

HONEYWELL AMERICAN METER COMPANY CR4000

Residential Regulator

Brief information

Application: The American Meter Series CR4000 pressure regulator is designed for natural gas applications and features a compact, lightweight design for fast, easy installation. Interchangeable springs provide a wide range of outlet pressures and flow rates.

Control: The CR4000 features a full capacity internal relief valve with large passages to assure the fast release of gas (See performance graphs on page 3). The standard relief spring setting is 8.0" W.C. above preferred outlet pressure setpoint.

Regulator body configurations permit the CR4000 regulator to be supplied in 90° or 180° versions. The vent can be supplied in four different positions as shown on page 4.

The CR4000 regulator is designed with an extra large, removable weather and bug-proof stainless steel screened vent to resist freeze-ups and to exclude foreign matter. The vent is threaded 3/4 inch NPT.

Technical Data:

Inlet Pressures up to 125 PSIG

Outlet Pressures: 3.5" W.C. up to 5 PSIG.

Regulator Pressure Rating

125 PSIG (8.6 bar)	=	Maximum recommended inlet pressure for normal service. Maximum recommended pressure may vary with orifice size.
175 PSIG (12 bar)	=	Maximum inlet pressure for abnormal or emergency service, without causing damage to regulator case.
5 PSIG (350 mbar)	=	Maximum outlet pressure for normal service.
10 PSIG (689 mbar)	=	Maximum outlet pressure which can be contained by pressure carrying components (no flange leakage to atmosphere except for normal relief action). If regulator is subjected to these conditions, it should be removed from service.
50 PSIG (3.5 bar)	=	Maximum outlet pressure for abnormal service without damage to internal components. If regulator is subjected to these conditions, it should be removed from service.



FEATURES & BENEFITS

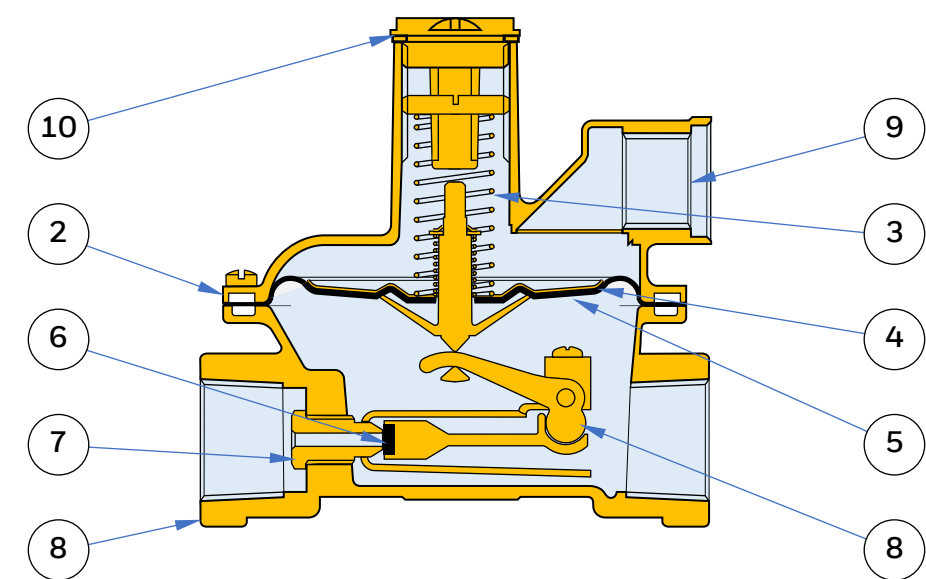
Main Features

- Outlet pressure ranges available 3.5" W.C. up to 5 PSIG
- Temperature range: -20°F to +150°F (-30°C to +65°C)
- Integrated Aluminum Regulator Body Sizes 3/4" x 3/4", 3/4" x 1" and 1" x 1" in the 180° and 3/4" x 3/4" and 3/4" x 1" in the 90° regulator body.
- Threaded connections meet ANSI/ASME B1.20.1.
- Capacities through 1400 SCFH
- Full capacity internal relief valve
- 3/4" NPT threaded vent.
- All models conform to ANSI Code B109.4 and CGA Service-type Regulator Specification CAN/CGA 6.18-M95.

Options

- Vent Elbow - The regulator vent opening should face downward to minimize the chance of blockage from ice and snow. If not, a 3/4" NPT plastic, 90° vent elbow (Part number 78041P025) with separate protective screen (Part number 70400P017) may be screwed into the vent.

CR4000 Regulator Components



Orifice Sizes

Orifice Size	Part Number	Max Inlet Pressure (PSIG)
1/8"	72494P044	125

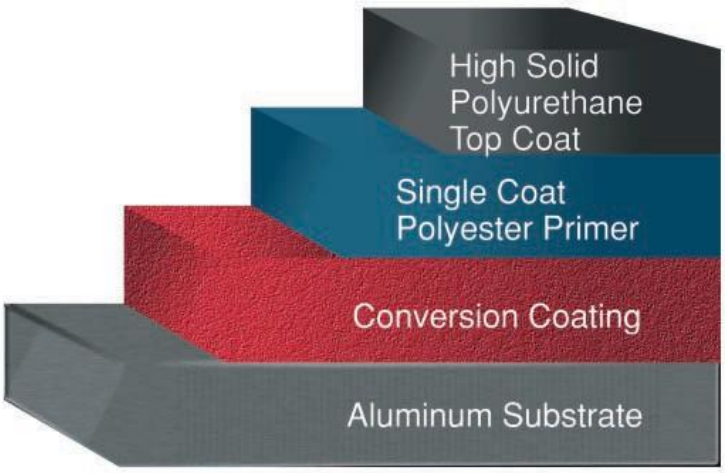
Loading Springs

Outlet Pressure	Color Code	Part Number
3.5" to 7" W.C.	Light Blue	70017P083
5" to 9" W.C.	Lavender	70017P084
9" to 15" W.C.	Light Gray	70017P088
18" to 2 PSIG	Light Green	70017P085
2 to 4 PSIG	Pink	70017P086
4 to 5 PSIG	Turquoise	70017P087

Item No.	Description	Material	Notes
1	Lower Diaphragm Case	Diecast Aluminum	With unique seven-step advanced conversion coating. Single coat polyester primer and high solid polyurethane topcoat.
2	Top Assembly	Diecast Aluminum	With unique seven-step advanced conversion coating. Single coat polyester primer and high solid polyurethane topcoat.
3	Loading Spring	Spring Steel	Zinc plated and chromate. Color coded for identification.
4	Diaphragm Plate	Steel	Plated
5	Diaphragm	Buna N	
6	Seat Disc	Buna N	
7	Orifice	Aluminum	High strength, corrosion resistant
8	Lever	Stamped Aluminum	
9	Vent Screen	Stainless Steel	Fitted with removable weather and bug-proof stainless-steel screen to resist freeze-ups and to exclude foreign matter. The vent is threaded 3/4" NPT.
10	Seal Plug	Mineral Filled Nylon	Ultraviolet stabilized

Exclusive, 7 - Step Corrosion Protection

The protective finish on the CR4000 regulator more effectively resists corrosive effects of weather and harsh environments than do any others in the industry. Each precision die cast aluminum regulator is treated, inside and out, with a special conversion coating that is part of an exclusive, 7-step finishing process. This unique coating greatly inhibits the metal surface. It also prevents finish paint from cracking.



CR4000 Capacity Data

CR4000 Regulator, 1/8" Orifice Set Point 7.0" W.C. @ 50 SCFH

SCFH (SCMH) 0.60 specific gravity gas @ 60° F & 14.7 PSIA. Pressure spring 70017P083. Outlet pressure variance not to exceed +2" -1" W.C. from set point, horizontal position.

Inlet Pressure PSIG (bar)	Inlet Pressure PSIG (bar)										
	3 (0.21)	5 (0.34)	10 (0.69)	15 (1.03)	25 (1.72)	35 (2.41)	50 (3.45)	60 (4.14)	75 (5.17)	100 (6.89)	125 (8.62)
90° - 3/4"	200 (5.66)	250 (7.08)	350 (9.91)	425 (12.03)	550 (15.57)	700 (19.82)	850 (24.07)	1000 (28.32)	1100 (31.15)	1700 (48.14)	2000 (56.63)
90° - 1"	225 (6.37)	275 (7.79)	375 (10.62)	450 (12.74)	600 (16.99)	750 (21.24)	900 (25.48)	1000 (28.32)	1100 (31.15)	1700 (48.14)	2100 (59.47)
180° - 3/4"	200 (5.66)	250 (7.08)	350 (9.91)	425 (12.03)	550 (15.57)	700 (19.82)	850 (24.07)	1000 (28.32)	1100 (31.15)	1200 (33.98)	1200 (33.98)
180° - 1"	225 (6.37)	275 (7.79)	375 (10.62)	450 (12.74)	600 (16.99)	750 (21.24)	900 (25.48)	1000 (28.32)	1100 (31.15)	1200 (33.98)	1200 (33.98)

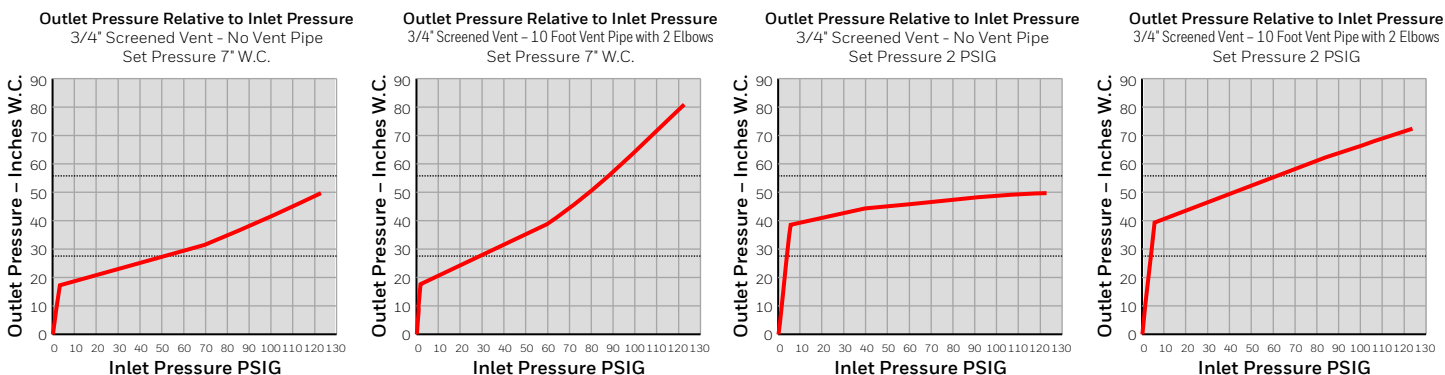
CR4000 Regulator, 1/8" Orifice Set Point 2 PSIG @ 50 SCFH

SCFH 0.60 specific gravity gas @ 60° F & 14.7 PSIA. Pressure spring 70017P085. Outlet pressure variance not to exceed ±10% from set point, horizontal position.

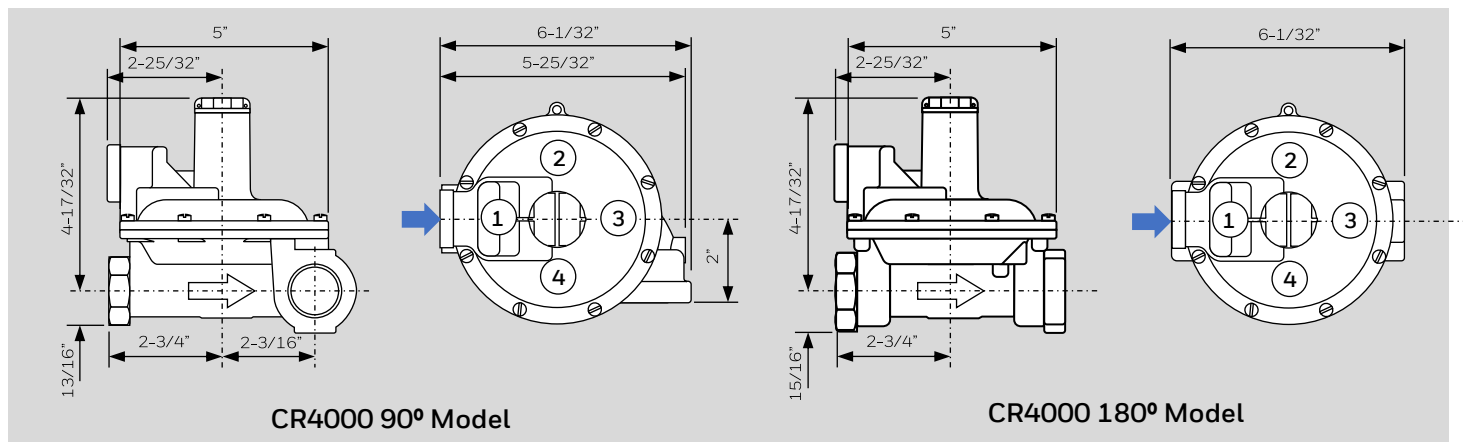
Inlet Pressure PSIG (bar)	Inlet Pressure PSIG (bar)										
	3 (0.21)	5 (0.34)	10 (0.69)	15 (1.03)	25 (1.72)	35 (2.41)	50 (3.45)	60 (4.14)	75 (5.17)	100 (6.89)	125 (8.62)
90° - 3/4"	100 (2.83)	150 (4.25)	225 (6.37)	275 (7.79)	350 (9.91)	450 (12.74)	500 (14.16)	600 (16.99)	600 (16.99)	800 (22.66)	1200 (33.98)
90° - 1"	100 (2.83)	150 (4.25)	250 (7.08)	325 (9.20)	450 (12.74)	550 (15.57)	600 (16.99)	700 (19.82)	800 (22.66)	1000 (28.32)	1400 (39.64)
180° - 3/4"	100 (2.83)	150 (4.25)	225 (6.37)	275 (7.79)	350 (9.91)	450 (12.74)	500 (14.16)	600 (16.99)	600 (16.99)	800 (22.66)	1200 (33.98)
180° - 1"	100 (2.83)	150 (4.25)	250 (7.08)	325 (9.20)	450 (12.74)	550 (15.57)	600 (16.99)	700 (19.82)	800 (22.66)	1000 (28.32)	1400 (39.64)

CR4000 Regulator Relief Valve Performance

There are several methods of measuring the relief performance of a regulator. For the CR4000 service regulator, the worst-case scenario would occur if the lever were to be disconnected. The data presented in the tables below represent this condition.



CR4000 Dimensions



CR4000 Vent Positions

➡ Standard Vent Position ① Shown

CR4000 Full Open Regulator Relief Capacity

For sizing downstream relief valves, use the following formulas to determine the regulator full open capacity:

For critical flow rates

$$Q = 14 \times \frac{P_1}{\sqrt{G}}$$

For sub-critical flow

$$Q = 28 \times \frac{\sqrt{P_2 h}}{\sqrt{G}}$$

Key:

- Q = Maximum capacity of regulator
- P1 = Inlet absolute pressure (PSIA)
- P2 = Outlet absolute pressure (PSIA)
- h = Differential pressure (P1 - P2)
- G = Specific gravity of gas

Ordering Information

1. Model number
2. Type and specific gravity of gas
3. Size of inlet and outlet
4. Inlet pressure, PSIG (bar)
5. Outlet pressure, inches W.C. (mbar) or PSIG (bar)
6. Flow, SCFH
7. Regulator vent position number

Shipping Weight

17 lbs/carton of eight regulators

For more information

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