GE30343X012 / Yellow |
| 0.34 bar | -69 mbar | 69 mbar | 0.17 to 0.38 bar | |

| CAPACITIES IN SCFH / Nm ³ /h OF 0.6 SPECIFIC GRAVITY NATURAL GAS | | | | | | | | | | | | | | | | | |
|---|------|------------------------------|--------------------|-----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|--------|--------------------|---------------------------|--------------------|
| Inlet Pressure | | Orifice Size, In. / mm | | | | | | | | | | | | | | | |
| | | 1/4 / 6.4 | | 3/8 / 9.5 | | 1/2 / 13 | | 5/8 / 16 | | 3/4 / 19 | | 7/8 / 22 | | 1 / 25 | | 1-3/8 / 35 ⁽¹⁾ | |
| | | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h |
| psig | bar | Body Size: 1-1/2 in. / DN 40 | | | | | | | | | | | | | | | |
| 10 | 0.69 | 1530 | 41.1 | 2710 | 72.8 | 4370 | 117 | 5880 | 158 | 6680 | 179 | 8470 | 227 | 9740 | 262 | 12,040 | 323 |
| 15 | 1.0 | 1960 | 52.6 | 3750 | 101 | 6250 | 168 | 7870 | 211 | 9620 | 258 | 11,330 | 304 | 12,580 | 338 | 15,210 | 408 |
| 20 | 1.4 | 2310 | 62.0 | 4720 | 127 | 7850 | 211 | 10,140 | 272 | 11,480 | 308 | 13,870 | 372 | 14,580 | 391 | | |
| 25 | 1.7 | 2640 | 70.9 | 5520 | 148 | 9360 | 251 | 10,840 | 291 | 13,070 | 351 | 15,030 | 404 | 16,530 | 444 | | |
| 30 | 2.1 | 2880 | 77.3 | 6390 | 172 | 10,570 | 284 | 12,760 | 343 | 14,620 | 393 | 16,620 | 446 | 16,990 | 456 | | |
| 40 | 2.8 | 3560 | 95.6 | 7870 | 211 | 12,500 | 336 | 15,170 | 407 | 16,890 | 453 | 19,270 | 517 | | | | |
| 50 | 3.4 | 4240 | 114 | 9360 | 251 | 14,840 | 398 | 16,650 | 447 | 18,310 | 492 | 21,270 | 571 | | | | |
| 60 | 4.1 | 4950 | 133 | 11,000 | 295 | 16,380 | 440 | 17,530 | 471 | 19,970 | 536 | 22,640 | 608 | | | | |
| 80 | 5.5 | 6310 | 169 | 13,840 | 372 | 19,090 | 513 | 20,400 | 548 | 22,710 | 610 | | | | | | |
| 100 | 6.9 | 7690 | 206 | 16,280 | 437 | 21,380 | 574 | | | | | | | | | | |
| 125 | 8.6 | 9390 | 252 | 19,280 | 518 | | | | | | | | | | | | |

Blank areas indicate where maximum operating inlet pressure for a given orifice size is exceeded.
 1. Not available on the Type CS823.

| SETPOINT | ACCURACY: + / - 20% GAUGE | | SPRING | |
|----------|---------------------------|----------|------------------|----------------------|
| | Drop | Boost | Set Range | Part Number / Color |
| 5 psig | -1.0 psig | 1.0 psig | 2.5 to 5.5 psig | GE30343X012 / Yellow |
| 0.34 bar | -69 mbar | 69 mbar | 0.17 to 0.38 bar | |

| CAPACITIES IN SCFH / Nm ³ /h OF 0.6 SPECIFIC GRAVITY NATURAL GAS | | | | | | | | | | | | | | | | | |
|---|------|--------------------------|--------------------|-----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|--------|--------------------|------------------------------|--------------------|
| Inlet Pressure | | Orifice Size, In. / mm | | | | | | | | | | | | | | | |
| | | 1/4 / 6.4 | | 3/8 / 9.5 | | 1/2 / 13 | | 5/8 / 16 | | 3/4 / 19 | | 7/8 / 22 | | 1 / 25 | | 1-3/8 / 35 ⁽¹⁾⁽²⁾ | |
| | | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h |
| psig | bar | Body Size: 2 in. / DN 50 | | | | | | | | | | | | | | | |
| 10 | 0.69 | 1500 | 40.3 | 2840 | 76.2 | 4780 | 128 | 5970 | 160 | 8000 | 215 | 9400 | 252 | 10,550 | 283 | 13,590 | 365 |
| 15 | 1.0 | 1970 | 52.9 | 3870 | 104 | 6960 | 187 | 8540 | 229 | 11,770 | 316 | 12,740 | 342 | 15,830 | 425 | 19,260 | 517 |
| 20 | 1.4 | 2330 | 62.6 | 4700 | 126 | 8600 | 231 | 10,760 | 289 | 14,810 | 398 | 16,600 | 446 | 19,810 | 532 | | |
| 25 | 1.7 | 2660 | 71.4 | 5700 | 153 | 10,060 | 270 | 13,260 | 356 | 17,350 | 466 | 19,690 | 529 | 21,840 | 586 | | |
| 30 | 2.1 | 2970 | 79.7 | 6500 | 175 | 11,660 | 313 | 15,530 | 417 | 20,540 | 551 | 20,950 | 562 | 24,770 | 665 | | |
| 40 | 2.8 | 3670 | 98.5 | 7910 | 212 | 14,470 | 389 | 20,460 | 549 | 24,480 | 657 | 25,870 | 695 | | | | |
| 50 | 3.4 | 4320 | 116 | 9340 | 251 | 17,690 | 475 | 23,180 | 622 | 29,880 | 802 | 30,750 | 826 | | | | |
| 60 | 4.1 | 5010 | 135 | 11,120 | 299 | 20,100 | 540 | 27,820 | 747 | 31,780 | 853 | 33,840 | 909 | | | | |
| 80 | 5.5 | 6340 | 170 | 13,740 | 369 | 25,800 | 693 | 34,910 | 937 | 36,270 | 974 | | | | | | |
| 100 | 6.9 | 7710 | 207 | 16,900 | 454 | 31,450 | 844 | | | | | | | | | | |
| 125 | 8.6 | 9410 | 253 | 20,580 | 553 | | | | | | | | | | | | |

Blank areas indicate where maximum operating inlet pressure for a given orifice size is exceeded.
 1. Not available on the Type CS823.
 2. Type CS824 exhibits a 20% reduction in capacity for indicated orifice size. Multiply listed values by a factor of 0.8.

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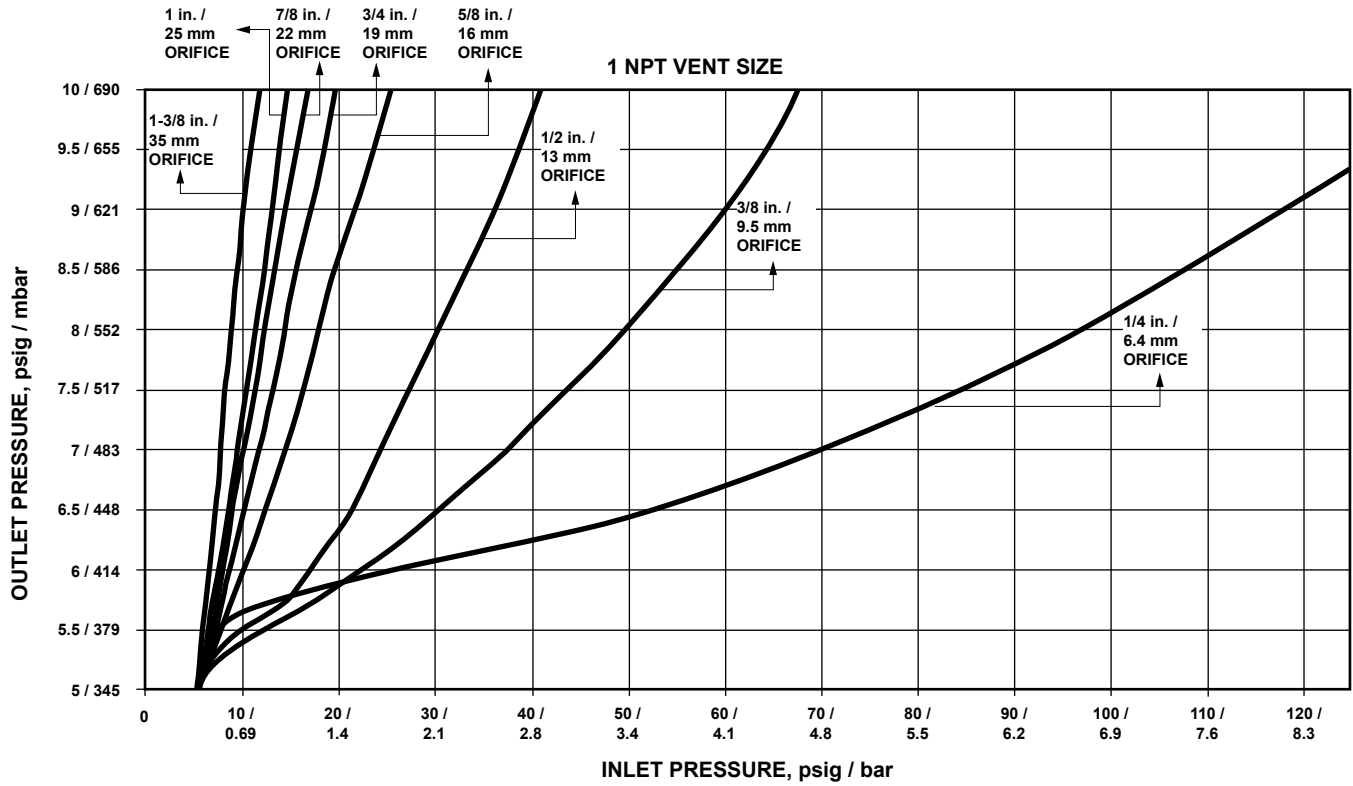


Figure 19. Type CS820IR Relief Curves (Blocked Open per Orifice Size) at 5 psig / 0.34 bar Set Pressure

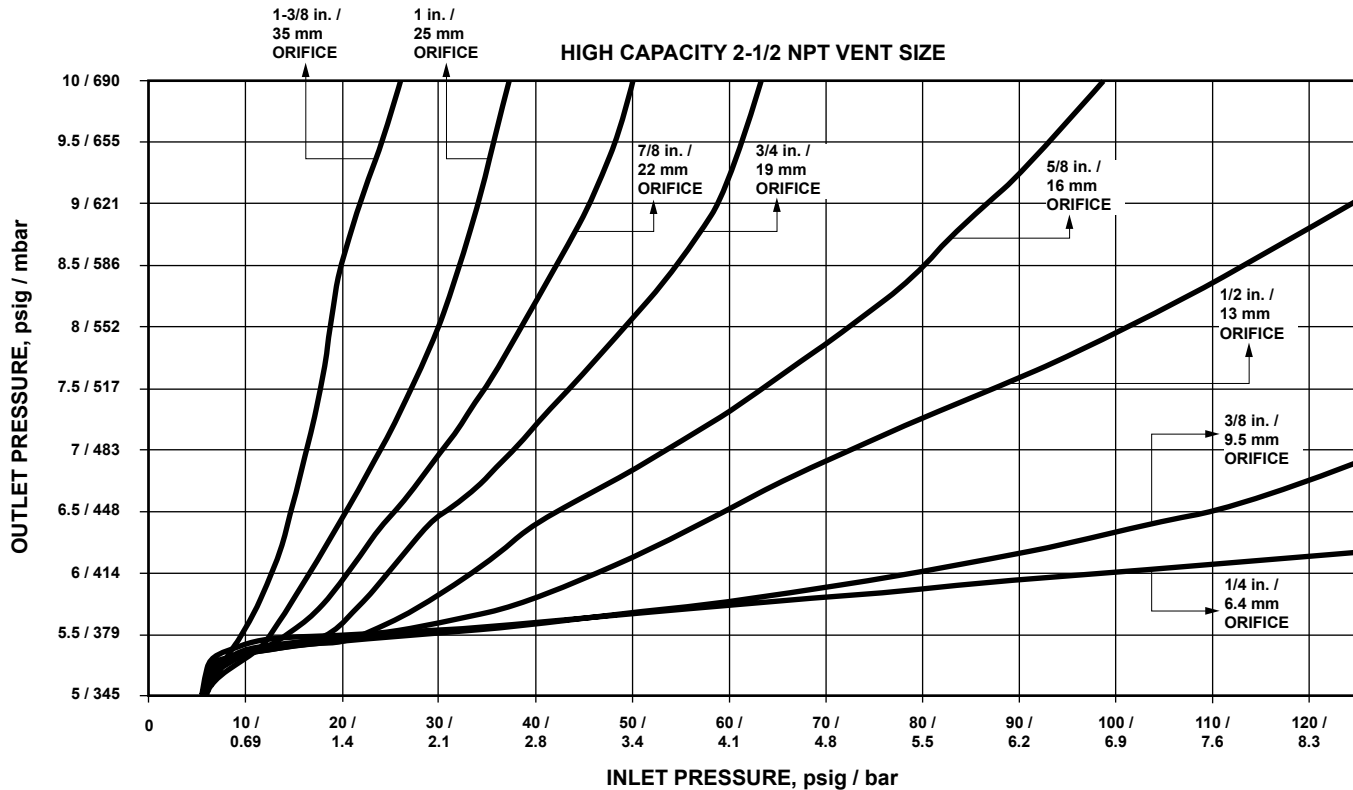


Figure 20. Type CS820IQ High Capacity Relief Curves (Blocked Open per Orifice Size) at 5 psig / 0.34 bar Set Pressure

Table 41. Types CS850 and CS854 Internal Registration Flow Capacities for 7 psig / 0.48 bar Setpoint at 10% Accuracy

| SETPOINT | ACCURACY: + / - 10% GAUGE | | SPRING | |
|----------|---------------------------|----------|-----------------|---------------------------------------|
| | Droop | Boost | Set Range | Part Number / Color |
| 7 psig | -0.7 psig | 0.7 psig | 5 to 10 psig | GE30344X012 / Green with White Stripe |
| 0.48 bar | -48 mbar | 48 mbar | 345 to 690 mbar | |

| CAPACITIES IN SCFH / Nm ³ /h OF 0.6 SPECIFIC GRAVITY NATURAL GAS | | | | | | | | | | | | | | | | | |
|---|------|------------------------------|--------------------|-----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|--------|--------------------|------------|--------------------|
| Inlet Pressure | | Orifice Size, In. / mm | | | | | | | | | | | | | | | |
| | | 1/4 / 6.4 | | 3/8 / 9.5 | | 1/2 / 13 | | 5/8 / 16 | | 3/4 / 19 | | 7/8 / 22 | | 1 / 25 | | 1-3/8 / 35 | |
| | | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h |
| psig | bar | Body Size: 1-1/2 in. / DN 40 | | | | | | | | | | | | | | | |
| 10 | 0.69 | 1140 | 30.6 | 1250 | 33.6 | 1710 | 45.9 | 2030 | 54.5 | 2550 | 68.5 | 3140 | 84.3 | 3370 | 90.5 | 4290 | 115 |
| 15 | 1.0 | 1590 | 42.7 | 1810 | 48.6 | 2660 | 71.4 | 3150 | 84.6 | 3840 | 103 | 4490 | 121 | 5480 | 147 | 6860 | 184 |
| 20 | 1.4 | 2010 | 54.0 | 2460 | 66.0 | 3400 | 91.3 | 4170 | 112 | 4590 | 123 | 5710 | 153 | 6740 | 181 | | |
| 25 | 1.7 | 2400 | 64.4 | 2980 | 80.0 | 4190 | 113 | 5030 | 135 | 5970 | 160 | 6790 | 182 | 7800 | 209 | | |
| 30 | 2.1 | 2750 | 73.8 | 3450 | 92.6 | 4800 | 129 | 5840 | 157 | 7050 | 189 | 7890 | 212 | 9070 | 244 | | |
| 40 | 2.8 | 3420 | 91.8 | 4380 | 118 | 6180 | 166 | 7350 | 197 | 8310 | 223 | 9760 | 262 | | | | |
| 50 | 3.4 | 3990 | 107 | 5270 | 142 | 7450 | 200 | 8900 | 239 | 11,530 | 310 | 11,530 | 310 | | | | |
| 60 | 4.1 | 4730 | 127 | 6220 | 167 | 8470 | 227 | 10,410 | 280 | 11,550 | 310 | 13,300 | 357 | | | | |
| 80 | 5.5 | 5950 | 160 | 7700 | 207 | 11,070 | 297 | 13,150 | 353 | 15,300 | 411 | | | | | | |
| 100 | 6.9 | 7300 | 196 | 9480 | 255 | 12,400 | 333 | | | | | | | | | | |
| 125 | 8.6 | 8660 | 233 | 11,250 | 302 | | | | | | | | | | | | |
| psig | bar | Body Size: 2 in. / DN 50 | | | | | | | | | | | | | | | |
| 10 | 0.69 | 750 | 20.1 | 1290 | 34.6 | 1750 | 47.0 | 2140 | 57.4 | 2640 | 70.9 | 3170 | 85.1 | 3550 | 95.3 | 4540 | 122 |
| 15 | 1.0 | 1710 | 45.9 | 1950 | 52.3 | 2740 | 73.6 | 3530 | 94.8 | 4050 | 109 | 4750 | 128 | 5860 | 157 | 7640 | 205 |
| 20 | 1.4 | 2150 | 57.7 | 2500 | 67.1 | 3440 | 92.3 | 4470 | 120 | 5500 | 148 | 6600 | 177 | 7850 | 211 | | |
| 25 | 1.7 | 2380 | 63.9 | 3070 | 82.4 | 4190 | 113 | 5390 | 145 | 6150 | 165 | 8150 | 219 | 9360 | 251 | | |
| 30 | 2.1 | 2870 | 77.0 | 3570 | 95.8 | 4900 | 132 | 6300 | 169 | 7430 | 200 | 9980 | 268 | 11,640 | 313 | | |
| 40 | 2.8 | 3540 | 95.0 | 4630 | 124 | 6570 | 176 | 8610 | 231 | 10,430 | 280 | 12,830 | 344 | | | | |
| 50 | 3.4 | 4210 | 113 | 5530 | 149 | 7570 | 203 | 10,550 | 283 | 12,380 | 332 | 16,070 | 431 | | | | |
| 60 | 4.1 | 4790 | 129 | 6690 | 180 | 9970 | 268 | 12,780 | 343 | 14,680 | 394 | 19,320 | 519 | | | | |
| 80 | 5.5 | 6070 | 163 | 8740 | 235 | 14,170 | 380 | 16,720 | 449 | 17,930 | 481 | | | | | | |
| 100 | 6.9 | 7690 | 206 | 11,310 | 304 | 18,060 | 485 | | | | | | | | | | |
| 125 | 8.6 | 9220 | 248 | 14,520 | 390 | | | | | | | | | | | | |

Blank areas indicate where maximum operating inlet pressure for a given orifice size is exceeded.

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Table 42. Types CS850 and CS854 Internal Registration Flow Capacities for 7 psig / 0.48 bar Setpoint at 20% Accuracy

| SETPOINT | | ACCURACY: + / - 20% GAUGE | | SPRING | | | |
|----------|--|---------------------------|----------|-----------------|--|---------------------------------------|--|
| | | Droop | Boost | Set Range | | Part Number / Color | |
| 7 psig | | -1.4 psig | 1.4 psig | 5 to 10 psig | | GE30344X012 / Green with White Stripe | |
| 0.48 bar | | -0.10 bar | 0.10 bar | 345 to 690 mbar | | | |

| CAPACITIES IN SCFH / Nm ³ /h OF 0.6 SPECIFIC GRAVITY NATURAL GAS | | | | | | | | | | | | | | | | | |
|---|------|------------------------------|--------------------|-----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|--------|--------------------|------------|--------------------|
| Inlet Pressure | | Orifice Size, In. / mm | | | | | | | | | | | | | | | |
| | | 1/4 / 6.4 | | 3/8 / 9.5 | | 1/2 / 13 | | 5/8 / 16 | | 3/4 / 19 | | 7/8 / 22 | | 1 / 25 | | 1-3/8 / 35 | |
| | | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h |
| psig | bar | Body Size: 1-1/2 in. / DN 40 | | | | | | | | | | | | | | | |
| 10 | 0.69 | 1350 | 36.2 | 2090 | 56.1 | 3100 | 83.2 | 3850 | 103 | 4760 | 128 | 5780 | 155 | 6270 | 168 | 8620 | 231 |
| 15 | 1.0 | 1870 | 50.2 | 3060 | 82.1 | 4780 | 128 | 5830 | 157 | 6990 | 188 | 8540 | 229 | 9610 | 258 | 12,270 | 329 |
| 20 | 1.4 | 2190 | 58.8 | 3930 | 106 | 5970 | 160 | 7450 | 200 | 8850 | 238 | 10,690 | 287 | 12,280 | 330 | | |
| 25 | 1.7 | 2550 | 68.5 | 4810 | 129 | 7400 | 199 | 8970 | 241 | 10,630 | 285 | 12,880 | 346 | 13,610 | 365 | | |
| 30 | 2.1 | 2900 | 77.9 | 5520 | 148 | 8440 | 227 | 10,320 | 277 | 12,400 | 333 | 14,340 | 385 | 15,400 | 413 | | |
| 40 | 2.8 | 3610 | 96.9 | 7030 | 189 | 10,610 | 285 | 12,970 | 348 | 15,010 | 403 | 17,140 | 460 | | | | |
| 50 | 3.4 | 4260 | 114 | 8370 | 225 | 12,500 | 336 | 15,010 | 403 | 18,020 | 484 | 19,120 | 513 | | | | |
| 60 | 4.1 | 4880 | 131 | 9850 | 264 | 14,320 | 384 | 16,940 | 455 | 19,130 | 514 | 20,780 | 558 | | | | |
| 80 | 5.5 | 6250 | 168 | 12,680 | 340 | 17,670 | 474 | 19,700 | 529 | 21,670 | 582 | | | | | | |
| 100 | 6.9 | 7610 | 204 | 15,170 | 407 | 19,700 | 529 | | | | | | | | | | |
| 125 | 8.6 | 9290 | 249 | 17,740 | 476 | | | | | | | | | | | | |
| psig | bar | Body Size: 2 in. / DN 50 | | | | | | | | | | | | | | | |
| 10 | 0.69 | 1070 | 28.7 | 2230 | 59.9 | 3160 | 84.8 | 4040 | 109 | 4980 | 134 | 5880 | 158 | 6910 | 186 | 8860 | 238 |
| 15 | 1.0 | 1820 | 48.9 | 3180 | 85.4 | 4610 | 124 | 6210 | 167 | 7360 | 198 | 9080 | 244 | 10,790 | 290 | 14,360 | 386 |
| 20 | 1.4 | 2300 | 61.7 | 4110 | 110 | 6040 | 162 | 8060 | 216 | 9940 | 267 | 11,680 | 314 | 13,270 | 356 | | |
| 25 | 1.7 | 2640 | 70.9 | 4970 | 133 | 7490 | 201 | 10,160 | 273 | 11,780 | 316 | 13,930 | 374 | 16,610 | 446 | | |
| 30 | 2.1 | 2990 | 80.3 | 5710 | 153 | 8680 | 233 | 11,550 | 310 | 14,060 | 377 | 16,300 | 438 | 19,820 | 532 | | |
| 40 | 2.8 | 3670 | 98.5 | 7360 | 198 | 11,440 | 307 | 14,910 | 400 | 18,130 | 487 | 21,300 | 572 | | | | |
| 50 | 3.4 | 4350 | 117 | 8840 | 237 | 13,780 | 370 | 18,390 | 494 | 21,560 | 579 | 25,210 | 677 | | | | |
| 60 | 4.1 | 5010 | 135 | 10,560 | 284 | 17,310 | 465 | 21,630 | 581 | 25,080 | 673 | 28,560 | 767 | | | | |
| 80 | 5.5 | 6320 | 170 | 13,510 | 363 | 22,290 | 598 | 25,840 | 694 | 27,620 | 742 | | | | | | |
| 100 | 6.9 | 7750 | 208 | 16,590 | 445 | 26,950 | 724 | | | | | | | | | | |
| 125 | 8.6 | 9400 | 252 | 19,680 | 528 | | | | | | | | | | | | |

Blank areas indicate where maximum operating inlet pressure for a given orifice size is exceeded.

Table 43. Types CS850 and CS854 Internal Registration Flow Capacities for 10 psig / 0.69 bar Setpoint at 10% Accuracy

| SETPOINT | | ACCURACY: +/- 10% GAUGE | | SPRING | | | |
|----------|--|-------------------------|-----------|-----------------|--|---------------------------------------|--|
| | | Droop | Boost | Set Range | | Part Number / Color | |
| 10 psig | | -1 psig | 1 psig | 5 to 10 psig | | GE30344X012 / Green with White Stripe | |
| 0.69 bar | | -0.07 bar | 0.07 mbar | 345 to 690 mbar | | | |

| CAPACITIES IN SCFH / Nm ³ /h OF 0.6 SPECIFIC GRAVITY NATURAL GAS | | | | | | | | | | | | | | | | | |
|---|-----|--|--------------------|-----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|--------|--------------------|------------|--------------------|
| Inlet Pressure | | Orifice Size, In. / mm | | | | | | | | | | | | | | | |
| | | 1/4 / 6.4 | | 3/8 / 9.5 | | 1/2 / 13 | | 5/8 / 16 | | 3/4 / 19 | | 7/8 / 22 | | 1 / 25 | | 1-3/8 / 35 | |
| | | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h |
| psig | bar | Body Sizes: 1-1/2 and 2 in. / DN 40 and 50 | | | | | | | | | | | | | | | |
| 15 | 1.0 | 1300 | 34.9 | 1780 | 47.9 | 2460 | 66.1 | 2780 | 74.7 | 3140 | 84.2 | 4040 | 108 | 4040 | 108 | 6010 | 161 |
| 20 | 1.4 | 1960 | 52.6 | 2240 | 60.1 | 2980 | 80.0 | 3640 | 97.5 | 4370 | 117 | 5230 | 140 | 6060 | 163 | | |
| 25 | 1.7 | 2430 | 65.2 | 2860 | 76.9 | 4020 | 108 | 4780 | 128 | 5180 | 139 | 6530 | 175 | 7210 | 193 | | |
| 30 | 2.1 | 2910 | 78.1 | 3210 | 86.2 | 4470 | 120 | 5720 | 153 | 6540 | 175 | 7400 | 198 | 8420 | 226 | | |
| 40 | 2.8 | 3560 | 95.4 | 4080 | 109 | 6090 | 163 | 7150 | 192 | 8680 | 233 | 9860 | 264 | | | | |
| 50 | 3.4 | 4230 | 113 | 5020 | 135 | 7760 | 208 | 9730 | 261 | 10,750 | 288 | 11,210 | 300 | | | | |
| 60 | 4.1 | 4790 | 129 | 6360 | 170 | 8900 | 238 | 10,530 | 282 | 12,960 | 347 | 13,720 | 368 | | | | |
| 80 | 5.5 | 6110 | 164 | 7950 | 213 | 10,840 | 290 | 13,920 | 373 | 15,610 | 418 | | | | | | |
| 100 | 6.9 | 7610 | 204 | 9730 | 261 | 12,780 | 343 | | | | | | | | | | |
| 125 | 8.6 | 8960 | 240 | 11,890 | 319 | | | | | | | | | | | | |

Table 44. Types CS850 and CS854 Internal Registration Flow Capacities for 10 psig / 0.69 bar Setpoint at 20% Accuracy

| SETPOINT | | ACCURACY: +/- 20% GAUGE | | SPRING | | | |
|----------|--|-------------------------|---------|-----------------|--|---------------------------------------|--|
| | | Droop | Boost | Set Range | | Part Number / Color | |
| 10 psig | | -2 psig | 2 psig | 5 to 10 psig | | GE30344X012 / Green with White Stripe | |
| 0.69 bar | | -1.4 bar | 1.4 bar | 345 to 690 mbar | | | |

| CAPACITIES IN SCFH / Nm ³ /h OF 0.6 SPECIFIC GRAVITY NATURAL GAS | | | | | | | | | | | | | | | | | |
|---|-----|--|--------------------|-----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|--------|--------------------|------------|--------------------|
| Inlet Pressure | | Orifice Size, In. / mm | | | | | | | | | | | | | | | |
| | | 1/4 / 6.4 | | 3/8 / 9.5 | | 1/2 / 13 | | 5/8 / 16 | | 3/4 / 19 | | 7/8 / 22 | | 1 / 25 | | 1-3/8 / 35 | |
| | | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h |
| psig | bar | Body Sizes: 1-1/2 and 2 in. / DN 40 and 50 | | | | | | | | | | | | | | | |
| 15 | 1.0 | 1820 | 48.8 | 3160 | 84.8 | 4670 | 125 | 6050 | 162 | 6650 | 178 | 8250 | 221 | 9420 | 252 | 11,730 | 314 |
| 20 | 1.4 | 2190 | 58.8 | 3850 | 103 | 6450 | 173 | 7820 | 210 | 9380 | 251 | 11,000 | 295 | 12,560 | 336 | | |
| 25 | 1.7 | 2570 | 69.0 | 4920 | 132 | 8110 | 217 | 9780 | 262 | 11,240 | 301 | 14,080 | 377 | 14,750 | 395 | | |
| 30 | 2.1 | 2950 | 79.2 | 5780 | 155 | 9090 | 244 | 11,710 | 314 | 14,110 | 378 | 15,450 | 414 | 17,370 | 465 | | |
| 40 | 2.8 | 3620 | 97.0 | 7330 | 197 | 11,740 | 315 | 14,830 | 398 | 16,820 | 451 | 19,590 | 525 | | | | |
| 50 | 3.4 | 4310 | 116 | 8910 | 239 | 14,510 | 389 | 17,600 | 472 | 19,840 | 532 | 22,180 | 594 | | | | |
| 60 | 4.1 | 4940 | 133 | 10,410 | 279 | 16,430 | 440 | 19,720 | 528 | 23,450 | 628 | 23,920 | 641 | | | | |
| 80 | 5.5 | 6260 | 168 | 13,140 | 352 | 20,040 | 537 | 23,940 | 641 | 28,110 | 753 | | | | | | |
| 100 | 6.9 | 7660 | 205 | 16,210 | 434 | 23,050 | 618 | | | | | | | | | | |
| 125 | 8.6 | 9290 | 249 | 19,320 | 517.8 | | | | | | | | | | | | |

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Table 45. Types CS800, CS803 and CS804 External Registration Flow Capacities for 7 in. w.c. / 17 mbar Setpoint

| SETPOINT | ACCURACY | | SPRING | |
|------------|-------------|------------|---------------------|---------------------|
| | Drop | Boost | Set Range | Part Number / Color |
| 7 in. w.c. | -2 in. w.c. | 2 in. w.c. | 5.5 to 8.5 in. w.c. | GE30338X012 / Black |
| 17 mbar | -5 mbar | 5 mbar | 13 to 21 mbar | |

| CAPACITIES IN SCFH / Nm ³ /h OF 0.6 SPECIFIC GRAVITY NATURAL GAS | | | | | | | | | | | | | | | | | |
|---|------|--|--------------------|-----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|--------|--------------------|---------------------------|--------------------|
| Inlet Pressure | | Orifice Size, In. / mm | | | | | | | | | | | | | | | |
| | | 1/4 / 6.4 | | 3/8 / 9.5 | | 1/2 / 13 | | 5/8 / 16 | | 3/4 / 19 | | 7/8 / 22 | | 1 / 25 | | 1-3/8 / 35 ⁽¹⁾ | |
| | | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h |
| psig | bar | Body Sizes: 1-1/2 and 2 in. / DN 40 and 50 | | | | | | | | | | | | | | | |
| 0.4 | 0.03 | | | 550 | 14.8 | 780 | 20.9 | 1090 | 29.3 | 1000 | 26.8 | 1390 | 37.3 | 1640 | 44.0 | 1780 | 47.8 |
| 0.51 | 0.04 | 360 | 9.7 | 630 | 16.9 | 930 | 25.0 | 1100 | 29.5 | 1530 | 41.1 | 1530 | 41.1 | 1940 | 52.1 | 2400 | 64.4 |
| 1 | 0.07 | 500 | 13.4 | 830 | 22.3 | 1290 | 34.6 | 1730 | 46.4 | 1980 | 53.2 | 2320 | 62.3 | 2860 | 76.8 | 3780 | 102 |
| 2 | 0.14 | 720 | 19.3 | 1330 | 35.7 | 2010 | 54.0 | 2550 | 68.5 | 3260 | 87.5 | 3740 | 100 | 4360 | 117 | 5930 | 159 |
| 3 | 0.21 | 870 | 23.4 | 1650 | 44.3 | 2500 | 67.1 | 3180 | 85.4 | 4130 | 111 | 4760 | 128 | 5250 | 141 | 7110 | 191 |
| 5 | 0.34 | 1120 | 30.1 | 2070 | 55.6 | 3410 | 91.5 | 4380 | 118 | 5620 | 151 | 6400 | 172 | 7500 | 201 | 9370 | 252 |
| 10 | 0.69 | 1480 | 39.7 | 2990 | 80.3 | 5010 | 135 | 6480 | 174 | 8420 | 226 | 9820 | 264 | 11,600 | 311 | 14,600 | 392 |
| 15 | 1.0 | 1810 | 48.6 | 3710 | 99.6 | 6410 | 172 | 8320 | 223 | 10,800 | 290 | 12,770 | 343 | 15,130 | 406 | 19,610 | 526 |
| 20 | 1.4 | 2170 | 58.3 | 4560 | 122 | 7720 | 207 | 10,750 | 289 | 13,660 | 367 | 15,080 | 405 | 18,520 | 497 | | |
| 25 | 1.7 | 2520 | 67.7 | 5320 | 143 | 9030 | 242 | 12,220 | 328 | 16,340 | 439 | 18,630 | 500 | 21,950 | 589 | | |
| 30 | 2.1 | 2770 | 74.4 | 5990 | 161 | 10,440 | 280 | 13,770 | 370 | 17,790 | 478 | 20,350 | 546 | | | | |
| 40 | 2.8 | 3400 | 91.3 | 7360 | 198 | 12,490 | 335 | 16,720 | 449 | 20,320 | 546 | 25,650 | 689 | | | | |
| 50 | 3.4 | 4010 | 108 | 8700 | 234 | 14,510 | 390 | 18,750 | 503 | 24,220 | 650 | 26,390 | 709 | | | | |
| 60 | 4.1 | 4630 | 124 | 10,110 | 271 | 16,810 | 451 | 22,130 | 594 | 26,490 | 711 | | | | | | |
| 80 | 5.5 | 5960 | 160 | 12,550 | 337 | 19,580 | 526 | | | | | | | | | | |
| 100 | 6.9 | 7280 | 195 | 15,030 | 404 | 22,540 | 605 | | | | | | | | | | |
| 125 | 8.6 | 8150 | 219 | 16,990 | 456 | | | | | | | | | | | | |

Black areas show where indicated droop/boost would be exceeded regardless of capacity.
 Blank areas indicate where maximum operating inlet pressure for a given orifice size is exceeded.
 1. Not available on the Type CS803.

Table 46. Types CS800, CS803 and CS804 External Registration Flow Capacities for 10 in. w.c. / 25 mbar Setpoint

| SETPOINT | ACCURACY | | SPRING | |
|-------------|-------------|------------|---------------------|----------------------|
| | Drop | Boost | Set Range | Part Number / Color |
| 10 in. w.c. | -2 in. w.c. | 2 in. w.c. | 5.5 to 8.5 in. w.c. | GE30339X012 / Purple |
| 25 mbar | -5 mbar | 5 mbar | 13 to 21 mbar | |

| CAPACITIES IN SCFH / Nm ³ /h OF 0.6 SPECIFIC GRAVITY NATURAL GAS | | | | | | | | | | | | | | | | | |
|---|------|--|--------------------|-----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|--------|--------------------|---------------------------|--------------------|
| Inlet Pressure | | Orifice Size, In. / mm | | | | | | | | | | | | | | | |
| | | 1/4 / 6.4 | | 3/8 / 9.5 | | 1/2 / 13 | | 5/8 / 16 | | 3/4 / 19 | | 7/8 / 22 | | 1 / 25 | | 1-3/8 / 35 ⁽¹⁾ | |
| | | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h |
| psig | bar | Body Sizes: 1-1/2 and 2 in. / DN 40 and 50 | | | | | | | | | | | | | | | |
| 0.51 | 0.04 | 310 | 8.3 | 560 | 15.0 | 640 | 17.2 | 990 | 26.6 | 1290 | 34.6 | 1250 | 33.6 | 1250 | 33.6 | 1970 | 52.9 |
| 1 | 0.07 | 470 | 12.6 | 750 | 20.1 | 1130 | 30.3 | 1430 | 38.4 | 1850 | 49.7 | 2210 | 59.3 | 2520 | 67.7 | 3530 | 94.8 |
| 2 | 0.14 | 690 | 18.5 | 1250 | 33.6 | 1530 | 41.1 | 1910 | 51.3 | 2880 | 77.3 | 3560 | 95.6 | 3750 | 101 | 5110 | 137 |
| 3 | 0.21 | 850 | 22.8 | 1540 | 41.3 | 2260 | 60.7 | 2860 | 76.8 | 3690 | 99.1 | 4350 | 117 | 4690 | 126 | 6320 | 170 |
| 5 | 0.34 | 1080 | 29.0 | 2050 | 55.0 | 3090 | 83.0 | 3850 | 103 | 4810 | 129 | 5850 | 157 | 6860 | 184 | 8180 | 220 |
| 10 | 0.69 | 1420 | 38.1 | 2590 | 69.5 | 4470 | 120 | 5460 | 147 | 7370 | 198 | 8340 | 224 | 10,130 | 272 | 13,030 | 350 |
| 15 | 1.0 | 1750 | 47.0 | 3500 | 94.0 | 5880 | 158 | 7500 | 201 | 9380 | 252 | 11,120 | 299 | 13,700 | 368 | 18,810 | 505 |
| 20 | 1.4 | 2090 | 56.1 | 4200 | 113 | 7260 | 195 | 9470 | 254 | 11,860 | 318 | 14,270 | 383 | 16,060 | 431 | | |
| 25 | 1.7 | 2450 | 65.8 | 4950 | 133 | 8690 | 233 | 11,450 | 307 | 14,720 | 395 | 17,400 | 467 | 18,860 | 506 | | |
| 30 | 2.1 | 2790 | 74.9 | 5600 | 150 | 10,170 | 273 | 12,560 | 337 | 16,420 | 441 | 19,700 | 529 | | | | |
| 40 | 2.8 | 3390 | 91.0 | 6850 | 184 | 12,420 | 333 | 15,470 | 415 | 20,510 | 551 | 24,130 | 648 | | | | |
| 50 | 3.4 | 4010 | 108 | 8200 | 220 | 14,090 | 378 | 17,960 | 482 | 23,020 | 618 | 29,010 | 779 | | | | |
| 60 | 4.1 | 4620 | 124 | 9500 | 255 | 16,410 | 441 | 19,770 | 531 | 26,280 | 706 | | | | | | |
| 80 | 5.5 | 5920 | 159 | 11,900 | 320 | 19,050 | 511 | | | | | | | | | | |
| 100 | 6.9 | 7200 | 193 | 14,270 | 383 | 21,960 | 590 | | | | | | | | | | |
| 125 | 8.6 | 8080 | 217 | 15,680 | 421 | | | | | | | | | | | | |

Blank areas indicate where maximum operating inlet pressure for a given orifice size is exceeded.
 1. Not available on the Type CS803.

Table 47. Types CS800, CS803 and CS804 External Registration Flow Capacities for 14 in. w.c. / 35 mbar Setpoint

| SETPOINT | ACCURACY | | SPRING | |
|-------------|-------------|------------|-------------------|---------------------|
| | Droop | Boost | Set Range | Part Number / Color |
| 14 in. w.c. | -2 in. w.c. | 2 in. w.c. | 10 to 16 in. w.c. | GE30340X012 / White |
| 35 mbar | -5 mbar | 5 mbar | 25 to 40 mbar | |

| CAPACITIES IN SCFH / Nm ³ /h OF 0.6 SPECIFIC GRAVITY NATURAL GAS | | | | | | | | | | | | | | | | | |
|---|------|--|--------------------|-----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|--------|--------------------|---------------------------|--------------------|
| Inlet Pressure | | Orifice Size, In. / mm | | | | | | | | | | | | | | | |
| | | 1/4 / 6.4 | | 3/8 / 9.5 | | 1/2 / 13 | | 5/8 / 16 | | 3/4 / 19 | | 7/8 / 22 | | 1 / 25 | | 1-3/8 / 35 ⁽¹⁾ | |
| | | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h |
| psig | bar | Body Sizes: 1-1/2 and 2 in. / DN 40 and 50 | | | | | | | | | | | | | | | |
| 1 | 0.07 | 430 | 11.5 | 520 | 14.0 | 1210 | 32.5 | 1210 | 32.5 | 1290 | 34.6 | 1540 | 41.3 | 1790 | 48.1 | 2510 | 67.4 |
| 2 | 0.14 | 630 | 16.9 | 990 | 26.6 | 1690 | 45.4 | 2010 | 54.0 | 2440 | 65.5 | 2900 | 77.9 | 3350 | 89.9 | 4500 | 121 |
| 3 | 0.21 | 770 | 20.7 | 1350 | 36.2 | 1870 | 50.2 | 2540 | 68.2 | 2890 | 77.6 | 3730 | 100 | 4230 | 114 | 5660 | 152 |
| 5 | 0.34 | 1030 | 27.7 | 1800 | 48.3 | 2760 | 74.1 | 3280 | 88.1 | 4020 | 108 | 5320 | 143 | 5730 | 154 | 7160 | 192 |
| 10 | 0.69 | 1380 | 37.0 | 2560 | 68.7 | 4000 | 107 | 5110 | 137 | 6320 | 170 | 7700 | 207 | 8530 | 229 | 13,160 | 353 |
| 15 | 1.0 | 1700 | 45.6 | 3220 | 86.4 | 4980 | 134 | 6400 | 172 | 8180 | 220 | 10,270 | 276 | 11,690 | 314 | 19,100 | 513 |
| 20 | 1.4 | 1970 | 52.9 | 4040 | 109 | 6270 | 168 | 8110 | 218 | 10,620 | 285 | 15,320 | 411 | 17,550 | 471 | | |
| 25 | 1.7 | 2340 | 62.8 | 4890 | 131 | 7810 | 210 | 9570 | 257 | 12,530 | 336 | 18,870 | 507 | 20,710 | 556 | | |
| 30 | 2.1 | 2710 | 72.8 | 5320 | 143 | 8280 | 222 | 10,890 | 292 | 13,070 | 351 | 19,710 | 529 | | | | |
| 40 | 2.8 | 3300 | 88.6 | 6900 | 185 | 10,980 | 295 | 13,280 | 357 | 16,560 | 444 | 26,440 | 710 | | | | |
| 50 | 3.4 | 3890 | 104 | 8290 | 223 | 12,990 | 349 | 16,060 | 431 | 18,020 | 484 | 30,650 | 823 | | | | |
| 60 | 4.1 | 4490 | 121 | 9710 | 261 | 15,400 | 413 | 18,340 | 492 | 21,170 | 568 | | | | | | |
| 80 | 5.5 | 5770 | 155 | 12,450 | 334 | 18,900 | 507 | | | | | | | | | | |
| 100 | 6.9 | 7000 | 188 | 15,030 | 404 | 21,320 | 572 | | | | | | | | | | |
| 125 | 8.6 | 7900 | 212 | 16,680 | 448 | | | | | | | | | | | | |

Blank areas indicate where maximum operating inlet pressure for a given orifice size is exceeded.
1. Not available on the Type CS803.

Table 48. Types CS800, CS803 and CS804 External Registration Flow Capacities for 1 psig / 0.07 bar Setpoint

| SETPOINT | ACCURACY | | SPRING | |
|----------|---------------|--------------|-------------------|--------------------------|
| | Droop | Boost | Set Range | Part Number / Color |
| 1 psig | -5.5 in. w.c. | 5.5 in. w.c. | 14 to 30 in. w.c. | GE30341X012 / Dark Green |
| 0.07 bar | -14 mbar | 14 mbar | 35 to 75 mbar | |

| CAPACITIES IN SCFH / Nm ³ /h OF 0.6 SPECIFIC GRAVITY NATURAL GAS | | | | | | | | | | | | | | | | | |
|---|------|--|--------------------|-----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|--------|--------------------|---------------------------|--------------------|
| Inlet Pressure | | Orifice Size, In. / mm | | | | | | | | | | | | | | | |
| | | 1/4 / 6.4 | | 3/8 / 9.5 | | 1/2 / 13 | | 5/8 / 16 | | 3/4 / 19 | | 7/8 / 22 | | 1 / 25 | | 1-3/8 / 35 ⁽¹⁾ | |
| | | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h |
| psig | bar | Body Sizes: 1-1/2 and 2 in. / DN 40 and 50 | | | | | | | | | | | | | | | |
| 2 | 0.14 | 680 | 18.3 | 1090 | 29.3 | 1830 | 49.1 | 2540 | 68.2 | 2950 | 79.2 | 3390 | 91.0 | 4140 | 111 | 6030 | 162 |
| 3 | 0.21 | 870 | 23.4 | 1500 | 40.3 | 2530 | 67.9 | 3360 | 90.2 | 4300 | 115 | 4870 | 131 | 5700 | 153 | 7310 | 196 |
| 5 | 0.34 | 1170 | 31.4 | 2050 | 55.0 | 3430 | 92.1 | 4690 | 126 | 6110 | 164 | 7000 | 188 | 8210 | 220 | 9760 | 262 |
| 10 | 0.69 | 1490 | 40.0 | 2960 | 79.5 | 4840 | 130 | 6550 | 176 | 8320 | 223 | 9480 | 255 | 11,380 | 306 | 14,700 | 395 |
| 15 | 1.0 | 1810 | 48.6 | 3790 | 102 | 6610 | 177 | 8740 | 235 | 10,590 | 284 | 11,840 | 318 | 13,980 | 375 | 20,000 | 537 |
| 20 | 1.4 | 2130 | 57.2 | 4920 | 132 | 7750 | 208 | 10,220 | 274 | 12,360 | 332 | 14,930 | 401 | 16,240 | 436 | | |
| 25 | 1.7 | 2580 | 69.3 | 5590 | 150 | 9070 | 244 | 11,790 | 317 | 14,230 | 382 | 17,970 | 482 | 18,370 | 493 | | |
| 30 | 2.1 | 2900 | 77.9 | 6570 | 176 | 10,070 | 270 | 13,200 | 354 | 16,450 | 442 | 19,880 | 534 | 22,620 | 607 | | |
| 40 | 2.8 | 3640 | 97.7 | 7830 | 210 | 12,890 | 346 | 15,860 | 426 | 19,200 | 515 | 20,760 | 557 | | | | |
| 50 | 3.4 | 4420 | 119 | 9360 | 251 | 15,480 | 416 | 18,380 | 493 | 22,670 | 609 | 24,280 | 652 | | | | |
| 60 | 4.1 | 5100 | 137 | 10,910 | 293 | 18,120 | 486 | 21,070 | 566 | 24,680 | 663 | 26,750 | 718 | | | | |
| 80 | 5.5 | 6460 | 173 | 13,140 | 353 | 20,770 | 558 | 23,970 | 644 | 27,780 | 746 | | | | | | |
| 100 | 6.9 | 7930 | 213 | 16,420 | 441 | 23,090 | 620 | | | | | | | | | | |
| 125 | 8.6 | 8730 | 234 | 19,710 | 529 | | | | | | | | | | | | |

Blank areas indicate where maximum operating inlet pressure for a given orifice size is exceeded.
1. Not available on the Type CS803.

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Table 49. Types CS820, CS823 and CS824 External Registration Flow Capacities for 2 psig / 138 mbar Setpoint at 20% Accuracy

| SETPOINT | ACCURACY | | SPRING | |
|----------|------------|-----------|----------------|-------------------------|
| | Droop | Boost | Set Range | Part Number / Color |
| 2 psig | -0.40 psig | 0.40 psig | 1 to 2.5 psig | GE30342X012 / Dark Blue |
| 138 mbar | -28 mbar | 28 mbar | 69 to 170 mbar | |

| CAPACITIES IN SCFH / Nm ³ /h OF 0.6 SPECIFIC GRAVITY NATURAL GAS | | | | | | | | | | | | | | | | | |
|---|------|--|--------------------|-----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|--------|--------------------|---------------------------|--------------------|
| Inlet Pressure | | Orifice Size, In. / mm | | | | | | | | | | | | | | | |
| | | 1/4 / 6.4 | | 3/8 / 9.5 | | 1/2 / 13 | | 5/8 / 16 | | 3/4 / 19 | | 7/8 / 22 | | 1 / 25 | | 1-3/8 / 35 ⁽¹⁾ | |
| | | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h |
| psig | bar | Body Sizes: 1-1/2 and 2 in. / DN 40 and 50 | | | | | | | | | | | | | | | |
| 3 | 0.21 | 760 | 20.4 | 1220 | 32.8 | 1820 | 48.9 | 2780 | 74.6 | 2780 | 74.6 | 4180 | 112 | 5360 | 144 | 5540 | 149 |
| 5 | 0.34 | 1080 | 29.0 | 1770 | 47.5 | 2880 | 77.3 | 3710 | 99.6 | 4840 | 130 | 5570 | 150 | 6950 | 187 | 8570 | 230 |
| 10 | 0.69 | 1460 | 39.2 | 2560 | 68.7 | 4400 | 118 | 6330 | 170 | 7400 | 197 | 8750 | 235 | 9180 | 246 | 12,710 | 341 |
| 15 | 1.0 | 1760 | 47.2 | 3560 | 95.6 | 5540 | 149 | 7870 | 211 | 9590 | 257 | 11,280 | 303 | 11,890 | 319 | 15,220 | 409 |
| 20 | 1.4 | 2090 | 56.1 | 4310 | 116 | 6680 | 179 | 9610 | 258 | 11,940 | 321 | 13,420 | 360 | 14,300 | 384 | | |
| 25 | 1.7 | 2350 | 63.1 | 5100 | 137 | 7600 | 204 | 10,780 | 289 | 13,440 | 361 | 14,020 | 376 | 15,510 | 416 | | |
| 30 | 2.1 | 2710 | 72.8 | 5760 | 155 | 8980 | 241 | 12,410 | 333 | 15,040 | 404 | 15,770 | 423 | 17,220 | 462 | | |
| 40 | 2.8 | 3390 | 91.0 | 7290 | 196 | 10,560 | 284 | 14,810 | 398 | 16,840 | 452 | 18,260 | 490 | | | | |
| 50 | 3.4 | 3970 | 107 | 8530 | 229 | 12,490 | 335 | 16,790 | 451 | 18,370 | 493 | 19,490 | 523 | | | | |
| 60 | 4.1 | 4570 | 123 | 9930 | 267 | 14,050 | 377 | 18,570 | 499 | 19,310 | 518 | 21,120 | 567 | | | | |
| 80 | 5.5 | 5880 | 158 | 12,420 | 333 | 16,150 | 434 | 20,330 | 546 | 21,450 | 576 | | | | | | |
| 100 | 6.9 | 7250 | 195 | 14,670 | 394 | 18,850 | 506 | | | | | | | | | | |
| 125 | 8.6 | 8960 | 241 | 16,450 | 442 | | | | | | | | | | | | |

Blank areas indicate where maximum operating inlet pressure for a given orifice size is exceeded.
1. Not available on the Type CS823.

Table 50. Types CS820, CS823 and CS824 External Registration Flow Capacities for 5 psig / 345 mbar Setpoint at 20% Accuracy

| SETPOINT | ACCURACY | | SPRING | |
|----------|------------|---------|-----------------|----------------------|
| | Droop | Boost | Set Range | Part Number / Color |
| 5 psig | -1 psig | 1 psig | 2.5 to 5.5 psig | GE30343X012 / Yellow |
| 345 mbar | -0.07 mbar | 69 mbar | 170 to 380 mbar | |

| CAPACITIES IN SCFH / Nm ³ /h OF 0.6 SPECIFIC GRAVITY NATURAL GAS | | | | | | | | | | | | | | | | | |
|---|------|--|--------------------|-----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|--------|--------------------|---------------------------|--------------------|
| Inlet Pressure | | Orifice Size, In. / mm | | | | | | | | | | | | | | | |
| | | 1/4 / 6.4 | | 3/8 / 9.5 | | 1/2 / 13 | | 5/8 / 16 | | 3/4 / 19 | | 7/8 / 22 | | 1 / 25 | | 1-3/8 / 35 ⁽¹⁾ | |
| | | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h |
| psig | bar | Body Sizes: 1-1/2 and 2 in. / DN 40 and 50 | | | | | | | | | | | | | | | |
| 10 | 0.69 | 1430 | 38.4 | 2320 | 62.3 | 4370 | 117 | 4780 | 128 | 5920 | 159 | 7360 | 198 | 8670 | 233 | 10,820 | 291 |
| 15 | 1.0 | 1800 | 48.3 | 3370 | 90.5 | 5370 | 144 | 7030 | 189 | 8520 | 229 | 11,130 | 299 | 11,870 | 319 | 15,610 | 419 |
| 20 | 1.4 | 2120 | 56.9 | 4510 | 121 | 6640 | 178 | 8920 | 240 | 11,730 | 315 | 13,420 | 360 | 15,360 | 412 | | |
| 25 | 1.7 | 2430 | 65.2 | 5340 | 143 | 7770 | 209 | 11,420 | 307 | 14,150 | 380 | 15,880 | 426 | 18,530 | 497 | | |
| 30 | 2.1 | 2730 | 73.3 | 5960 | 160 | 9120 | 245 | 13,180 | 354 | 15,890 | 427 | 17,100 | 459 | 20,070 | 539 | | |
| 40 | 2.8 | 3410 | 91.5 | 7210 | 194 | 11,410 | 306 | 16,620 | 446 | 18,800 | 505 | 19,890 | 534 | | | | |
| 50 | 3.4 | 4040 | 109 | 8640 | 232 | 13,540 | 364 | 17,940 | 482 | 21,260 | 571 | 24,110 | 647 | | | | |
| 60 | 4.1 | 4560 | 122 | 10,140 | 272 | 15,530 | 417 | 21,730 | 583 | 24,520 | 658 | 26,500 | 711 | | | | |
| 80 | 5.5 | 5880 | 158 | 12,840 | 345 | 20,480 | 550 | 25,360 | 681 | 29,700 | 797 | | | | | | |
| 100 | 6.9 | 7230 | 194 | 15,560 | 418 | 23,710 | 637 | | | | | | | | | | |
| 125 | 8.6 | 8910 | 239 | 20,320 | 546 | | | | | | | | | | | | |

Blank areas indicate where maximum operating inlet pressure for a given orifice size is exceeded.
1. Not available on the Type CS823.

Table 51. Types CS850 and CS854 External Registration Flow Capacities for 7 psig / 483 mbar Setpoint at 20% Accuracy

| SETPOINT | ACCURACY | | SPRING | |
|----------|-----------|----------|-----------------|--|
| | Droop | Boost | Set Range | Part Number / Color |
| 7 psig | -1.4 psig | 1.4 psig | 5 to 10 psig | GE30344X012 / Green with White Stripe |
| 483 mbar | -96 mbar | 96 mbar | 345 to 690 mbar | |

| CAPACITIES IN SCFH / Nm ³ /h OF 0.6 SPECIFIC GRAVITY NATURAL GAS | | | | | | | | | | | | | | | | | |
|---|------|--|--------------------|-----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|--------|--------------------|------------|--------------------|
| Inlet Pressure | | Orifice Size, In. / mm | | | | | | | | | | | | | | | |
| | | 1/4 / 6.4 | | 3/8 / 9.5 | | 1/2 / 13 | | 5/8 / 16 | | 3/4 / 19 | | 7/8 / 22 | | 1 / 25 | | 1-3/8 / 35 | |
| | | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h |
| psig | bar | Body Sizes: 1-1/2 and 2 in. / DN 40 and 50 | | | | | | | | | | | | | | | |
| 10 | 0.69 | 1410 | 37.9 | 1750 | 47.0 | 2030 | 54.5 | 3630 | 97.4 | 4130 | 111 | 4770 | 128 | 5390 | 145 | 7360 | 198 |
| 15 | 1.0 | 1880 | 50.5 | 2840 | 76.2 | 4040 | 109 | 5350 | 144 | 6970 | 187 | 7280 | 195 | 9050 | 243 | 12,240 | 329 |
| 20 | 1.4 | 2230 | 59.9 | 3710 | 99.6 | 5200 | 140 | 6840 | 184 | 8520 | 229 | 9550 | 256 | 11,390 | 306 | | |
| 25 | 1.7 | 2590 | 69.5 | 3710 | 99.6 | 6250 | 168 | 8580 | 230 | 10,630 | 285 | 11,740 | 315 | 13,260 | 356 | | |
| 30 | 2.1 | 2860 | 76.8 | 5140 | 138 | 7120 | 191 | 9970 | 268 | 12,780 | 343 | 14,020 | 376 | 14,890 | 400 | | |
| 40 | 2.8 | 3540 | 95.0 | 6440 | 173 | 9050 | 243 | 12,630 | 339 | 14,690 | 394 | 16,690 | 448 | | | | |
| 50 | 3.4 | 4290 | 115 | 7710 | 207 | 11,610 | 312 | 14,930 | 401 | 18,140 | 487 | 21,190 | 569 | | | | |
| 60 | 4.1 | 4980 | 134 | 8920 | 240 | 13,370 | 359 | 16,650 | 447 | 20,110 | 540 | 23,550 | 632 | | | | |
| 80 | 5.5 | 6010 | 161 | 11,490 | 309 | 17,230 | 463 | 19,220 | 516 | 24,430 | 656 | | | | | | |
| 100 | 6.9 | 7360 | 198 | 15,110 | 406 | 20,130 | 540 | | | | | | | | | | |
| 125 | 8.6 | 9090 | 244 | 17,490 | 470 | | | | | | | | | | | | |

Blank areas indicate where maximum operating inlet pressure for a given orifice size is exceeded.

Table 52. Types CS805 and CS806 Internal Registration Flow Capacities for 7 in. w.c. / 17 mbar Setpoint for 1-1/2 in. / DN 40 Body Size

| SETPOINT | ACCURACY | | SPRING | |
|------------|-------------|------------|---------------------|---------------------|
| | Droop | Boost | Set Range | Part Number / Color |
| 7 in. w.c. | -1 in. w.c. | 2 in. w.c. | 5.5 to 8.5 in. w.c. | GE30338X012 / Black |
| 17 mbar | -2.5 mbar | 5 mbar | 13 to 21 mbar | |

| CAPACITIES IN SCFH / Nm ³ /h OF 0.6 SPECIFIC GRAVITY NATURAL GAS | | | | | | | | | | | |
|---|------|------------------------------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|
| Inlet Pressure | | Orifice Size, In. / mm | | | | | | | | | |
| | | 3/8 / 9.5 | | 1/2 / 13 | | 5/8 / 16 | | 3/4 / 19 | | 7/8 / 22 | |
| | | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h |
| psig | bar | Body Size: 1-1/2 in. / DN 40 | | | | | | | | | |
| 0.51 | 0.04 | | | | | 730 | 19.6 | 850 | 22.8 | 910 | 24.4 |
| 1 | 0.07 | 580 | 15.6 | 800 | 21.5 | 880 | 23.6 | 1050 | 28.2 | 1060 | 28.5 |
| 2 | 0.14 | 900 | 24.2 | 1140 | 30.6 | 1520 | 40.8 | 1610 | 43.2 | 1610 | 43.2 |
| 3 | 0.21 | 1080 | 29.0 | 1480 | 39.7 | 1920 | 51.5 | 2250 | 60.4 | 2260 | 60.7 |
| 5 | 0.34 | 1620 | 43.5 | 2120 | 56.9 | 2560 | 68.7 | 3370 | 90.5 | 3470 | 93.2 |
| 10 | 0.69 | 2520 | 67.7 | 3100 | 83.2 | 5200 | 140 | 5620 | 151 | 5680 | 153 |
| 15 | 1.0 | 3150 | 84.6 | 5350 | 144 | 6400 | 172 | 7500 | 201 | 7140 | 192 |
| 20 | 1.4 | 3910 | 105 | 6500 | 175 | 7200 | 193 | 7500 | 201 | 8610 | 231 |
| 25 | 1.7 | 4680 | 126 | 7600 | 204 | 7600 | 204 | 7600 | 204 | 8610 | 231 |
| 30 | 2.1 | 5160 | 139 | 7700 | 207 | 7700 | 207 | 7700 | 207 | 9550 | 256 |
| 40 | 2.8 | 6140 | 165 | 7800 | 209 | 7900 | 212 | 7900 | 212 | 9550 | 256 |
| 50 | 3.4 | 7120 | 191 | 7900 | 212 | 8000 | 215 | 8000 | 215 | 9550 | 256 |
| 60 | 4.1 | 7500 | 201 | 8000 | 215 | 8000 | 215 | 8000 | 215 | | |
| 80 | 5.5 | 8500 | 228 | 8500 | 228 | | | | | | |
| 100 | 6.9 | 8500 | 228 | 8500 | 228 | | | | | | |
| 125 | 8.6 | 8500 | 228 | | | | | | | | |

Black areas show where indicated droop/boost would be exceeded regardless of capacity.
Blank areas indicate where maximum operating inlet pressure for a given orifice size is exceeded.

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Table 53. Types CS805 and CS806 Internal Registration Flow Capacities for 7 in. w.c. / 17 mbar Setpoint for 2 in. / DN 50 Body Size, Enhanced Low Inlet (LIN) Option

| SETPOINT | ACCURACY | | SPRING | |
|------------|-------------|------------|---------------------|---------------------|
| | Drop | Boost | Set Range | Part Number / Color |
| 7 in. w.c. | -1 in. w.c. | 2 in. w.c. | 5.5 to 8.5 in. w.c. | GE49043X012 / Brown |
| 17 mbar | -2.5 mbar | 5 mbar | 13 to 21 mbar | |

| CAPACITIES IN SCFH / Nm ³ /h OF 0.6 SPECIFIC GRAVITY NATURAL GAS | | | | | | | | | | | |
|---|------|--------------------------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|
| Inlet Pressure | | Orifice Size, In. / mm | | | | | | | | | |
| | | 3/8 / 9.5 | | 1/2 / 13 | | 5/8 / 16 | | 3/4 / 19 | | 7/8 / 22 | |
| | | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h |
| psig | bar | Body Size: 2 in. / DN 50 | | | | | | | | | |
| 0.51 | 0.04 | [Black Area] | | | | 970 | 26.2 | 1140 | 30.8 | 1320 | 35.7 |
| 1 | 0.07 | 710 | 19.1 | 1120 | 30.1 | 1270 | 34.2 | 1490 | 40.1 | 1990 | 53.5 |
| 2 | 0.14 | 1140 | 30.6 | 1710 | 45.9 | 2190 | 59.0 | 2570 | 69.1 | 2970 | 79.9 |
| 3 | 0.21 | 1460 | 39.3 | 2090 | 56.1 | 2580 | 69.3 | 3180 | 85.4 | 3750 | 101 |
| 5 | 0.34 | 2040 | 54.8 | 2670 | 71.9 | 4000 | 108 | 4370 | 118 | 5590 | 150 |
| 10 | 0.69 | 3120 | 84 | 4590 | 123 | 7120 | 191 | 7680 | 206 | 8300 | 223 |
| 15 | 1.0 | 4030 | 108 | 6160 | 166 | 8950 | 241 | 9650 | 259 | 10,610 | 285 |
| 20 | 1.4 | 4770 | 128 | 7550 | 203 | 10,990 | 295 | 11,860 | 318 | 12,660 | 340 |
| 25 | 1.7 | 5640 | 152 | 9170 | 246 | 12,680 | 341 | 12,930 | 347 | 13,610 | 365 |

[Black Area] Black areas show where indicated droop/boost would be exceeded regardless of capacity.

Table 54. Types CS805 and CS806 Internal Registration Flow Capacities for 7 in. w.c. / 17 mbar Setpoint for 2 in. / DN 50 Body Size

| SETPOINT | ACCURACY | | SPRING | |
|------------|-------------|------------|---------------------|---------------------|
| | Drop | Boost | Set Range | Part Number / Color |
| 7 in. w.c. | -1 in. w.c. | 2 in. w.c. | 5.5 to 8.5 in. w.c. | GE30338X012 / Black |
| 17 mbar | -2.5 mbar | 5 mbar | 13 to 21 mbar | |

| CAPACITIES IN SCFH / Nm ³ /h OF 0.6 SPECIFIC GRAVITY NATURAL GAS | | | | | | | | | | | |
|---|------|--------------------------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|
| Inlet Pressure | | Orifice Size, In. / mm | | | | | | | | | |
| | | 3/8 / 9.5 | | 1/2 / 13 | | 5/8 / 16 | | 3/4 / 19 | | 7/8 / 22 | |
| | | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h |
| psig | bar | Body Size: 2 in. / DN 50 | | | | | | | | | |
| 0.51 | 0.04 | [Black Area] | | | | 870 | 23.4 | 1020 | 27.4 | 1270 | 34.1 |
| 1 | 0.07 | 540 | 14.5 | 1010 | 27.1 | 1190 | 31.9 | 1530 | 41.1 | 1510 | 40.5 |
| 2 | 0.14 | 900 | 24.2 | 1480 | 39.7 | 1710 | 45.9 | 2040 | 54.8 | 2290 | 61.5 |
| 3 | 0.21 | 1200 | 32.2 | 1830 | 49.1 | 2410 | 64.7 | 2750 | 73.8 | 3110 | 83.5 |
| 5 | 0.34 | 1670 | 44.8 | 2520 | 67.7 | 3280 | 88.1 | 4410 | 118 | 4600 | 124 |
| 10 | 0.69 | 2750 | 73.8 | 4190 | 113 | 6010 | 161 | 7210 | 194 | 7730 | 208 |
| 15 | 1.0 | 3670 | 98.5 | 6350 | 171 | 8140 | 219 | 9430 | 253 | 9750 | 262 |
| 20 | 1.4 | 4630 | 124 | 7910 | 212 | 9730 | 261 | 11,180 | 300 | 11,480 | 308 |
| 25 | 1.7 | 5560 | 149 | 9260 | 249 | 11,140 | 299 | 12,500 | 336 | 12,690 | 341 |
| 30 | 2.1 | 6330 | 170 | 10,350 | 278 | 12,500 | 336 | 12,500 | 336 | 13,830 | 371 |
| 40 | 2.8 | 7930 | 213 | 12,000 | 322 | 12,500 | 336 | 12,500 | 336 | 16,130 | 433 |
| 50 | 3.4 | 9490 | 255 | 12,140 | 326 | 12,500 | 336 | 12,500 | 336 | 17,060 | 458 |
| 60 | 4.1 | 10,800 | 290 | 12,500 | 336 | 12,500 | 336 | 12,500 | 336 | | |
| 80 | 5.5 | 11,870 | 319 | 12,500 | 336 | | | | | | |
| 100 | 6.9 | 12,500 | 336 | 12,500 | 336 | | | | | | |
| 125 | 8.6 | 12,500 | 336 | | | | | | | | |

[Black Area] Black areas show where indicated droop/boost would be exceeded regardless of capacity.
 [Blank Area] Blank areas indicate where maximum operating inlet pressure for a given orifice size is exceeded.

Table 55. Types CS805 and CS806 Internal Registration Flow Capacities for 14 in. w.c. / 35 mbar Setpoint for 1-1/2 in. / DN 40 Body Size

| SETPOINT | ACCURACY | | SPRING | |
|-------------|-------------|------------|-------------------|---------------------|
| | Droop | Boost | Set Range | Part Number / Color |
| 14 in. w.c. | -2 in. w.c. | 2 in. w.c. | 10 to 16 in. w.c. | GE30340X012 / White |
| 35 mbar | -5 mbar | 5 mbar | 25 to 40 mbar | |

| CAPACITIES IN SCFH / Nm ³ /h OF 0.6 SPECIFIC GRAVITY NATURAL GAS | | | | | | | | | | | |
|---|------|------------------------------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|
| Inlet Pressure | | Orifice Size, In. / mm | | | | | | | | | |
| | | 3/8 / 9.5 | | 1/2 / 13 | | 5/8 / 16 | | 3/4 / 19 | | 7/8 / 22 | |
| | | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h |
| psig | bar | Body Size: 1-1/2 in. / DN 40 | | | | | | | | | |
| 1 | 0.07 | 540 | 14.5 | 830 | 22.3 | 870 | 23.4 | 1450 | 38.9 | 1490 | 40.0 |
| 2 | 0.14 | 880 | 23.6 | 1340 | 36.0 | 1440 | 38.7 | 2080 | 55.8 | 2230 | 59.9 |
| 3 | 0.21 | 1210 | 32.5 | 1770 | 47.5 | 2250 | 60.4 | 2390 | 64.2 | 3000 | 80.5 |
| 5 | 0.34 | 1650 | 44.3 | 2570 | 69.0 | 3340 | 89.7 | 3970 | 107 | 4150 | 111 |
| 10 | 0.69 | 2750 | 73.8 | 4270 | 115 | 5510 | 148 | 6270 | 168 | 6560 | 176 |
| 15 | 1.0 | 3680 | 98.8 | 5820 | 156 | 7370 | 198 | 7640 | 205 | 8060 | 216 |
| 20 | 1.4 | 4830 | 130 | 7080 | 190 | 8540 | 229 | 9200 | 247 | 9200 | 247 |
| 25 | 1.7 | 5620 | 151 | 8380 | 225 | 9600 | 258 | 9600 | 258 | 10,000 | 269 |
| 30 | 2.1 | 6360 | 171 | 9110 | 245 | 10,530 | 283 | 10,530 | 283 | 10,810 | 290 |
| 40 | 2.8 | 7940 | 213 | 10,740 | 288 | 11,870 | 319 | 11,870 | 319 | 11,870 | 319 |
| 50 | 3.4 | 9490 | 255 | 11,730 | 315 | 12,350 | 332 | 12,350 | 332 | 12,350 | 332 |
| 60 | 4.1 | 10,510 | 282 | 12,370 | 332 | 12,870 | 346 | 13,160 | 353 | | |
| 80 | 5.5 | 12,660 | 340 | 13,170 | 354 | | | | | | |
| 100 | 6.9 | 13,170 | 354 | 13,170 | 354 | | | | | | |
| 125 | 8.6 | 13,630 | 366 | | | | | | | | |

Blank areas indicate where maximum operating inlet pressure for a given orifice size is exceeded.

Table 56. Types CS805 and CS806 Internal Registration Flow Capacities for 14 in. w.c. / 35 mbar Setpoint for 2 in. / DN 50 Body Size

| SETPOINT | ACCURACY | | SPRING | |
|-------------|-------------|------------|-------------------|---------------------|
| | Droop | Boost | Set Range | Part Number / Color |
| 14 in. w.c. | -2 in. w.c. | 2 in. w.c. | 10 to 16 in. w.c. | GE30340X012 / White |
| 35 mbar | -5 mbar | 5 mbar | 25 to 40 mbar | |

| CAPACITIES IN SCFH / Nm ³ /h OF 0.6 SPECIFIC GRAVITY NATURAL GAS | | | | | | | | | | | |
|---|------|--------------------------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|
| Inlet Pressure | | Orifice Size, In. / mm | | | | | | | | | |
| | | 3/8 / 9.5 | | 1/2 / 13 | | 5/8 / 16 | | 3/4 / 19 | | 7/8 / 22 | |
| | | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h |
| psig | bar | Body Size: 2 in. / DN 50 | | | | | | | | | |
| 1 | 0.07 | 670 | 18.0 | 890 | 23.9 | 1150 | 30.9 | 1190 | 31.9 | 1550 | 41.6 |
| 2 | 0.14 | 1070 | 28.7 | 1320 | 35.4 | 1570 | 42.1 | 1910 | 51.3 | 2370 | 63.6 |
| 3 | 0.21 | 1200 | 32.2 | 1770 | 47.5 | 2120 | 56.9 | 2570 | 69.0 | 3020 | 81.1 |
| 5 | 0.34 | 1710 | 45.9 | 2400 | 64.4 | 2950 | 79.2 | 3520 | 94.5 | 4180 | 112 |
| 10 | 0.69 | 2630 | 70.6 | 3890 | 104 | 4930 | 132 | 5750 | 154 | 6630 | 178 |
| 15 | 1.0 | 3520 | 94.5 | 5230 | 140 | 6340 | 170 | 7760 | 208 | 8740 | 235 |
| 20 | 1.4 | 4150 | 111 | 6680 | 179 | 7800 | 209 | 9990 | 268 | 10,500 | 282 |
| 25 | 1.7 | 5030 | 135 | 8190 | 220 | 9070 | 244 | 11,480 | 308 | 12,040 | 323 |
| 30 | 2.1 | 5960 | 160 | 9530 | 256 | 10,120 | 272 | 12,650 | 340 | 13,030 | 350 |
| 40 | 2.8 | 7650 | 205 | 11,870 | 319 | 13,370 | 359 | 15,120 | 406 | 15,340 | 412 |
| 50 | 3.4 | 9530 | 256 | 13,960 | 375 | 15,240 | 409 | 16,830 | 452 | 17,960 | 482 |
| 60 | 4.1 | 10,750 | 289 | 15,310 | 411 | 17,930 | 481 | 18,320 | 492 | | |
| 80 | 5.5 | 13,860 | 372 | 19,100 | 513 | | | | | | |
| 100 | 6.9 | 16,370 | 440 | 21,650 | 581 | | | | | | |
| 125 | 8.6 | 19,090 | 513 | | | | | | | | |

Blank areas indicate where maximum operating inlet pressure for a given orifice size is exceeded.

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Table 57. Types CS805 and CS806 Internal Registration Flow Capacities for 1 psig / 0.07 bar Setpoint for 1-1/2 in. / DN 40 Body Size at 10% Accuracy

| SETPOINT | ACCURACY: + / - 10% GAUGE | | SPRING | |
|----------|---------------------------|--------------|-------------------|--------------------------|
| | Droop | Boost | Set Range | Part Number / Color |
| 1 psig | -2.8 in. w.c. | 2.8 in. w.c. | 14 to 30 in. w.c. | GE30341X012 / Dark Green |
| 0.07 bar | -7 mbar | 7 mbar | 35 to 75 mbar | |

| CAPACITIES IN SCFH / Nm ³ /h OF 0.6 SPECIFIC GRAVITY NATURAL GAS | | | | | | | | | | | |
|---|------|------------------------------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|
| Inlet Pressure | | Orifice Size, In. / mm | | | | | | | | | |
| | | 3/8 / 9.5 | | 1/2 / 13 | | 5/8 / 16 | | 3/4 / 19 | | 7/8 / 22 | |
| | | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h |
| psig | bar | Body Size: 1-1/2 in. / DN 40 | | | | | | | | | |
| 2 | 0.14 | 840 | 22.6 | 1200 | 32.2 | 1310 | 35.2 | 1820 | 48.9 | 1610 | 43.2 |
| 3 | 0.21 | 1100 | 29.5 | 1520 | 40.8 | 1760 | 47.2 | 2430 | 65.2 | 2700 | 72.5 |
| 5 | 0.34 | 1680 | 45.1 | 2280 | 61.2 | 2820 | 75.7 | 3490 | 93.7 | 3710 | 99.6 |
| 10 | 0.69 | 2410 | 64.7 | 3430 | 92.1 | 4480 | 120 | 5630 | 151 | 6480 | 174 |
| 15 | 1.0 | 3080 | 82.7 | 4770 | 128 | 6910 | 186 | 7850 | 211 | 8520 | 229 |
| 20 | 1.4 | 4080 | 110 | 5970 | 160 | 8540 | 229 | 9100 | 244 | 9670 | 260 |
| 25 | 1.7 | 4690 | 126 | 7400 | 199 | 9030 | 242 | 9700 | 260 | 10,190 | 274 |
| 30 | 2.1 | 5790 | 155 | 8680 | 233 | 10,380 | 279 | 10,240 | 275 | 10,790 | 290 |
| 40 | 2.8 | 7310 | 196 | 10,290 | 276 | 11,660 | 313 | 11,470 | 308 | 11,930 | 320 |
| 50 | 3.4 | 9270 | 249 | 11,010 | 296 | 12,140 | 326 | 11,740 | 315 | 12,550 | 337 |
| 60 | 4.1 | 10,320 | 277 | 11,200 | 301 | 12,490 | 335 | 12,220 | 328 | | |
| 80 | 5.5 | 11,810 | 317 | 11,610 | 312 | | | | | | |
| 100 | 6.9 | 12,180 | 327 | 12,030 | 323 | | | | | | |
| 125 | 8.6 | 11,730 | 315 | | | | | | | | |

Blank areas indicate where maximum operating inlet pressure for a given orifice size is exceeded.

Table 58. Types CS805 and CS806 Internal Registration Flow Capacities for 1 psig / 0.07 bar Setpoint for 2 in. / DN 50 Body Size at 10% Accuracy

| SETPOINT | ACCURACY: + / - 10% GAUGE | | SPRING | |
|----------|---------------------------|--------------|-------------------|--------------------------|
| | Droop | Boost | Set Range | Part Number / Color |
| 1 psig | -2.8 in. w.c. | 2.8 in. w.c. | 14 to 30 in. w.c. | GE30341X012 / Dark Green |
| 0.07 bar | -7 mbar | 7 mbar | 35 to 75 mbar | |

| CAPACITIES IN SCFH / Nm ³ /h OF 0.6 SPECIFIC GRAVITY NATURAL GAS | | | | | | | | | | | |
|---|------|--------------------------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|
| Inlet Pressure | | Orifice Size, In. / mm | | | | | | | | | |
| | | 3/8 / 9.5 | | 1/2 / 13 | | 5/8 / 16 | | 3/4 / 19 | | 7/8 / 22 | |
| | | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h |
| psig | bar | Body Size: 2 in. / DN 50 | | | | | | | | | |
| 2 | 0.14 | 760 | 20.4 | 1330 | 35.7 | 1600 | 43.0 | 1600 | 43.0 | 1880 | 50.5 |
| 3 | 0.21 | 1030 | 27.7 | 1460 | 39.2 | 1810 | 48.6 | 2360 | 63.4 | 2820 | 75.7 |
| 5 | 0.34 | 1640 | 44.0 | 2160 | 58.0 | 2690 | 72.2 | 3340 | 89.7 | 3930 | 106 |
| 10 | 0.69 | 2570 | 69.0 | 3530 | 94.8 | 4320 | 116 | 5710 | 153 | 6550 | 176 |
| 15 | 1.0 | 3170 | 85.1 | 4740 | 127 | 6340 | 170 | 7390 | 198 | 8950 | 240 |
| 20 | 1.4 | 4140 | 111 | 5630 | 151 | 7800 | 209 | 8790 | 236 | 10,970 | 295 |
| 25 | 1.7 | 4940 | 133 | 7110 | 191 | 9920 | 266 | 10,830 | 291 | 12,140 | 326 |
| 30 | 2.1 | 5390 | 145 | 8180 | 220 | 11,560 | 310 | 12,680 | 340 | 13,260 | 356 |
| 40 | 2.8 | 7030 | 189 | 11,300 | 303 | 13,640 | 366 | 15,280 | 410 | 16,180 | 434 |
| 50 | 3.4 | 9170 | 246 | 13,520 | 363 | 16,130 | 433 | 18,330 | 492 | 18,760 | 504 |
| 60 | 4.1 | 10,570 | 284 | 15,690 | 421 | 18,780 | 504 | 20,150 | 541 | | |
| 80 | 5.5 | 13,500 | 362 | 19,670 | 528 | | | | | | |
| 100 | 6.9 | 16,670 | 448 | 22,360 | 600 | | | | | | |
| 125 | 8.6 | 19,890 | 534 | | | | | | | | |

Blank areas indicate where maximum operating inlet pressure for a given orifice size is exceeded.

Table 59. Types CS805 and CS806 Internal Registration Flow Capacities for 1 psig / 0.07 bar Setpoint for 1-1/2 in. / DN 40 Body Size at 20% Accuracy

| SETPOINT | ACCURACY: + / - 20% GAUGE | | SPRING | |
|----------|---------------------------|--------------|-------------------|--------------------------|
| | Drop | Boost | Set Range | Part Number / Color |
| 1 psig | -5.5 in. w.c. | 5.5 in. w.c. | 14 to 30 in. w.c. | GE30341X012 / Dark Green |
| 0.07 bar | -14 mbar | 14 mbar | 35 to 75 mbar | |

| CAPACITIES IN SCFH / Nm ³ /h OF 0.6 SPECIFIC GRAVITY NATURAL GAS | | | | | | | | | | | |
|---|------|------------------------------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|
| Inlet Pressure | | Orifice Size, In. / mm | | | | | | | | | |
| | | 3/8 / 9.5 | | 1/2 / 13 | | 5/8 / 16 | | 3/4 / 19 | | 7/8 / 22 | |
| | | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h |
| psig | bar | Body Size: 1-1/2 in. / DN 40 | | | | | | | | | |
| 2 | 0.14 | 1120 | 30.1 | 1710 | 45.9 | 2130 | 57.2 | 2600 | 69.8 | 2910 | 78.1 |
| 3 | 0.21 | 1620 | 43.5 | 2320 | 62.3 | 2510 | 67.4 | 3590 | 96.4 | 3750 | 101 |
| 5 | 0.34 | 2250 | 60.4 | 3090 | 83.0 | 3650 | 98.0 | 5190 | 139 | 5230 | 140 |
| 10 | 0.69 | 3150 | 84.6 | 4610 | 124 | 6320 | 170 | 7720 | 207 | 8330 | 224 |
| 15 | 1.0 | 3990 | 107 | 6310 | 169 | 8480 | 228 | 9390 | 252 | 10,000 | 269 |
| 20 | 1.4 | 4970 | 133 | 7600 | 204 | 9950 | 267 | 10,710 | 288 | 11,480 | 308 |
| 25 | 1.7 | 5490 | 147 | 8860 | 238 | 11,100 | 298 | 11,880 | 319 | 12,340 | 331 |
| 30 | 2.1 | 6590 | 177 | 9910 | 266 | 12,110 | 325 | 12,120 | 325 | 13,160 | 353 |
| 40 | 2.8 | 7890 | 212 | 11,640 | 313 | 13,000 | 349 | 13,590 | 365 | 13,920 | 374 |
| 50 | 3.4 | 9350 | 251 | 12,680 | 340 | 14,120 | 379 | 13,940 | 374 | 14,440 | 388 |
| 60 | 4.1 | 10,860 | 292 | 13,000 | 349 | 14,540 | 390 | 14,080 | 378 | | |
| 80 | 5.5 | 13,310 | 357 | 13,780 | 370 | | | | | | |
| 100 | 6.9 | 13,750 | 369 | 14,360 | 386 | | | | | | |
| 125 | 8.6 | 13,750 | 369 | | | | | | | | |

Blank areas indicate where maximum operating inlet pressure for a given orifice size is exceeded.

Table 60. Types CS805 and CS806 Internal Registration Flow Capacities for 1 psig / 0.07 bar Setpoint for 2 in. / DN 50 Body Size at 20% Accuracy

| SETPOINT | ACCURACY: + / - 20% GAUGE | | SPRING | |
|----------|---------------------------|--------------|-------------------|--------------------------|
| | Drop | Boost | Set Range | Part Number / Color |
| 1 psig | -5.5 in. w.c. | 5.5 in. w.c. | 14 to 30 in. w.c. | GE30341X012 / Dark Green |
| 0.07 bar | -14 mbar | 14 mbar | 35 to 75 mbar | |

| CAPACITIES IN SCFH / Nm ³ /h OF 0.6 SPECIFIC GRAVITY NATURAL GAS | | | | | | | | | | | |
|---|------|--------------------------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|
| Inlet Pressure | | Orifice Size, In. / mm | | | | | | | | | |
| | | 3/8 / 9.5 | | 1/2 / 13 | | 5/8 / 16 | | 3/4 / 19 | | 7/8 / 22 | |
| | | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h |
| psig | bar | Body Size: 2 in. / DN 50 | | | | | | | | | |
| 2 | 0.14 | 1100 | 29.5 | 1590 | 42.7 | 2290 | 61.5 | 2670 | 71.7 | 2630 | 70.6 |
| 3 | 0.21 | 1390 | 37.3 | 2160 | 58.0 | 2970 | 79.7 | 3470 | 93.2 | 3730 | 100 |
| 5 | 0.34 | 2020 | 54.2 | 2970 | 79.7 | 4270 | 115 | 4770 | 128 | 5350 | 144 |
| 10 | 0.69 | 3230 | 86.7 | 4880 | 131 | 6870 | 184 | 7550 | 203 | 8520 | 229 |
| 15 | 1.0 | 3990 | 107 | 6190 | 166 | 8530 | 229 | 9470 | 254 | 10,990 | 295 |
| 20 | 1.4 | 4930 | 132 | 7380 | 198 | 10,690 | 287 | 11,190 | 300 | 13,620 | 366 |
| 25 | 1.7 | 5650 | 152 | 9190 | 247 | 12,240 | 329 | 12,630 | 339 | 14,680 | 394 |
| 30 | 2.1 | 6380 | 171 | 10,090 | 271 | 13,990 | 376 | 15,010 | 403 | 16,100 | 432 |
| 40 | 2.8 | 7830 | 210 | 12,900 | 346 | 16,080 | 432 | 18,220 | 489 | 19,340 | 519 |
| 50 | 3.4 | 9430 | 253 | 15,050 | 404 | 18,110 | 486 | 21,310 | 572 | 22,030 | 591 |
| 60 | 4.1 | 10,870 | 292 | 17,330 | 465 | 21,540 | 578 | 22,540 | 605 | | |
| 80 | 5.5 | 13,820 | 371 | 21,480 | 577 | | | | | | |
| 100 | 6.9 | 16,960 | 455 | 24,650 | 662 | | | | | | |
| 125 | 8.6 | 20,290 | 545 | | | | | | | | |

Blank areas indicate where maximum operating inlet pressure for a given orifice size is exceeded.

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Table 61. Types CS825 and CS826 Internal Registration Flow Capacities for 2 psig / 0.14 bar Setpoint at 1% ABS Accuracy

| SETPOINT | ACCURACY: + / - 1% ABS | | SPRING | |
|----------|------------------------|-----------|------------------|-------------------------|
| | Drop | Boost | Set Range | Part Number / Color |
| 2 psig | -0.17 psig | 0.17 psig | 1 to 2.5 psig | GE30342X012 / Dark Blue |
| 0.14 bar | -12 mbar | 12 mbar | 0.07 to 0.17 bar | |

| CAPACITIES IN SCFH / Nm ³ /h OF 0.6 SPECIFIC GRAVITY NATURAL GAS | | | | | | | | | | | |
|---|------|------------------------------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|
| Inlet Pressure | | Orifice Size, In. / mm | | | | | | | | | |
| | | 3/8 / 9.5 | | 1/2 / 13 | | 5/8 / 16 | | 3/4 / 19 | | 7/8 / 22 | |
| | | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h |
| psig | bar | Body Size: 1-1/2 in. / DN 40 | | | | | | | | | |
| 3 | 0.21 | 690 | 19.8 | 1490 | 42.3 | 1070 | 30.5 | 1440 | 40.9 | 1660 | 47.2 |
| 5 | 0.34 | 860 | 24.4 | 1490 | 42.3 | 1840 | 52.4 | 2190 | 62.2 | 2490 | 70.5 |
| 10 | 0.69 | 1880 | 53.4 | 2560 | 72.7 | 3140 | 89.1 | 3980 | 113 | 4770 | 135 |
| 15 | 1.0 | 2510 | 71.2 | 3650 | 103 | 4280 | 121 | 5810 | 165 | 6300 | 179 |
| 20 | 1.4 | 3140 | 89.2 | 4710 | 134 | 5960 | 169 | 7950 | 225 | 8030 | 228 |
| 25 | 1.7 | 3920 | 111 | 5730 | 162 | 7210 | 204 | 8490 | 241 | 8880 | 252 |
| 30 | 2.1 | 4450 | 126 | 6890 | 195 | 7970 | 226 | 9260 | 262 | 10,420 | 295 |
| 40 | 2.8 | 6250 | 177 | 9020 | 256 | 10,170 | 288 | 11,090 | 314 | 11,770 | 333 |
| 50 | 3.4 | 7710 | 218 | 10,800 | 306 | 12,150 | 344 | 12,880 | 365 | 13,750 | 390 |
| 60 | 4.1 | 9580 | 271 | 11,390 | 323 | 13,100 | 371 | 13,210 | 374 | | |
| 80 | 5.5 | 11,570 | 328 | 13,200 | 374 | | | | | | |
| 100 | 6.9 | 12,990 | 368 | 14,020 | 397 | | | | | | |
| 125 | 8.6 | 13,320 | 377 | | | | | | | | |
| psig | bar | Body Size: 2 in. / DN 50 | | | | | | | | | |
| 3 | 0.21 | 720 | 20.5 | 930 | 26.4 | 1120 | 31.8 | 1410 | 40.1 | 1670 | 47.3 |
| 5 | 0.34 | 1100 | 31.1 | 1530 | 43.5 | 1860 | 52.8 | 2350 | 66.8 | 2720 | 77.1 |
| 10 | 0.69 | 1840 | 52.1 | 2260 | 64.1 | 3590 | 102 | 4430 | 126 | 5670 | 161 |
| 15 | 1.0 | 2560 | 72.6 | 3760 | 107 | 5520 | 157 | 7120 | 202 | 8710 | 247 |
| 20 | 1.4 | 3290 | 93.2 | 4930 | 140 | 7500 | 212 | 9730 | 276 | 11,600 | 329 |
| 25 | 1.7 | 4060 | 115 | 6520 | 185 | 10,010 | 284 | 12,580 | 356 | 14,370 | 407 |
| 30 | 2.1 | 4680 | 133 | 8120 | 230 | 11,840 | 335 | 14,820 | 420 | 17,200 | 487 |
| 40 | 2.8 | 6730 | 191 | 11,580 | 328 | 16,140 | 457 | 19,140 | 542 | 21,940 | 621 |
| 50 | 3.4 | 8800 | 249 | 14,080 | 399 | 19,900 | 564 | 23,390 | 663 | 26,300 | 745 |
| 60 | 4.1 | 10,580 | 300 | 16,950 | 480 | 24,370 | 690 | 26,970 | 764 | | |
| 80 | 5.5 | 13,590 | 385 | 22,090 | 626 | | | | | | |
| 100 | 6.9 | 16,680 | 472 | 27,290 | 773 | | | | | | |
| 125 | 8.6 | 20,280 | 574 | | | | | | | | |

Blank areas indicate where maximum operating inlet pressure for a given orifice size is exceeded.

Table 62. Types CS825 and CS826 Internal Registration Flow Capacities for 2 psig / 0.14 bar Setpoint at 10% Accuracy

| SETPOINT | ACCURACY: + / - 10% GAUGE | | SPRING | |
|----------|---------------------------|-----------|------------------|-------------------------|
| | Drop | Boost | Set Range | Part Number / Color |
| 2 psig | -0.20 psig | 0.20 psig | 1 to 2.5 psig | GE30342X012 / Dark Blue |
| 0.14 bar | -14 mbar | 14 mbar | 0.07 to 0.17 bar | |

| CAPACITIES IN SCFH / Nm ³ /h OF 0.6 SPECIFIC GRAVITY NATURAL GAS | | | | | | | | | | | |
|---|------|------------------------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|
| Inlet Pressure | | Orifice Size, In. / mm | | | | | | | | | |
| | | 3/8 / 9.5 | | 1/2 / 13 | | 5/8 / 16 | | 3/4 / 19 | | 7/8 / 22 | |
| psig | bar | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h |
| Body Size: 1-1/2 in. / DN 40 | | | | | | | | | | | |
| 3 | 0.21 | 740 | 19.9 | 1580 | 42.4 | 1230 | 33.0 | 1620 | 43.5 | 1860 | 49.9 |
| 5 | 0.34 | 990 | 26.6 | 1720 | 46.2 | 2020 | 54.2 | 2730 | 73.3 | 2870 | 77.0 |
| 10 | 0.69 | 2040 | 54.8 | 2970 | 79.7 | 3490 | 93.7 | 4820 | 129 | 5290 | 142 |
| 15 | 1.0 | 2890 | 77.6 | 4170 | 112 | 5000 | 134 | 6510 | 175 | 7010 | 188 |
| 20 | 1.4 | 3600 | 96.6 | 5350 | 144 | 6580 | 177 | 8620 | 231 | 8690 | 233 |
| 25 | 1.7 | 4370 | 117 | 6430 | 173 | 7950 | 213 | 9240 | 248 | 9530 | 256 |
| 30 | 2.1 | 4960 | 133 | 7690 | 206 | 9030 | 242 | 10,240 | 275 | 11,060 | 297 |
| 40 | 2.8 | 6800 | 183 | 9790 | 263 | 11,040 | 296 | 11,890 | 319 | 12,590 | 338 |
| 50 | 3.4 | 8140 | 219 | 11,460 | 308 | 12,760 | 343 | 13,290 | 357 | 14,450 | 388 |
| 60 | 4.1 | 9850 | 264 | 12,100 | 325 | 13,760 | 369 | 14,020 | 376 | | |
| 80 | 5.5 | 12,110 | 325 | 13,830 | 371 | | | | | | |
| 100 | 6.9 | 13,720 | 368 | 14,800 | 397 | | | | | | |
| 125 | 8.6 | 13,880 | 373 | | | | | | | | |
| Body Size: 2 in. / DN 50 | | | | | | | | | | | |
| 3 | 0.21 | 810 | 21.7 | 1080 | 29.0 | 1340 | 36.0 | 1560 | 41.9 | 1780 | 47.8 |
| 5 | 0.34 | 1240 | 33.3 | 1760 | 47.2 | 2170 | 58.3 | 2750 | 73.8 | 3170 | 85.1 |
| 10 | 0.69 | 2100 | 56.4 | 2670 | 71.7 | 4130 | 111 | 4910 | 132 | 6300 | 169 |
| 15 | 1.0 | 2900 | 77.9 | 4220 | 113 | 6230 | 167 | 7920 | 213 | 9310 | 250 |
| 20 | 1.4 | 3640 | 97.7 | 5770 | 155 | 8400 | 226 | 10,470 | 281 | 12,460 | 335 |
| 25 | 1.7 | 4530 | 122 | 7180 | 193 | 10,660 | 286 | 13,300 | 357 | 14,970 | 402 |
| 30 | 2.1 | 5190 | 139 | 8840 | 237 | 12,270 | 330 | 15,280 | 410 | 17,900 | 481 |
| 40 | 2.8 | 7140 | 192 | 12,040 | 323 | 16,610 | 446 | 19,630 | 527 | 22,700 | 609 |
| 50 | 3.4 | 9020 | 242 | 14,530 | 390 | 20,410 | 548 | 23,830 | 640 | 26,840 | 721 |
| 60 | 4.1 | 10,720 | 288 | 17,070 | 458 | 24,980 | 671 | 27,450 | 737 | | |
| 80 | 5.5 | 13,660 | 367 | 22,220 | 597 | | | | | | |
| 100 | 6.9 | 16,760 | 450 | 27,350 | 734 | | | | | | |
| 125 | 8.6 | 20,350 | 546 | | | | | | | | |

Blank areas indicate where maximum operating inlet pressure for a given orifice size is exceeded.

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Table 63. Types CS825 and CS826 Internal Registration Flow Capacities for 2 psig / 0.14 bar Setpoint at 20% Accuracy

| SETPOINT | ACCURACY: + / - 20% GAUGE | | SPRING | |
|----------|---------------------------|-----------|------------------|-------------------------|
| | Drop | Boost | Set Range | Part Number / Color |
| 2 psig | -0.40 psig | 0.40 psig | 1 to 2.5 psig | GE30342X012 / Dark Blue |
| 0.14 bar | -28 mbar | 28 mbar | 0.07 to 0.17 bar | |

| CAPACITIES IN SCFH / Nm ³ /h OF 0.6 SPECIFIC GRAVITY NATURAL GAS | | | | | | | | | | | |
|---|------|------------------------------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|
| Inlet Pressure | | Orifice Size, In. / mm | | | | | | | | | |
| | | 3/8 / 9.5 | | 1/2 / 13 | | 5/8 / 16 | | 3/4 / 19 | | 7/8 / 22 | |
| | | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h |
| psig | bar | Body Size: 1-1/2 in. / DN 40 | | | | | | | | | |
| 3 | 0.21 | 1170 | 31.4 | 2020 | 54.2 | 2150 | 57.7 | 2570 | 69.0 | 3110 | 83.5 |
| 5 | 0.34 | 1770 | 47.5 | 2540 | 68.2 | 3130 | 84.0 | 4100 | 110 | 4520 | 121 |
| 10 | 0.69 | 3080 | 82.7 | 4420 | 119 | 5370 | 144 | 6800 | 183 | 7330 | 197 |
| 15 | 1.0 | 3880 | 104 | 5600 | 150 | 7180 | 193 | 8730 | 234 | 9850 | 264 |
| 20 | 1.4 | 4830 | 130 | 6970 | 187 | 9130 | 245 | 10,390 | 279 | 11,410 | 306 |
| 25 | 1.7 | 5740 | 154 | 8500 | 228 | 10,630 | 285 | 12,150 | 326 | 12,640 | 339 |
| 30 | 2.1 | 6180 | 166 | 9670 | 260 | 11,650 | 313 | 13,330 | 358 | 14,210 | 382 |
| 40 | 2.8 | 7810 | 210 | 12,190 | 327 | 13,870 | 372 | 15,330 | 412 | 15,860 | 426 |
| 50 | 3.4 | 9250 | 248 | 13,800 | 371 | 15,660 | 420 | 16,330 | 438 | 17,440 | 468 |
| 60 | 4.1 | 10,570 | 284 | 14,780 | 397 | 16,310 | 438 | 17,480 | 469 | | |
| 80 | 5.5 | 13,170 | 354 | 16,800 | 451 | | | | | | |
| 100 | 6.9 | 15,740 | 423 | 18,200 | 489 | | | | | | |
| 125 | 8.6 | 17,430 | 468 | | | | | | | | |
| psig | bar | Body Size: 2 in. / DN 50 | | | | | | | | | |
| 3 | 0.21 | 1070 | 28.7 | 1470 | 39.5 | 2080 | 55.8 | 2540 | 68.2 | 2710 | 72.8 |
| 5 | 0.34 | 1760 | 47.2 | 2660 | 71.4 | 3420 | 91.8 | 4130 | 111 | 4660 | 125 |
| 10 | 0.69 | 2860 | 76.8 | 4260 | 114 | 5930 | 159 | 7190 | 193 | 8360 | 224 |
| 15 | 1.0 | 3880 | 104 | 5950 | 160 | 8200 | 220 | 9920 | 266 | 11,340 | 304 |
| 20 | 1.4 | 4740 | 127 | 7360 | 198 | 10,200 | 274 | 12,310 | 331 | 14,410 | 387 |
| 25 | 1.7 | 5590 | 150 | 8830 | 237 | 12,560 | 337 | 15,100 | 405 | 16,980 | 456 |
| 30 | 2.1 | 6310 | 169 | 10,150 | 273 | 14,290 | 384 | 17,140 | 460 | 19,320 | 519 |
| 40 | 2.8 | 7820 | 210 | 12,990 | 349 | 18,360 | 493 | 21,510 | 577 | 23,500 | 631 |
| 50 | 3.4 | 9370 | 252 | 15,320 | 411 | 22,350 | 600 | 25,450 | 683 | 28,260 | 759 |
| 60 | 4.1 | 10,860 | 292 | 17,710 | 475 | 26,420 | 709 | 29,670 | 797 | | |
| 80 | 5.5 | 13,750 | 369 | 22,830 | 613 | | | | | | |
| 100 | 6.9 | 16,800 | 451 | 27,610 | 741 | | | | | | |
| 125 | 8.6 | 20,510 | 551 | | | | | | | | |

Blank areas indicate where maximum operating inlet pressure for a given orifice size is exceeded.

Table 64. Types CS825 and CS826 Internal Registration Flow Capacities for 5 psig / 0.34 bar Setpoint at 1% ABS Accuracy

| SETPOINT | ACCURACY: + / - 1% ABS | | SPRING | |
|----------|------------------------|-----------|------------------|----------------------|
| | Drop | Boost | Set Range | Part Number / Color |
| 5 psig | -0.20 psig | 0.20 psig | 2.5 to 5.5 psig | GE30343X012 / Yellow |
| 0.34 bar | -14 mbar | 14 mbar | 0.17 to 0.38 bar | |

| CAPACITIES IN SCFH / Nm ³ /h OF 0.6 SPECIFIC GRAVITY NATURAL GAS | | | | | | | | | | | |
|---|------|------------------------------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|
| Inlet Pressure | | Orifice Size, In. / mm | | | | | | | | | |
| | | 3/8 / 9.5 | | 1/2 / 13 | | 5/8 / 16 | | 3/4 / 19 | | 7/8 / 22 | |
| | | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h |
| psig | bar | Body Size: 1-1/2 in. / DN 40 | | | | | | | | | |
| 10 | 0.69 | 770 | 21.9 | 1030 | 29.2 | 1370 | 39.0 | 1790 | 50.8 | 2010 | 57.0 |
| 15 | 1.0 | 1190 | 33.9 | 1720 | 48.9 | 2140 | 60.8 | 2560 | 72.5 | 2560 | 72.5 |
| 20 | 1.4 | 1500 | 42.6 | 1940 | 55.1 | 2710 | 77.0 | 3100 | 88.0 | 3500 | 99.3 |
| 25 | 1.7 | 1680 | 47.6 | 2350 | 66.6 | 3340 | 94.8 | 3920 | 111 | 4400 | 125 |
| 30 | 2.1 | 2160 | 61.4 | 2740 | 77.8 | 3840 | 109 | 4910 | 139 | 5040 | 143 |
| 40 | 2.8 | 2680 | 76.0 | 3860 | 109 | 4830 | 137 | 6520 | 185 | 6560 | 186 |
| 50 | 3.4 | 3420 | 96.9 | 4650 | 132 | 6040 | 171 | 7580 | 215 | 7980 | 226 |
| 60 | 4.1 | 4050 | 115 | 5780 | 164 | 7400 | 210 | 8950 | 254 | | |
| 80 | 5.5 | 5210 | 148 | 7660 | 217 | | | | | | |
| 100 | 6.9 | 6810 | 193 | 8940 | 253 | | | | | | |
| 125 | 8.6 | 7410 | 210 | | | | | | | | |
| psig | bar | Body Size: 2 in. / DN 50 | | | | | | | | | |
| 10 | 0.69 | 920 | 26.1 | 1220 | 34.7 | 1370 | 38.9 | 1730 | 49.0 | 1960 | 55.6 |
| 15 | 1.0 | 1300 | 37.1 | 1750 | 49.6 | 2020 | 57.5 | 2510 | 71.1 | 2930 | 83.0 |
| 20 | 1.4 | 1660 | 47.1 | 2180 | 61.7 | 2700 | 76.5 | 3220 | 91.3 | 3890 | 110 |
| 25 | 1.7 | 1930 | 54.8 | 2540 | 71.9 | 3140 | 89.1 | 4110 | 117 | 5490 | 155 |
| 30 | 2.1 | 2290 | 65.1 | 3060 | 86.8 | 3860 | 110 | 5270 | 149 | 6930 | 196 |
| 40 | 2.8 | 2870 | 81.5 | 4000 | 113 | 5370 | 152 | 8050 | 228 | 10,840 | 307 |
| 50 | 3.4 | 3510 | 99.6 | 5460 | 155 | 7860 | 223 | 10,990 | 311 | 14,620 | 414 |
| 60 | 4.1 | 4160 | 118 | 7250 | 205 | 11,130 | 315 | 15,400 | 436 | | |
| 80 | 5.5 | 6360 | 180 | 11,380 | 322 | | | | | | |
| 100 | 6.9 | 9640 | 273 | 16,370 | 464 | | | | | | |
| 125 | 8.6 | 13,250 | 375 | | | | | | | | |

Blank areas indicate where maximum operating inlet pressure for a given orifice size is exceeded.

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Table 65. Types CS825 and CS826 Internal Registration Flow Capacities for 5 psig / 0.34 bar Setpoint at 10% Accuracy

| SETPOINT | ACCURACY: + / - 10% GAUGE | | SPRING | |
|----------|---------------------------|-----------|------------------|----------------------|
| | Droop | Boost | Set Range | Part Number / Color |
| 5 psig | -0.50 psig | 0.50 psig | 2.5 to 5.5 psig | GE30343X012 / Yellow |
| 0.34 bar | -34 mbar | 34 mbar | 0.17 to 0.38 bar | |

| CAPACITIES IN SCFH / Nm ³ /h OF 0.6 SPECIFIC GRAVITY NATURAL GAS | | | | | | | | | | | |
|---|------|------------------------------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|
| Inlet Pressure | | Orifice Size, In. / mm | | | | | | | | | |
| | | 3/8 / 9.5 | | 1/2 / 13 | | 5/8 / 16 | | 3/4 / 19 | | 7/8 / 22 | |
| | | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h |
| | | Body Size: 1-1/2 in. / DN 40 | | | | | | | | | |
| psig | bar | | | | | | | | | | |
| 10 | 0.69 | 1750 | 47.0 | 2360 | 63.4 | 2860 | 76.8 | 3630 | 97.4 | 4290 | 115 |
| 15 | 1.0 | 2400 | 64.4 | 3530 | 94.8 | 4370 | 117 | 5400 | 145 | 5960 | 160 |
| 20 | 1.4 | 3110 | 83.5 | 4270 | 115 | 5660 | 152 | 6630 | 178 | 7540 | 202 |
| 25 | 1.7 | 3640 | 97.7 | 5320 | 143 | 6910 | 186 | 7870 | 211 | 8920 | 240 |
| 30 | 2.1 | 4350 | 117 | 6240 | 168 | 7950 | 213 | 9530 | 256 | 10,490 | 282 |
| 40 | 2.8 | 5490 | 147 | 7730 | 208 | 9760 | 262 | 11,740 | 315 | 12,770 | 343 |
| 50 | 3.4 | 6850 | 184 | 9270 | 249 | 11,900 | 320 | 13,230 | 355 | 14,360 | 386 |
| 60 | 4.1 | 7970 | 214 | 11,280 | 303 | 13,470 | 362 | 15,070 | 405 | | |
| 80 | 5.5 | 10,650 | 286 | 13,750 | 369 | | | | | | |
| 100 | 6.9 | 12,440 | 334 | 15,460 | 415 | | | | | | |
| 125 | 8.6 | 14,500 | 389 | | | | | | | | |
| | | Body Size: 2 in. / DN 50 | | | | | | | | | |
| psig | bar | | | | | | | | | | |
| 10 | 0.69 | 1730 | 46.4 | 2400 | 64.4 | 2840 | 76.2 | 3620 | 97.2 | 4060 | 109 |
| 15 | 1.0 | 2500 | 67.1 | 3410 | 91.5 | 4300 | 115 | 5360 | 144 | 6490 | 174 |
| 20 | 1.4 | 3230 | 86.7 | 4360 | 117 | 5610 | 151 | 6950 | 187 | 8760 | 235 |
| 25 | 1.7 | 3810 | 102 | 5280 | 142 | 6860 | 184 | 8960 | 241 | 11,030 | 296 |
| 30 | 2.1 | 4410 | 118 | 6340 | 170 | 8430 | 226 | 10,780 | 289 | 13,080 | 351 |
| 40 | 2.8 | 5550 | 149 | 8640 | 232 | 11,810 | 317 | 15,280 | 410 | 17,290 | 464 |
| 50 | 3.4 | 6980 | 187 | 11,120 | 299 | 15,070 | 405 | 19,630 | 527 | 21,680 | 582 |
| 60 | 4.1 | 8750 | 235 | 13,630 | 366 | 18,300 | 491 | 23,260 | 624 | | |
| 80 | 5.5 | 11,970 | 321 | 18,590 | 499 | | | | | | |
| 100 | 6.9 | 15,030 | 404 | 23,560 | 633 | | | | | | |
| 125 | 8.6 | 19,350 | 520 | | | | | | | | |

Blank areas indicate where maximum operating inlet pressure for a given orifice size is exceeded.

Table 66. Types CS825 and CS826 Internal Registration Flow Capacities for 5 psig / 0.34 bar Setpoint at 20% Accuracy

| SETPOINT | ACCURACY: + / - 20% GAUGE | | SPRING | |
|----------|---------------------------|----------|------------------|----------------------|
| | Droop | Boost | Set Range | Part Number / Color |
| 5 psig | -1.0 psig | 1.0 psig | 2.5 to 5.5 psig | GE30343X012 / Yellow |
| 0.34 bar | -69 mbar | 69 mbar | 0.17 to 0.38 bar | |

| CAPACITIES IN SCFH / Nm ³ /h OF 0.6 SPECIFIC GRAVITY NATURAL GAS | | | | | | | | | | | |
|---|------|------------------------------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|
| Inlet Pressure | | Orifice Size, In. / mm | | | | | | | | | |
| | | 3/8 / 9.5 | | 1/2 / 13 | | 5/8 / 16 | | 3/4 / 19 | | 7/8 / 22 | |
| | | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h | SCFH | Nm ³ /h |
| | | Body Size: 1-1/2 in. / DN 40 | | | | | | | | | |
| psig | bar | | | | | | | | | | |
| 10 | 0.69 | 2460 | 66.0 | 3650 | 98.0 | 4680 | 126 | 5880 | 158 | 6610 | 177 |
| 15 | 1.0 | 3460 | 92.9 | 5200 | 140 | 6520 | 175 | 8240 | 221 | 9120 | 245 |
| 20 | 1.4 | 4370 | 117 | 6650 | 179 | 8300 | 223 | 10,120 | 272 | 11,110 | 298 |
| 25 | 1.7 | 5220 | 140 | 7700 | 207 | 10,020 | 269 | 12,050 | 324 | 13,400 | 360 |
| 30 | 2.1 | 6060 | 163 | 8980 | 241 | 11,440 | 307 | 13,520 | 363 | 15,180 | 408 |
| 40 | 2.8 | 7580 | 204 | 11,060 | 297 | 14,160 | 380 | 16,400 | 440 | 17,610 | 473 |
| 50 | 3.4 | 9150 | 246 | 12,850 | 345 | 16,250 | 436 | 17,880 | 480 | 19,590 | 526 |
| 60 | 4.1 | 10,490 | 282 | 15,370 | 413 | 18,130 | 487 | 20,170 | 542 | | |
| 80 | 5.5 | 13,270 | 356 | 18,410 | 494 | | | | | | |
| 100 | 6.9 | 15,310 | 411 | 20,820 | 559 | | | | | | |
| 125 | 8.6 | 18,730 | 503 | | | | | | | | |
| | | Body Size: 2 in. / DN 50 | | | | | | | | | |
| psig | bar | | | | | | | | | | |
| 10 | 0.69 | 2440 | 65.5 | 3650 | 98.0 | 4660 | 125 | 5740 | 154 | 6660 | 179 |
| 15 | 1.0 | 3540 | 95.0 | 5220 | 140 | 6790 | 182 | 8260 | 222 | 9740 | 262 |
| 20 | 1.4 | 4480 | 120 | 6650 | 179 | 8720 | 234 | 10,670 | 286 | 12,370 | 332 |
| 25 | 1.7 | 5260 | 141 | 7950 | 213 | 10,580 | 284 | 13,090 | 351 | 15,060 | 404 |
| 30 | 2.1 | 6100 | 164 | 9370 | 252 | 12,540 | 337 | 15,440 | 415 | 17,410 | 467 |
| 40 | 2.8 | 7650 | 205 | 11,860 | 318 | 16,150 | 434 | 19,860 | 533 | 22,580 | 606 |
| 50 | 3.4 | 9230 | 248 | 14,510 | 390 | 19,730 | 530 | 24,260 | 651 | 27,210 | 731 |
| 60 | 4.1 | 10,710 | 288 | 16,820 | 452 | 23,710 | 637 | 28,650 | 769 | | |
| 80 | 5.5 | 13,670 | 367 | 21,930 | 589 | | | | | | |
| 100 | 6.9 | 16,630 | 446 | 27,000 | 725 | | | | | | |
| 125 | 8.6 | 20,310 | 545 | | | | | | | | |

Blank areas indicate where maximum operating inlet pressure for a given orifice size is exceeded.

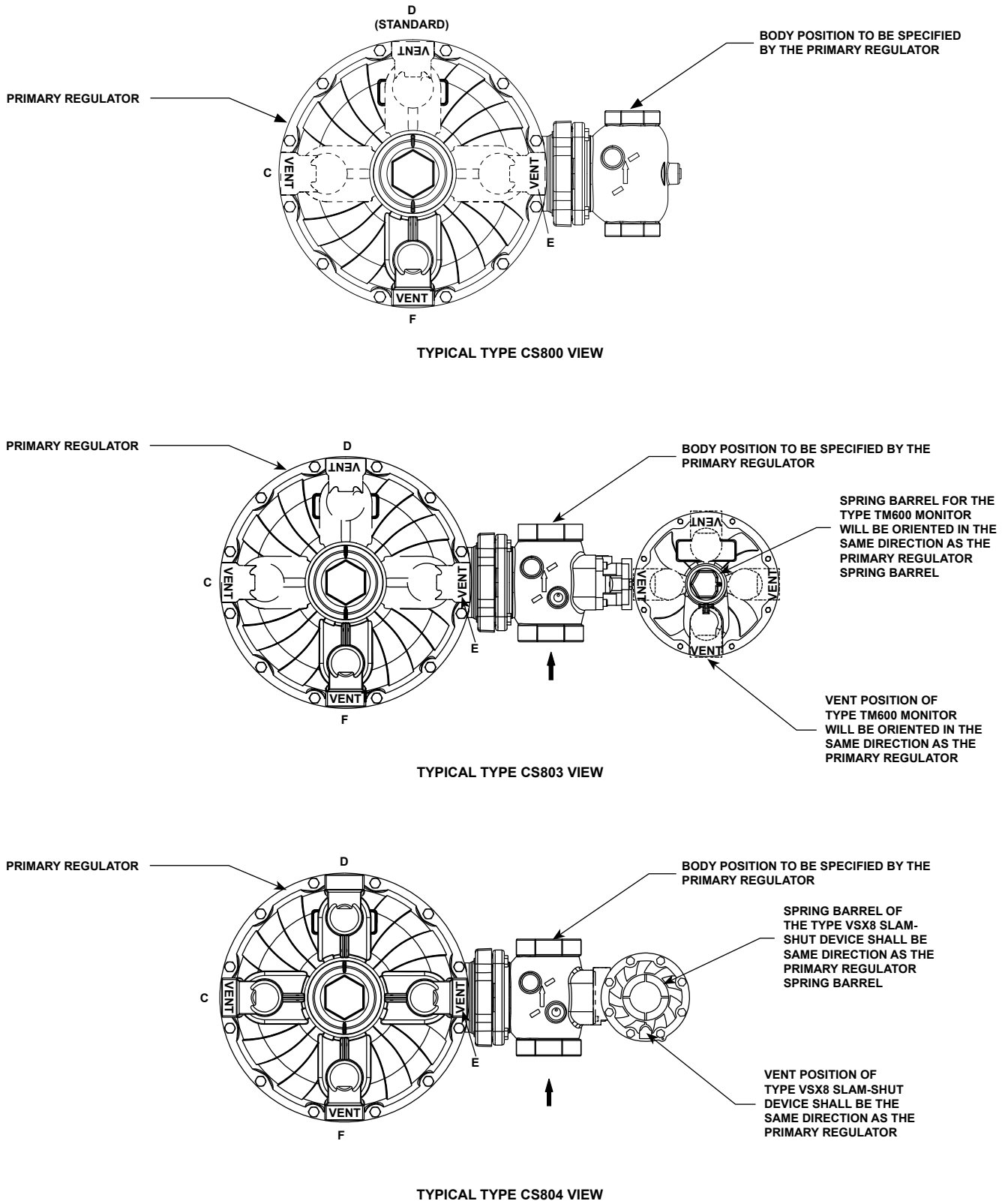


Figure 21. Spring Case Vent and Body Orientation

Bulletin 71.1:CS800

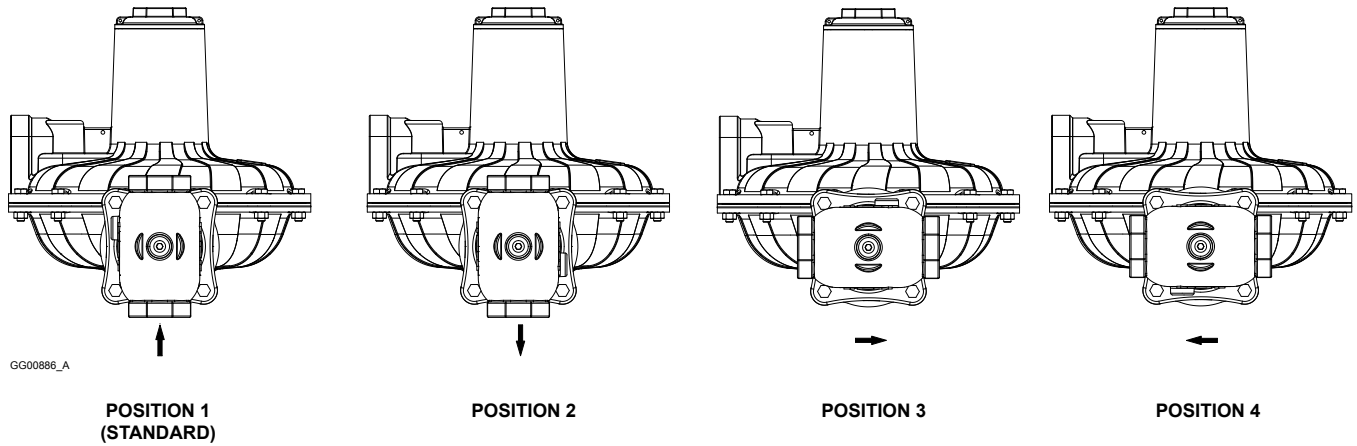
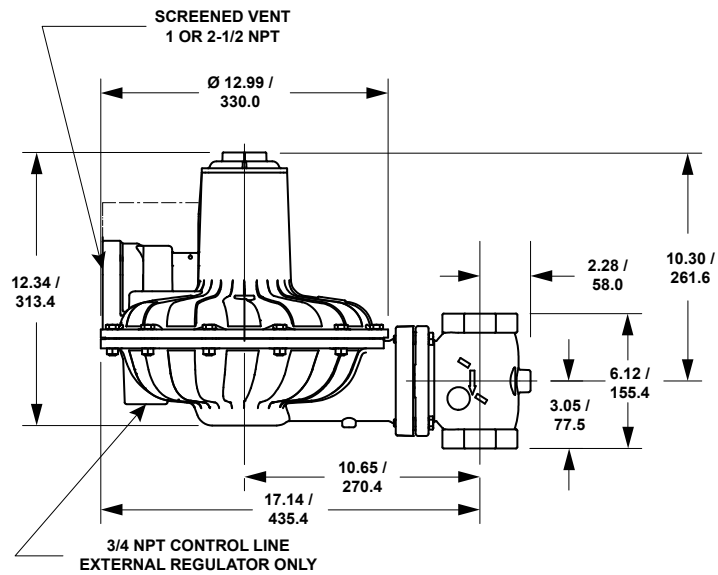


Figure 21. Spring Case Vent and Body Orientation (continued)



TYPE CS800 REGULATOR MAIN VALVE

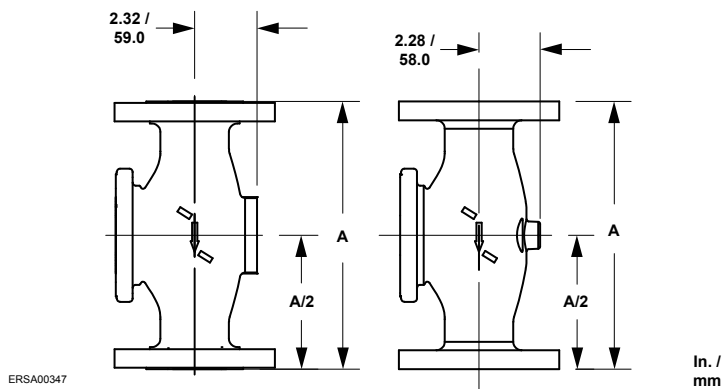
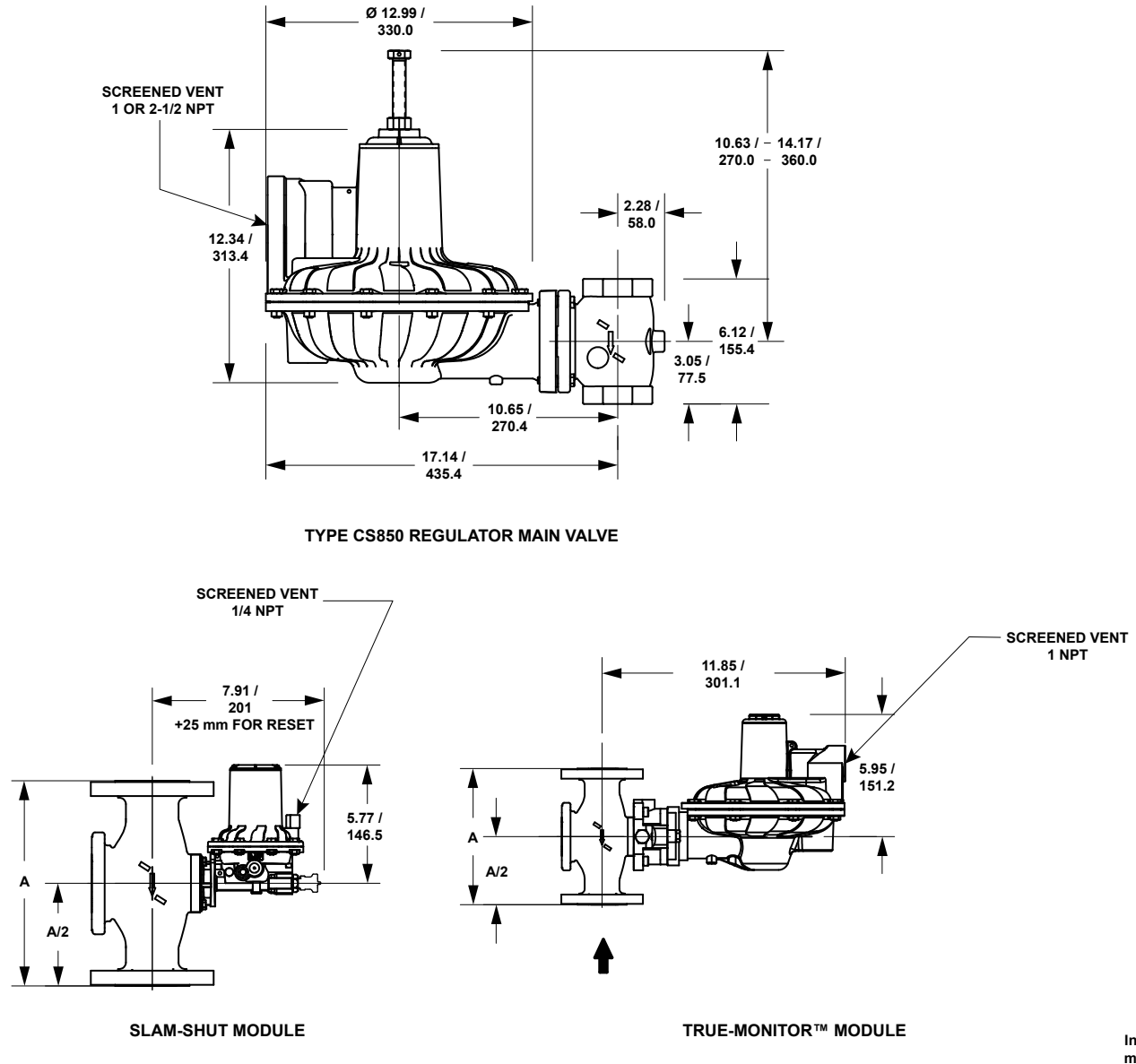


Figure 22. Dimensions



ERSA00347

Figure 22. Dimensions (continued)

Table 67. Dimensions

| BODY SIZE | | END CONNECTION STYLE | DIMENSION A | | | |
|------------------|-------------------|---------------------------------------|-------------|----|-----|-----|
| In. | DN | | In. | | mm | |
| 1-1/4 to 2 | ---- | NPT or Rp | 6.12 | | 155 | |
| 2 ⁽¹⁾ | 50 ⁽¹⁾ | CL125 FF Flange | 7.5 | 10 | 191 | 254 |
| 2 ⁽²⁾ | 50 ⁽²⁾ | CL125 FF, CL150 FF or PN 10/16 Flange | | | | |
| 2 ⁽²⁾ | 50 ⁽²⁾ | CL125 FF or CL150 FF Flange | 10.5 | | 267 | |
| 2 ⁽³⁾ | 50 ⁽³⁾ | CL150 RF or PN 16 Flange | 10 | | 254 | |

1. For Cast Iron.
2. For Ductile Iron.
3. For Steel.

Ordering Information

When ordering, complete the ordering guide on this page. Refer to the Specifications section on page 2. Review the description to the right of each

specification and the information in each referenced table or figure. Specify your choice whenever a selection is offered.

Ordering Guide

Type (See Table 1 for Construction Features)
(Select One)

Stand-Alone Regulator

- CS800IN
- CS800IR
- CS800IT
- CS800IQ
- CS800IL
- CS800EN
- CS800ET
- CS800EL
- CS820IN
- CS820IR
- CS820IT
- CS820IQ
- CS820IL
- CS820EN
- CS820ET
- CS820EL
- CS850IN
- CS850EN

With Integral True-Monitor™ Module

- CS803IN
- CS803IT
- CS803IL
- CS803EN
- CS803ET
- CS803EL
- CS823IN
- CS823IT
- CS823IL
- CS823EN
- CS823ET
- CS823EL

With Type Secondary Seat™ Protection

Without Vent

- CS805IN
- CS805IR
- CS805IT
- CS805IQ
- CS825IN
- CS825IR
- CS825IT
- CS825IQ

With Type Secondary Seat Protection with Vent

- CS806IR
- CS806IQ
- CS826IR
- CS826IQ

With Slam Shut

- CS804IN
- CS804IT
- CS804IL
- CS804EN
- CS804ET
- CS804EL
- CS824IN
- CS824IT
- CS824IL
- CS824EN
- CS824ET
- CS824EL
- CS854IN
- CS854EN

Body Material, Body Size and End Connection
(Select One)

Gray Cast Iron (Types CS800, CS805, CS806, CS820, CS825, CS826 and CS850)

- 1-1/4 NPT***
- 1-1/2 NPT***
- 2 NPT***
- NPS 2 / DN 50, CL125 FF***
Face-to-face dimension:
 - 7.5 in. / 191 mm
 - 10 in. / 254 mm

Gray Cast Iron (Types CS803, CS823, CS804, CS824 and CS854)

- 2 NPT***

Ductile Iron (Types CS800, CS803, CS820, CS823 and CS850)

- 1-1/4 NPT***
- 1-1/2 NPT***
- 2 NPT***
- Rp 1-1/4***
- Rp 1-1/2***
- Rp 2***
- NPS 2 / DN 50, CL125 FF / CL150 FF***
Face-to-face dimension:
 - 7.5 in. / 191 mm
 - 10 in. / 254 mm
 - 10.5 in. / 267 mm
- NPS 2 / DN 50, PN 10/16***
Face-to-face dimension:
 - 7.5 in. / 191 mm
 - 10 in. / 254 mm

Ordering Guide (continued)

Ductile Iron (Types CS804, CS824 and CS854)

- 1-1/2 NPT***
- 2 NPT***
- Rp 2***
- NPS 2 / DN 50, CL125 FF / CL150 FF***
- Face-to-face dimension:*
- 10 in. / 254 mm
- 10.5 in. / 267 mm
- NPS 2 / DN 50, PN 10/16***⁽¹⁾

WCC Steel (Types CS800, CS803, CS820, CS823 and CS850)

- 1-1/4 NPT***
- 1-1/2 NPT***
- 2 NPT***
- Rp 1-1/4***
- Rp 1-1/2***
- Rp 2***
- NPS 2 / DN 50, CL150 RF***⁽¹⁾
- NPS 2 / DN 50, PN 10/16***⁽¹⁾

WCC Steel (Types CS804, CS824 and CS854)

- 1-1/2 NPT***
- 2 NPT***
- Rp 2***
- NPS 2 / DN 50, CL150 RF***⁽¹⁾
- NPS 2 / DN 50, PN 10/16***⁽¹⁾

Outlet Pressure Range

(See Table 4) (Select One)

- 3.5 to 6 in. w.c. / 9 to 15 mbar, Red
- 5.5 to 8.5 in. w.c. / 13 to 21 mbar, Black
- 5.5 to 8.5 in. w.c. / 13 to 21 mbar, Brown
- 8 to 12 in. w.c. / 20 to 30 mbar, Purple
- 10 to 16 in. w.c. / 25 to 40 mbar, White
- 14 to 30 in. w.c. / 35 to 75 mbar, Dark Green
- 1 to 2.5 psig / 69 to 170 mbar, Dark Blue
- 1.5 to 3.5 psig / 100 to 241 mbar, Orange
- 2.5 to 5.5 psig / 170 to 380 mbar, Yellow
- 5 to 10 psig / 345 to 690 mbar, Green with White Stripe

Orifice Size (Select One)

Types CS800, CS804, CS820, CS824, CS850 and CS854

- 1/4 in. / 6.4 mm
- 3/8 in. / 9.5 mm
- 1/2 in. / 13 mm
- 5/8 in. / 16 mm
- 3/4 in. / 19 mm
- 7/8 in. / 22 mm
- 1 in. / 25 mm
- 1-3/8 in. / 34.9 mm

Types CS803 and CS823

- 1/4 in. / 6.4 mm
- 3/8 in. / 9.5 mm
- 1/2 in. / 13 mm
- 5/8 in. / 16 mm
- 3/4 in. / 19 mm
- 7/8 in. / 22 mm
- 1 in. / 25 mm

Types CS805, CS825, CS855, CS806, CS826 and CS856

- 3/8 in. / 9.5 mm
- 1/2 in. / 13 mm
- 5/8 in. / 16 mm
- 3/4 in. / 19 mm
- 7/8 in. / 22 mm

Body Orientation (Select one, see Figure 21)

- Position 1 (standard)***
- Position 2***
- Position 3***
- Position 4***

Vent Orientation (Select one, see Figure 21)

- Position C***
- Position D (standard)***
- Position E***
- Position F***

True-Monitor™ Control Pressure Range (For CS803 and CS823 Series)

(See Tables 7 and 8, select one if applicable)

- 12 to 21 in. w.c. / 30 to 52 mbar, Blue
- 18 to 30 in. w.c. / 45 to 75 mbar, Green
- 26 to 40 in. w.c. / 65 to 99 mbar, Orange
- 1.4 to 2.9 psig / 97 to 200 mbar, Black
- 2.6 to 3.7 psig / 179 to 255 mbar, Purple
- 3.6 to 6 psig / 248 to 414 mbar, Dark Blue
- 5.1 to 7.5 psig / 352 to 517 mbar, Red

Slam-Shut Trip Pressure Setting

(For CS804, CS824 and CS854 Series)

(Select one if applicable and specify setpoint/s, see Tables 12 and 13)

- Overpressure Protection Only (OPSO)**
Supply setpoint required _____

- Overpressure and Underpressure Protection (OPSO/UPSO)**

Supply overpressure setpoint required _____

Supply underpressure setpoint required _____

Options (Select all that apply)

- Enhanced Low Inlet Pressure Flow Performance**
Choose this option for enhanced flow performance for low inlet pressure systems, up to 25 psig / 1.7 bar. This option applies to the 5.5 to 8.5 in. w.c. / 13 to 21 mbar spring range when combined with 2 in. threaded or flanged bodies only.
- Low Relief Start-to-Discharge (STD) Spring**
This option provides a relief start-to-discharge range of 7 to 14 in. w.c. / 17 to 35 mbar above setpoint for the Type CS800IR or CS800IQ with a spring range of up to 10 to 16 in. w.c. / 25 to 40 mbar.
- Closing Cap and Setpoint Seal Wire**

1. 10 in. / 254 mm face-to-face dimension

Bulletin 71.1:CS800

Ordering Guide (continued)

| Regulators Quick Order Guide | |
|---|--|
| *** | Readily Available for Shipment |
| ** | Allow Additional Time for Shipment |
| * | Special Order, Constructed from Non-Stocked Parts. Consult your local Sales Office for Availability. |
| Availability of the product being ordered is determined by the component with the longest shipping time for the requested construction. | |

| Specification Worksheet | |
|--|-------|
| Application: | |
| Specific Use | _____ |
| Line Size | _____ |
| Gas Type and Specific Gravity | _____ |
| Gas Temperature | _____ |
| Does the Application Require Overpressure Protection? | |
| <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, which is preferred: | |
| <input type="checkbox"/> Relief Valve <input type="checkbox"/> Monitor Regulator <input type="checkbox"/> Shutoff Device | |
| Is overpressure protection equipment selection assistance desired? _____ | |
| Pressure: | |
| Maximum Inlet Pressure (P _{1max}) | _____ |
| Minimum Inlet Pressure (P _{1min}) | _____ |
| Downstream Pressure Setting(s) (P ₂) | _____ |
| Maximum Flow (Q _{max}) | _____ |
| Performance Required: | |
| Accuracy Requirements? | _____ |
| Need for Extremely Fast Response? | _____ |
| Other Requirements: _____ | |
| _____ | |

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