

# J48 Gas Pressure Regulator

## Technical Bulletin



The J48 is an industrial low pressure regulator suitable for a wide range of pressure reduction applications, including such OEM equipment as boiler and burner trains for a variety of gases.

### General Information

Outlet pressures from 2" W.C. up to 64" W.C. Operating temperature range is -4°F to +158°F (-20°C to + 70°C) with a maximum allowable inlet pressure of 5 PSIG (350mbar). Flow rates up to 28040 SCFH (800 SCMH).

The J48 is AGA / CGA approved to the following specifications:

- CGA 6.3 - M95 / ANSI Z21.18 – 1995
- CGA 6.3a - M98 / ANSI Z21.18a – 1998
- CGA 6.3b - M100 / ANSI Z21.18b – 2000

The J48 must be installed indoors or inside a weather-proof enclosure.

### Options

#### Vent Restrictor

(part number 78069P013) A vent restrictor is available which fits into the regulator vent. In the event of a major malfunction it will limit the amount of gas that can escape to atmosphere. Under normal conditions air can pass freely in and out of the top cover, through the vent restrictor (Fig. 1). This is necessary for the regulator to work.

### Features

- Quick release spring adjustment mechanism unit that provides easy access for spring adjustment and routine maintenance.
- Available in a number of valve body connection sizes – 3/4", 1", 1-1/4", 2", 2-1/2", & 3". All have NPT screw bodies.
- Comprehensive range of regulator spring ranges for different requirements.

| Pressure (PSIG) | Flow Rate (ft <sup>3</sup> /hr 0.6sg Gas) | Flow Rate (ft <sup>3</sup> /hr Air) |
|-----------------|---|-------------------------------------|
| 0               | 0   | 0                                   |
| 0.5             | 0.995                                     | 1.284                               |
| 1.0             | 0.995                                     | 1.284                               |
| 1.5             | 1.085                                     | 1.401                               |
| 2.0             | 1.447                                     | 1.868                               |
| 5.0             | < 2.0                                     | < 2.5                               |

If there is a sudden surge of pressure, due to equipment failure, the plastic ball inside the unit is blown to the end of the internal hole where it blocks the escaping gas (Fig. 2).

The restrictor is built and tested to comply with ANSI Z21.18 1995

#### Flow Rates through restrictor

Each vent restrictor is tested to ensure that the flow in the fault condition is less than 2.5 ft<sup>3</sup>/hr (0.6 sg Gas) and more than 1 ft<sup>3</sup>/hr (0.6 sg Gas). This is to make sure that the device does not slow the regulator response time in normal operation.

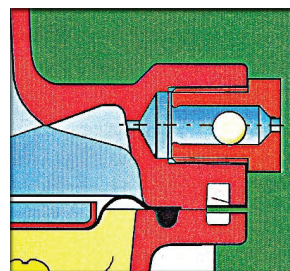


Figure 1

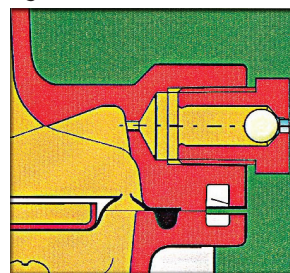
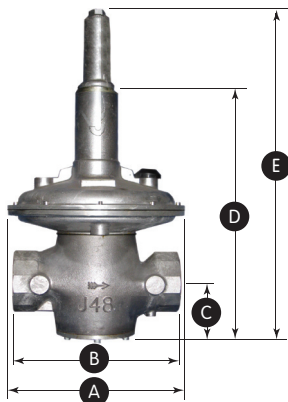
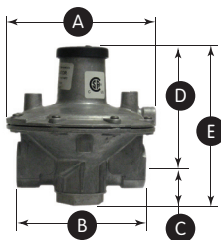


Figure 2

The preferred installation of the vent restrictor is horizontally, as shown.

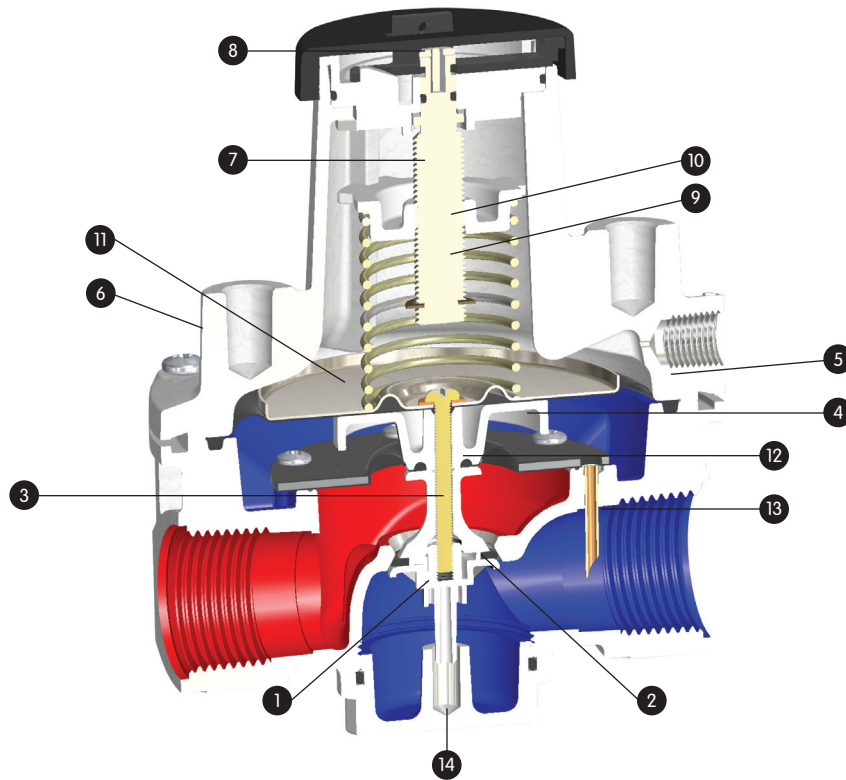
## J48 Gas Pressure Regulators Dimensions



| Size              | A               | B               | C              | D               | E               | Weight (lbs.) |
|-------------------|-----------------|-----------------|----------------|-----------------|-----------------|---------------|
| 3/4" and 1"       | 5.27"<br>134 mm | 4.92"<br>125 mm | 1.34"<br>34 mm | 5.20"<br>132 mm | 6.53"<br>166 mm | 2.20          |
| 1-1/4" and 1-1/2" | 7.28"<br>185 mm | 6.10"<br>155 mm | 1.77"<br>45 mm | 5.87"<br>149 mm | 7.64"<br>194 mm | 4.19          |
| 2"                | 9.21"<br>234 mm | 7.87"<br>200 mm | 2.05"<br>52 mm | 6.57"<br>167 mm | 8.62"<br>219 mm | 6.83          |

| Size   | A               | B               | C              | D*            | E**             | Weight (lbs.) |
|--------|-----------------|-----------------|----------------|---------------|-----------------|---------------|
| 2-1/2" | 13.2"<br>335 mm | 12.2"<br>310 mm | 4.2"<br>107 mm | 19"<br>483 mm | 26.7"<br>678 mm | 26.46         |
| 3"     | 13.2"<br>335 mm | 12.2"<br>310 mm | 4.2"<br>107 mm | 19"<br>483 mm | 26.7"<br>678 mm | 26.46         |

\* Low Pressure  
\*\* High Pressure



## Material Specifications

- 1 Valve Disc Holder - 3/4", 1", 1-1/4", 1-1/2" and 2" available in Acetal Resin. 2-1/2" and 3" available in Aluminum Alloy.
- 2 Valve Disc - Nitrile (Buna)
- 3 Valve Spacer - Acetal Resin
- 4 Diaphragm Spacer - 3/4", 1", 1-1/4", 1-1/2" and 2" available in Acetal Resin. 2-1/2" and 3" available in Mild Steel.
- 5 Main Diaphragm - 3/4", 1", 1-1/4", 1-1/2" and 2" available in Nitrile (Buna). 2-1/2" and 3" available in Fabric reinforced Nitrile (Buna).
- 6 Top Cover - Aluminum Alloy
- 7 Top Spring Holder (Course Thread)
- 8 Top Cap - 3/4", 1", 1-1/4", 1-1/2" and 2" available in Acetal Resin (UV Stabilized). 2-1/2" and 3" available in Aluminum Alloy.

### 9 Loading Spring

Pressure Springs for the 3/4" and 1"

| Spring Range "W.C. | Color Code    | Part Number |
|--------------------|---------------|-------------|
| 2 - 6              | Yellow        | 70017P098   |
| 5 - 10             | Black         | 70017P099   |
| 9 - 14             | Orange        | 70017P100   |
| 10 - 30            | Yellow/Black  | 70017P101   |
| 28 - 40            | Pink/Gold     | 70017P102   |
| 36 - 64            | Yellow/Orange | 70017P103   |

Pressure Springs for the 1-1/4" and 1-1/2"

| Spring Range "W.C. | Color Code    | Part Number |
|--------------------|---------------|-------------|
| 2 - 6              | Red/Yellow    | 70017P104   |
| 5 - 10             | Red/Black     | 70017P105   |
| 9 - 14             | Red/Orange    | 70017P106   |
| 10 - 30            | Yellow/Orange | 70017P103   |
| 28 - 40            | Pink/Silver   | 70017P107   |
| 36 - 64            | Gray/Gold     | 70017P108   |

Pressure Springs for the 2"

| Spring Range "W.C. | Color Code        | Part Number |
|--------------------|-------------------|-------------|
| 2 - 6              | Dark Blue/Yellow  | 70017P109   |
| 5 - 10             | Dark Blue/Black   | 70017P110   |
| 9 - 14             | Dark Blue/Orange  | 70017P111   |
| 10 - 30            | Yellow/Dark Green | 70017P112   |
| 28 - 40            | Gray/Gold         | 70017P108   |

Pressure Springs for the 2-1/2" and 3"

| Spring Range "W.C. | Color Code   | Part Number |
|--------------------|--------------|-------------|
| 2.6 - 6            | White/Yellow | 70017P114   |
| 5 - 10             | White/Black  | 70017P115   |
| 9 - 15             | White/Orange | 70017P116   |
| 14 - 20            | White/Brown  | 70017P117   |
| 18 - 30            | White        | 70017P118   |
| 28 - 40            | White/Red    | 70017P119   |

- 10 Spring Adjusting Screw (Course Thread) - 3/4", 1", 1-1/4", 1-1/2" and 2" available in Aluminum Alloy. 2-1/2" and 3" available in Mild Steel.
- 11 Top Diaphragm Plate - Mild Steel
- 12 Secondary Diaphragm - 3/4", 1", 1-1/4", 1-1/2" and 2" available in Nitrile (Buna). 2-1/2" and 3" available in Fabric reinforced Nitrile (Buna).
- 13 Impulse Tube - Brass
- 14 Bottom Plug

# J48 Gas Pressure Regulator Capacity Performance

The following tests are performed with the regulator set at a constant inlet pressure, a predetermined flow rate and the required outlet pressure. The flow rate is then increased while keeping the inlet pressure constant. The capacities are recorded when the outlet pressure has fallen by 10% and 20% from the set point.

## 3/4" Regulator Set Flow Rate 100 SCFH SCFH (SCMH) 0.64 specific gravity

### Outlet Pressure Setting (W.C.) / DROOP (%)

| Inlet Pressure (bar) | 4" (10 mbar) |            | 7" (17.4 mbar) |            | 8" (19.9 mbar) |             | 11" (27.4 mbar) |             | 20" (49.8 mbar) |             |
|----------------------|--------------|------------|----------------|------------|----------------|-------------|-----------------|-------------|-----------------|-------------|
|                      | 10%          | 20%        | 10%            | 20%        | 10%            | 20%         | 10%             | 20%         | 10%             | 20%         |
| 6" W.C. (0.0149)     | 216 (6.1)    | 221 (6.3)  | —              | —          | —              | —           | —               | —           | —               | —           |
| 8" W.C. (0.0199)     | 247 (7.0)    | 441 (12.5) | 252 (7.1)      | 464 (13.1) | —              | —           | —               | —           | —               | —           |
| 10" W.C. (0.0249)    | 278 (7.9)    | 472 (13.4) | 296 (8.4)      | 561 (15.9) | 318 (9.0)      | 587 (16.6)  | —               | —           | —               | —           |
| 0.50 PSIG (0.0345)   | 344 (9.7)    | 530 (15.0) | 366 (10.4)     | 786 (22.3) | 406 (11.5)     | 883 (25.0)  | 477 (13.5)      | 883 (25.0)  | —               | —           |
| 0.75 PSIG (0.0517)   | 375 (10.6)   | 574 (16.3) | 433 (12.3)     | 861 (24.4) | 552 (15.6)     | 971 (27.5)  | 728 (20.6)      | 1104 (31.3) | 441 (12.5)      | 927 (26.3)  |
| 1.00 PSIG (0.0689)   | 318 (9.0)    | 618 (17.5) | 477 (13.5)     | 927 (26.3) | 750 (21.2)     | 993 (28.1)  | 883 (25.0)      | 1192 (33.8) | 795 (22.5)      | 1280 (36.3) |
| 1.50 PSIG (0.1034)   | 362 (10.3)   | 618 (17.5) | 525 (14.9)     | 949 (26.9) | 949 (26.9)     | 1170 (33.1) | 1059 (30.0)     | 1280 (36.3) | 1015 (28.7)     | 1523 (43.1) |
| 2.00 PSIG (0.1379)   | 371 (10.5)   | 662 (18.8) | 556 (15.7)     | 927 (26.3) | 1059 (30.0)    | 1280 (36.3) | 1148 (32.5)     | 1324 (37.5) | 1192 (33.8)     | 1633 (46.2) |
| 3.00 PSIG (0.2068)   | 291 (8.2)    | 552 (15.6) | 592 (16.8)     | 927 (26.3) | 1280 (36.3)    | 1457 (41.3) | 1368 (38.7)     | 1545 (43.8) | 1589 (45.0)     | 1810 (51.3) |
| 5.00 PSIG (0.3447)   | 256 (7.3)    | 503 (14.2) | 534 (15.1)     | 993 (28.1) | 1501 (42.5)    | 1545 (43.8) | 1368 (38.7)     | 1501 (42.5) | 2119 (60.0)     | 2295 (65.0) |

## 1" Regulator Set Flow Rate 100 SCFH SCFH (SCMH) 0.64 specific gravity

### Outlet Pressure Setting (W.C.) / DROOP (%)

| Inlet Pressure (bar) | 4" (10 mbar) |             | 7" (17.4 mbar) |             | 8" (19.9 mbar) |             | 11" (27.4 mbar) |             | 20" (49.8 mbar) |             |
|----------------------|--------------|-------------|----------------|-------------|----------------|-------------|-----------------|-------------|-----------------|-------------|
|                      | 10%          | 20%         | 10%            | 20%         | 10%            | 20%         | 10%             | 20%         | 10%             | 20%         |
| 6" W.C. (0.0149)     | 313 (8.9)    | 459 (13.0)  | —              | —           | —              | —           | —               | —           | —               | —           |
| 8" W.C. (0.0199)     | 397 (11.2)   | 552 (15.6)  | 353 (10.0)     | 795 (22.5)  | —              | —           | —               | —           | —               | —           |
| 10" W.C. (0.0249)    | 441 (12.5)   | 790 (22.4)  | 455 (12.9)     | 883 (25.0)  | 441 (12.5)     | 883 (25.0)  | —               | —           | —               | —           |
| 0.50 PSIG (0.0345)   | 662 (18.8)   | 927 (26.3)  | 662 (18.8)     | 971 (27.5)  | 618 (17.5)     | 1059 (30.0) | 574 (16.3)      | 1324 (37.5) | —               | —           |
| 0.75 PSIG (0.0517)   | 662 (18.8)   | 927 (26.3)  | 971 (27.5)     | 1148 (32.5) | 927 (26.3)     | 1236 (35.0) | 861 (24.4)      | 1633 (46.2) | 750 (21.2)      | 1589 (45.0) |
| 1.00 PSIG (0.0689)   | 839 (23.8)   | 1015 (28.7) | 1104 (31.3)    | 1280 (36.3) | 1170 (33.1)    | 1324 (37.5) | 1059 (30.0)     | 1766 (50.0) | 1015 (28.7)     | 1854 (52.5) |
| 1.50 PSIG (0.1034)   | 1413 (40.0)  | 1457 (41.3) | 1104 (31.3)    | 1324 (37.5) | 1148 (32.5)    | 1457 (41.3) | 1324 (37.5)     | 1898 (53.8) | 1368 (38.7)     | 1942 (55.0) |
| 2.00 PSIG (0.1379)   | 1236 (35.0)  | 1368 (38.7) | 1192 (33.8)    | 1457 (41.3) | 1589 (45.0)    | 1589 (45.0) | 1501 (42.5)     | 2031 (57.5) | 1457 (41.3)     | 1986 (56.2) |
| 3.00 PSIG (0.2068)   | 1368 (38.7)  | 1501 (42.5) | 1368 (38.7)    | 1589 (45.0) | 1368 (38.7)    | 1677 (47.5) | 1457 (41.3)     | 2119 (60.0) | 1545 (43.8)     | 2207 (62.5) |
| 5.00 PSIG (0.3447)   | 1501 (42.5)  | 1810 (51.3) | 1501 (42.5)    | 1986 (56.2) | 1545 (43.8)    | 2207 (62.5) | 1677 (47.5)     | 2207 (62.5) | 1766 (50.0)     | 2428 (68.8) |

**1-1/4" Regulator**  
**Set Flow Rate 100 SCFH**  
 SCFH (SCMH) 0.64 specific gravity

**Outlet Pressure Setting (W.C.) / DROOP (%)**

| Inlet Pressure (bar) | 4" (10 mbar) |             | 7" (17.4 mbar) |              | 8" (19.9 mbar) |              | 11" (27.4 mbar) |              | 20" (49.8 mbar) |              |
|----------------------|--------------|-------------|----------------|--------------|----------------|--------------|-----------------|--------------|-----------------|--------------|
|                      | 10%          | 20%         | 10%            | 20%          | 10%            | 20%          | 10%             | 20%          | 10%             | 20%          |
| 6" W.C. (0.0149)     | 640 (18.1)   | 1324 (37.5) | —              | —            | —              | —            | —               | —            | —               | —            |
| 8" W.C. (0.0199)     | 795 (22.5)   | 1545 (43.8) | 706 (20.0)     | 1324 (37.5)  | —              | —            | —               | —            | —               | —            |
| 10" W.C. (0.0249)    | 817 (23.1)   | 1677 (47.5) | 883 (25.0)     | 1589 (45.0)  | 795 (22.5)     | 1589 (45.0)  | —               | —            | —               | —            |
| 0.50 PSIG (0.0345)   | 883 (25.0)   | 1920 (54.4) | 1015 (28.7)    | 1986 (56.2)  | 1148 (32.5)    | 2031 (57.5)  | 1280 (36.3)     | 2119 (60.0)  | —               | —            |
| 0.75 PSIG (0.0517)   | 883 (25.0)   | 1810 (51.3) | 1236 (35.0)    | 2384 (67.5)  | 1413 (40.0)    | 2604 (73.7)  | 1854 (52.5)     | 2913 (82.5)  | 1280 (36.3)     | 2163 (61.3)  |
| 1.00 PSIG (0.0689)   | 927 (26.3)   | 1722 (48.8) | 1457 (41.3)    | 2516 (71.3)  | 1722 (48.8)    | 3002 (85.0)  | 2207 (62.5)     | 3399 (96.3)  | 1854 (52.5)     | 3046 (86.3)  |
| 1.50 PSIG (0.1034)   | 971 (27.5)   | 1722 (48.8) | 1942 (55.0)    | 2604 (73.7)  | 2295 (65.0)    | 3531 (100.0) | 2825 (80.0)     | 4061 (115.0) | 2649 (75.0)     | 4105 (116.2) |
| 2.00 PSIG (0.1379)   | 971 (27.5)   | 1810 (51.3) | 2340 (66.3)    | 3002 (85.0)  | 2825 (80.0)    | 3840 (108.7) | 2472 (70.0)     | 4635 (131.3) | 3134 (88.7)     | 4767 (135.0) |
| 3.00 PSIG (0.2068)   | 927 (26.3)   | 2163 (61.3) | 2913 (82.5)    | 3576 (101.3) | 3752 (106.2)   | 4591 (130.0) | 4061 (115.0)    | 5518 (156.3) | 3973 (112.5)    | 5959 (168.7) |
| 5.00 PSIG (0.3447)   | 706 (20.0)   | 1413 (40.0) | 4238 (120.0)   | 4856 (137.5) | 5076 (143.7)   | 6180 (175.0) | 3002 (85.0)     | 7019 (198.8) | 5297 (150.0)    | 7504 (212.5) |

**1-1/2" Regulator**  
**Set Flow Rate 100 SCFH**  
 SCFH (SCMH) 0.64 specific gravity

**Outlet Pressure Setting (W.C.) / DROOP (%)**

| Inlet Pressure (bar) | 4" (10 mbar) |              | 7" (17.4 mbar) |              | 8" (19.9 mbar) |              | 11" (27.4 mbar) |                | 20" (49.8 mbar) |                |
|----------------------|--------------|--------------|----------------|--------------|----------------|--------------|-----------------|----------------|-----------------|----------------|
|                      | 10%          | 20%          | 10%            | 20%          | 10%            | 20%          | 10%             | 20%            | 10%             | 20%            |
| 6" W.C. (0.0149)     | 750 (21.2)   | 1545 (43.8)  | —              | —            | —              | —            | —               | —              | —               | —              |
| 8" W.C. (0.0199)     | 927 (26.3)   | 1810 (51.3)  | 750 (21.2)     | 1501 (42.5)  | —              | —            | —               | —              | —               | —              |
| 10" W.C. (0.0249)    | 1104 (31.3)  | 1986 (56.2)  | 927 (26.3)     | 1898 (53.8)  | 971 (27.5)     | 1898 (53.8)  | —               | —              | —               | —              |
| 0.50 PSIG (0.0345)   | 1501 (42.5)  | 2428 (68.8)  | 1192 (33.8)    | 2472 (70.0)  | 1280 (36.3)    | 2516 (71.3)  | 1501 (42.5)     | 2516 (71.3)    | —               | —              |
| 0.75 PSIG (0.0517)   | 2119 (60.0)  | 2958 (83.8)  | 1677 (47.5)    | 3134 (88.7)  | 1633 (46.2)    | 3222 (91.2)  | 2340 (66.3)     | 3664 (103.8)   | 1501 (42.5)     | 2516 (71.3)    |
| 1.00 PSIG (0.0689)   | 2604 (73.7)  | 3487 (98.7)  | 1898 (53.8)    | 3708 (105.0) | 2031 (57.5)    | 3796 (107.5) | 2869 (81.2)     | 4503 (127.5)   | 2119 (60.0)     | 3708 (105.0)   |
| 1.50 PSIG (0.1034)   | 3487 (98.7)  | 4547 (128.8) | 2737 (77.5)    | 4591 (130.0) | 2825 (80.0)    | 4723 (133.7) | 3929 (111.3)    | 5606 (158.7)   | 2958 (83.8)     | 5297 (150.0)   |
| 2.00 PSIG (0.1379)   | 4105 (116.2) | 5121 (145.0) | 4061 (115.0)   | 5385 (152.5) | 3531 (100.0)   | 5562 (157.5) | 4767 (135.0)    | 6489 (183.8)   | 3399 (96.3)     | 6357 (180.0)   |
| 3.00 PSIG (0.2068)   | 5827 (165.0) | 6710 (190.0) | 6136 (173.8)   | 6798 (192.5) | 5739 (162.5)   | 6710 (190.0) | 6268 (177.5)    | 7725 (218.8)   | 4856 (137.5)    | 7769 (220.0)   |
| 5.00 PSIG (0.3447)   | 8167 (231.3) | 8520 (241.3) | 7504 (212.5)   | 7902 (223.8) | 7946 (225.0)   | 8829 (250.0) | 8387 (237.5)    | 10,153 (287.5) | 7063 (200.0)    | 10,418 (295.0) |

# J48 Gas Pressure Regulator Capacity Performance

**2" Regulator**  
**Set Flow Rate 150 SCFH**  
 SCFH (SCMH) 0.64 specific gravity

## Outlet Pressure Setting (W.C.) / DROOP (%)

| Inlet Pressure (bar) | 4" (10 mbar) |                | 7" (17.4 mbar) |                | 8" (19.9 mbar) |                | 11" (27.4 mbar) |                | 20" (49.8 mbar) |                |
|----------------------|--------------|----------------|----------------|----------------|----------------|----------------|-----------------|----------------|-----------------|----------------|
|                      | 10%          | 20%            | 10%            | 20%            | 10%            | 20%            | 10%             | 20%            | 10%             | 20%            |
| 6" W.C. (0.0149)     | 1148 (32.5)  | 2295 (65.0)    | —              | —              | —              | —              | —               | —              | —               | —              |
| 8" W.C. (0.0199)     | 1457 (41.3)  | 3267 (92.5)    | 1413 (40.0)    | 2649 (75.0)    | —              | —              | —               | —              | —               | —              |
| 10" W.C. (0.0249)    | 1854 (52.5)  | 4238 (120.0)   | 1810 (51.3)    | 3443 (97.5)    | 1766 (50.0)    | 3399 (96.3)    | —               | —              | —               | —              |
| 0.50 PSIG (0.0345)   | 3002 (85.0)  | 5297 (150.0)   | 3090 (87.5)    | 4944 (140.0)   | 3002 (85.0)    | 4856 (137.5)   | 2560 (72.5)     | 4679 (132.5)   | —               | —              |
| 0.75 PSIG (0.0517)   | 5694 (161.2) | 8608 (243.8)   | 5297 (150.0)   | 7284 (206.3)   | 5341 (151.2)   | 6710 (190.0)   | 3973 (112.5)    | 7240 (205.0)   | 3090 (87.5)     | 5297 (150.0)   |
| 1.00 PSIG (0.0689)   | 6180 (175.0) | 10,594 (300.0) | 7504 (212.5)   | 10,153 (287.5) | 7637 (216.3)   | 9579 (271.3)   | 6842 (193.7)    | 9712 (275.0)   | 5297 (150.0)    | 7946 (225.0)   |
| 1.50 PSIG (0.1034)   | 5739 (162.5) | 12,802 (362.5) | 11,919 (337.5) | 13,243 (375.0) | 11,919 (337.5) | 13,684 (387.5) | 11,919 (337.5)  | 13,022 (368.7) | 9712 (275.0)    | 11,036 (312.5) |
| 2.00 PSIG (0.1379)   | 5959 (168.7) | 11,919 (337.5) | 13,243 (375.0) | 14,126 (400.0) | 15,892 (450.0) | 16,333 (462.5) | 15,671 (443.8)  | 15,980 (452.5) | 11,919 (337.5)  | 14,567 (412.5) |
| 3.00 PSIG (0.2068)   | 4414 (125.0) | 11,919 (337.5) | 11,036 (312.5) | 17,657 (500.0) | 11,477 (325.0) | 18,099 (512.5) | 11,477 (325.0)  | 19,776 (560.0) | 12,630 (357.6)  | 16,774 (475.0) |
| 5.00 PSIG (0.3447)   | 4414 (125.0) | 11,477 (325.0) | 4414 (125.0)   | 11,477 (325.0) | 11,698 (331.3) | 14,567 (412.5) | 11,919 (337.5)  | 15,009 (425.0) | 16,333 (462.5)  | 18,540 (525.0) |

**2-1/2" Regulator**  
**Set Flow Rate 688 SCFH**  
 SCFH (SCMH) 0.64 specific gravity

## Outlet Pressure Setting (W.C.) / DROOP (%)

| Inlet Pressure (bar) | 4" (10 mbar) |              | 7" (17.4 mbar) |                | 8" (19.9 mbar) |                | 11" (27.4 mbar) |                | 20" (49.8 mbar) |                | 34" (84.6 mbar) |                |
|----------------------|--------------|--------------|----------------|----------------|----------------|----------------|-----------------|----------------|-----------------|----------------|-----------------|----------------|
|                      | 10%          | 20%          | 10%            | 20%            | 10%            | 20%            | 10%             | 20%            | 10%             | 20%            | 10%             | 20%            |
| 6" W.C. (0.0149)     | 2931 (83.0)  | 4908 (139.0) | —              | —              | —              | —              | —               | —              | —               | —              | —               | —              |
| 8" W.C. (0.0199)     | 3001 (85.0)  | 4979 (141.0) | 3673 (104.0)   | 6312 (178.7)   | —              | —              | —               | —              | —               | —              | —               | —              |
| 10" W.C. (0.0249)    | 3355 (95.0)  | 5509 (156.0) | 3885 (110.0)   | 7169 (203.0)   | 4167 (118.0)   | 7769 (220.0)   | —               | —              | —               | —              | —               | —              |
| 0.50 PSIG (0.0345)   | 3461 (98.0)  | 5792 (164.0) | 4697 (133.0)   | 7769 (220.0)   | 4909 (139.0)   | 8511 (241.0)   | 4591 (130.0)    | 8758 (248.0)   | —               | —              | —               | —              |
| 0.75 PSIG (0.0517)   | 4026 (114.0) | 6109 (173.0) | 5439 (154.0)   | 8440 (239.0)   | 5615 (159.0)   | 8793 (249.0)   | 5862 (166.0)    | 10,029 (284.0) | 6145 (174.0)    | 10,428 (295.3) | —               | —              |
| 1.00 PSIG (0.0689)   | 4167 (118.0) | 6675 (189.0) | 5933 (168.0)   | 9005 (255.0)   | 6109 (173.0)   | 9464 (268.0)   | 6463 (183.0)    | 10,524 (298.0) | 6886 (195.0)    | 12,396 (351.0) | —               | —              |
| 1.50 PSIG (0.1034)   | 4803 (136.0) | 6180 (175.0) | 6039 (171.0)   | 9358 (265.0)   | 6321 (179.0)   | 9747 (276.0)   | 6816 (193.0)    | 10,983 (311.0) | 7346 (208.0)    | 13,879 (393.0) | 8935 (253.0)    | 18,470 (523.0) |
| 2.00 PSIG (0.1379)   | 5403 (153.0) | 6357 (180.0) | 6215 (176.0)   | 10,347 (293.0) | 6463 (183.0)   | 10,383 (294.0) | 7063 (200.0)    | 11,160 (316.0) | 7699 (218.0)    | 9747 (276.0)   | 9994 (283.0)    | 20,977 (594.0) |
| 3.00 PSIG (0.2068)   | 6498 (184.0) | 7204 (204.0) | 6710 (190.0)   | 8334 (236.0)   | 6816 (193.0)   | 10,700 (303.0) | 6004 (170.0)    | 11,654 (330.0) | 8687 (246.0)    | 14,691 (416.0) | 12,148 (344.0)  | 21,366 (605.0) |
| 5.00 PSIG (0.3447)   | 8264 (234.0) | 8440 (239.0) | 7769 (220.0)   | 10,630 (301.0) | 8687 (246.0)   | 9924 (281.0)   | 9111 (258.0)    | 9994 (283.0)   | 9464 (268.0)    | 15,680 (444.0) | 13,172 (373.0)  | 21,648 (613.0) |



**3" Regulator**  
**Set Flow Rate 688 SCFH**  
 SCFH (SCMH) 0.64 specific gravity

**Outlet Pressure Setting (W.C.) / DROOP (%)**

| Inlet Pressure (bar) | 4" (10 mbar)   |                | 7" (17.4 mbar) |                | 8" (19.9 mbar) |                | 11" (27.4 mbar) |                | 20" (49.8 mbar) |                | 34" (84.6 mbar) |                |
|----------------------|----------------|----------------|----------------|----------------|----------------|----------------|-----------------|----------------|-----------------|----------------|-----------------|----------------|
|                      | 10%            | 20%            | 10%            | 20%            | 10%            | 20%            | 10%             | 20%            | 10%             | 20%            | 10%             | 20%            |
| 6" W.C. (0.0149)     | 3284 (93.0)    | 5509 (156.0)   | —              | —              | —              | —              | —               | —              | —               | —              | —               | —              |
| 8" W.C. (0.0199)     | 3743 (106.0)   | 5968 (169.0)   | 4061 (115.0)   | 7522 (213.0)   | —              | —              | —               | —              | —               | —              | —               | —              |
| 10" W.C. (0.0249)    | 4556 (129.0)   | 6463 (183.0)   | 5297 (150.0)   | 9288 (263.0)   | 5403 (153.0)   | 10,383 (294.0) | —               | —              | —               | —              | —               | —              |
| 0.50 PSIG (0.0345)   | 5827 (165.0)   | 8264 (234.0)   | 7063 (200.0)   | 9712 (275.0)   | 7275 (206.0)   | 11,265 (319.0) | 5050 (143.0)    | 11,689 (331.0) | —               | —              | —               | —              |
| 0.75 PSIG (0.0517)   | 7734 (219.0)   | 9464 (268.0)   | 9924 (281.0)   | 12,148 (344.0) | 11,831 (335.0) | 21,366 (605.0) | 7522 (213.0)    | 12,360 (350.0) | 4909 (139.0)    | 11,124 (315.0) | —               | —              |
| 1.00 PSIG (0.0689)   | 9712 (275.0)   | 11,689 (331.0) | 11,477 (325.0) | 14,444 (409.0) | 14,797 (419.0) | 22,531 (638.0) | 10,171 (288.0)  | 13,067 (370.0) | 7240 (205.0)    | 16,563 (469.0) | —               | —              |
| 1.50 PSIG (0.1034)   | 11,477 (325.0) | 13,702 (388.0) | 15,221 (431.0) | 18,328 (519.0) | 18,752 (531.0) | 19,635 (556.0) | 11,407 (323.0)  | 14,938 (423.0) | 9924 (281.0)    | 19,211 (544.0) | 8935 (253.0)    | 21,401 (606.0) |
| 2.00 PSIG (0.1379)   | 14,126 (400.0) | 15,680 (444.0) | 20,306 (575.0) | 21,648 (613.0) | 20,977 (594.0) | 22,284 (631.0) | 14,832 (420.0)  | 16,104 (456.0) | 11,619 (329.0)  | 21,366 (605.0) | 13,031 (369.0)  | 24,721 (700.0) |
| 3.00 PSIG (0.2068)   | 8405 (238.0)   | 11,972 (339.0) | 22,425 (635.0) | 25,568 (724.0) | 16,280 (461.0) | 21,048 (596.0) | 18,117 (513.0)  | 20,659 (585.0) | 9747 (276.0)    | 20,483 (580.0) | 15,892 (450.0)  | 25,603 (725.0) |
| 5.00 PSIG (0.3447)   | 8405 (238.0)   | 9712 (275.0)   | 23,838 (675.0) | 28,040 (794.0) | 23,520 (666.0) | 26,239 (743.0) | 23,167 (656.0)  | 25,603 (725.0) | 21,860 (619.0)  | 25,815 (731.0) | 13,031 (369.0)  | 25,038 (709.0) |

# J48 Gas Pressure Regulator - Technical Data

## Other Gas Capacities

To determine the capacity of these regulators for gases other than natural gas, multiply the values within the capacity tables by a Specific Gravity Conversion Factor (F<sub>g</sub>). The table below lists this factor for some of the more common gases.

| Gas Type       | Specific Gravity | Conversion Factor (F <sub>g</sub> ) |
|----------------|------------------|-------------------------------------|
| Air            | 1.00             | 0.77                                |
| Butane         | 2.01             | 0.55                                |
| Carbon Dioxide | 1.52             | 0.63                                |
| Nitrogen       | 0.97             | 0.79                                |
| Propane        | 1.53             | 0.63                                |

To calculate the Conversion Factor for other gases:

$$(F_g) = \sqrt{\frac{\text{Specific gravity of gas on which the capacity table is based}}{\text{Specific gravity of gas being used}}}$$

Example: If using propane and only having tables based on natural gas, the Specific Gravity Conversion Factor is :

$$(F_g) = \sqrt{\frac{\text{Specific gravity of natural gas (0.6)}}{\text{Specific gravity of propane (1.53)}}}$$

$$(F_g) = \sqrt{\frac{0.60}{1.53}}$$

$$(F_g) = 0.626$$

## About Elster

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Elster provides solutions and advanced technologies to help utilities more easily, efficiently and reliably obtain and use advanced metering intelligence to improve customer service, enhance operational efficiency, and increase revenues. Elster's AMI solutions enable utilities to cost-effectively generate, deliver, manage, and conserve the life-essential resources of gas, electricity, and water.

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