

# Types ACE95 and ACE95Sr Tank Blanketing Valves

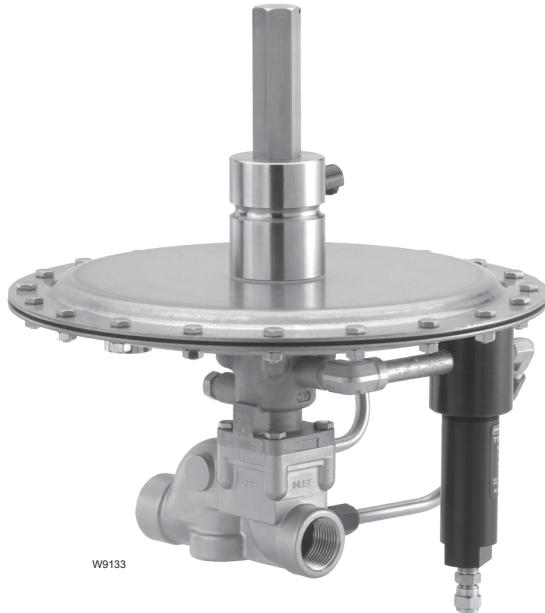


Figure 1. Type ACE95 Tank Blanketing Valve



Figure 2. Type ACE95Sr Tank Blanketing Valve

## Features

- Fully Balanced Pilot Design  
Reduces Inlet Pressure Sensitivity
- Frictionless Pilot Valve
- Bubble Tight Shutoff
- Pilot Controlled
- Angled or In-Line Body Option
- Arctic Temperature Constructions
- Self-Contained
- Highly Sensitive
- Diagnostics Available
- Vacuum Settings Available
- Stainless Steel  
Construction Available

# Types ACE95 and ACE95Sr

## Specifications

The Specifications section lists the specifications for Types ACE95 and ACE95Sr Tank Blanketing Valves. Factory specification is stamped on the nameplate fastened on the valve at the factory.

### Sizes and End Connection Styles

#### Type ACE95

##### Angled Body<sup>(1)</sup>:

3/4 NPT

1 NPT

NPS 1 / DN 25, CL150 RF

NPS 1 / DN 25, CL300 RF

NPS 1 / DN 25, PN 16/25/40 RF

NPS 1 / DN 25, Sanitary Flange

##### In-Line Body:

3/4 NPT

1 NPT

NPS 1 / DN 25, CL150 RF

NPS 1 / DN 25, CL300 RF

NPS 1 / DN 25, PN 16/25/40 RF

NPS 1 x 2 / DN 25 x 50, CL150 RF

NPS 1 x 2 / DN 25 x 50, PN 16/25/40 RF

NPS 1 / DN 25, Sanitary Flange

#### Type ACE95Sr

##### Angled Body<sup>(1)</sup>:

2 NPT

NPS 2 / DN 50, CL150 RF

NPS 2 / DN 50, CL300 RF

### Maximum Operating Inlet Pressure<sup>(2)</sup>

200 psig / 13.8 bar

### Maximum Emergency Outlet (Casing) Pressure<sup>(2)</sup>

20 psig / 1.4 bar

### Maximum Operating Outlet Pressure<sup>(2)</sup>

1.5 psig / 0.10 bar

### Outlet Pressure Ranges

-5 in. w.c. to 1.5 psig / -12 to 0.10 bar

### Minimum and Maximum Differential Pressures<sup>(2)</sup>

Minimum: 25 psi / 1.7 bar

Maximum: Up to 200 psi / 13.8 bar depending on main valve spring (See Table 6)

### Main Valve Flow Characteristic

Linear

### Pressure Registration

External

### Accuracy

Typically within 0.5 in. w.c. / 1 mbar when flowing 5 to 70 percent of advertised capacities

### Temperature Capabilities<sup>(2)(4)</sup>

**Nitrile (NBR):** -20 to 180°F / -29 to 82°C

**Fluorocarbon (FKM):** 0 to 212°F / -18 to 100°C

**Ethylenepropylene (EPDM - FDA):**

-20 to 212°F / -29 to 100°C

**Perfluoroelastomer (FFKM):**

-20 to 212°F / -29 to 100°C

### IEC Sizing Coefficients

#### Type ACE95<sup>(3)</sup>:

X<sub>T</sub>: 0.72

F<sub>D</sub>: 0.40

F<sub>L</sub>: 0.89

K<sub>m</sub>: 0.79

#### Type ACE95Sr:

X<sub>T</sub>: 0.72

F<sub>D</sub>: 0.46

F<sub>L</sub>: 0.89

K<sub>m</sub>: 0.79

### Flow Coefficients for Relief Valve Sizing

#### Type ACE95:

C<sub>v</sub> 1 use C<sub>v</sub> 1.1

C<sub>v</sub> 2 use C<sub>v</sub> 2.2

C<sub>v</sub> 4 use C<sub>v</sub> 4.4

C<sub>v</sub> 7.5 use C<sub>v</sub> 9.25

C<sub>v</sub> 10 use C<sub>v</sub> 11

#### Type ACE95Sr:

C<sub>v</sub> 20 use C<sub>v</sub> 22

C<sub>v</sub> 45 use C<sub>v</sub> 50

C<sub>v</sub> 60 use C<sub>v</sub> 66

### Construction Materials

**Body:** CF3M/CF8M Stainless steel

**Trim:** 304 Stainless steel and 316 Stainless steel

**Elastomers:** Nitrile (NBR), Fluorocarbon (FKM), Ethylenepropylene-FDA (EPDM-FDA) or Perfluoroelastomer (FFKM)

**Diaphragm:** Fluorinated ethylene propylene (FEP)

**Actuator:** 316 Stainless steel or Carbon steel

### Approximate Weights (with all accessories)

**Type ACE95:** 40 lbs / 18 kg

**Type ACE95Sr:** 60 lbs / 27 kg

1. Various Single Array Manifold (SAM) tank connections are also available. Contact your local Sales Office for more information.

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

3. For NPS 1 / DN 25 body size, all trims.

4. Special low temperature constructions for process temperatures between -49 to 180°F / -45 to 82°C are available by request. The low temperature constructions passed Emerson Process Management Regulator Technologies, Inc. laboratory testing for lockup and external leakage down to -49°F / -45°C.

## Introduction

Tank blanketing is the process of using a gas, such as nitrogen, to maintain a slightly positive pressure in an enclosed storage tank. Tank blanketing prevents a stored product from vaporizing into the atmosphere, reduces product combustibility and prevents oxidation or contamination of the product by reducing its exposure to air. Tank blanketing is utilized with various products, including: adhesives, pharmaceuticals, pesticides, fertilizers, fuels, inks, photographic chemicals and food additives.

Types ACE95 and ACE95Sr valves are self-contained, fully balanced, pilot-operated and are used for accurate pressure control on tank blanketing systems. These valves help control emissions and provide protection against atmospheric contamination.

Types ACE95 and ACE95Sr valves maintain a positive tank pressure which reduces the possibility of tank wall collapse during pump out operations, prevents stored product from vaporizing to atmosphere. The Type ACE95Sr uses an angled body in either a 2 NPT, CL150 RF or CL300 RF and is taller than the Type ACE95.

## Features and Benefits

- **Pilot Controlled**—ACE95 Series valves are pilot operated which results in a high degree of accuracy and control.
- **Fully Balanced Pilot**—Eliminates setpoint changes caused by variations in inlet pressure.
- **Large Actuator**—Large actuator diaphragm increases sensitivity to tank pressure changes.
- **Rolling Pilot Diaphragm**—The rolling diaphragm balances the pilot valve and eliminates friction, resulting in extremely accurate control.
- **Diagnostic Port**—Allows field analysis of valve operation, simplifying maintenance and reducing service costs.
- **Arctic Temperature Constructions**—For process temperatures as low as -49°F / -45°C.

## Options and Accessories

- **Inlet Pressure Gauge**—Displays pressure of blanketing gas supply to the tank blanketing valve.
- **Control Pressure Gauge**—Low-pressure gauge to measure control pressure (tank pressure).
- **Purge Meter (Rotameter)**—Maintains a small amount of flow through the sensing and/or main line. Prevents corrosive tank vapors from damaging upstream equipment.
- **Pressure Switch**—Allows installation of an alarm system to indicate low or high-pressure on the tank.
- **Outlet Check Valve**—Prevents corrosive gases and vapors from flowing back into the blanketing system through the delivery line.
- **Diagnostic Gauge**—Allows analysis of valve operation in the field, simplifying service and reliability.
- **Single Array Manifold (SAM)**—Provides sense line connection and main valve connection through a single tank nozzle. (Not compatible with In-Line end connection).

## Principle of Operation

Types ACE95 and ACE95Sr tank blanketing valves control the vapor space pressure over a stored liquid. When liquid is pumped out of the tank or vapors in the tank condense, the pressure in the tank decreases. Tank pressure is sensed by the large actuator diaphragm. When tank pressure is less than the valve set pressure, spring force moves the actuator diaphragm downward.

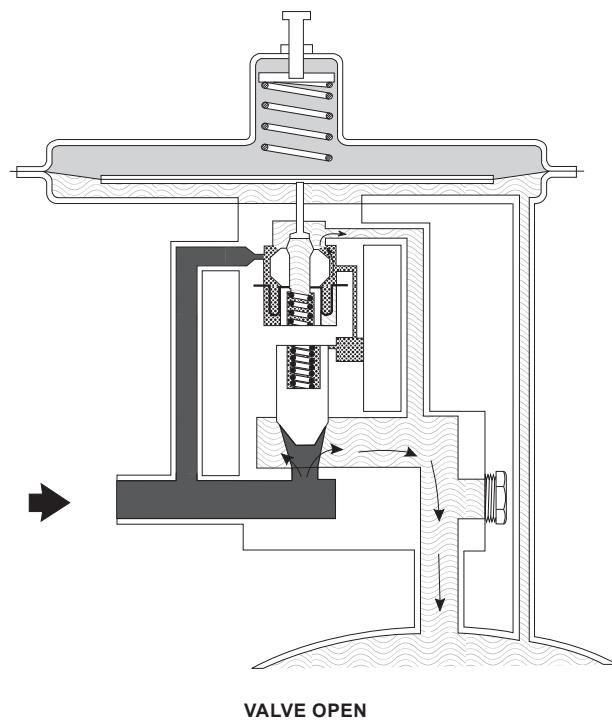
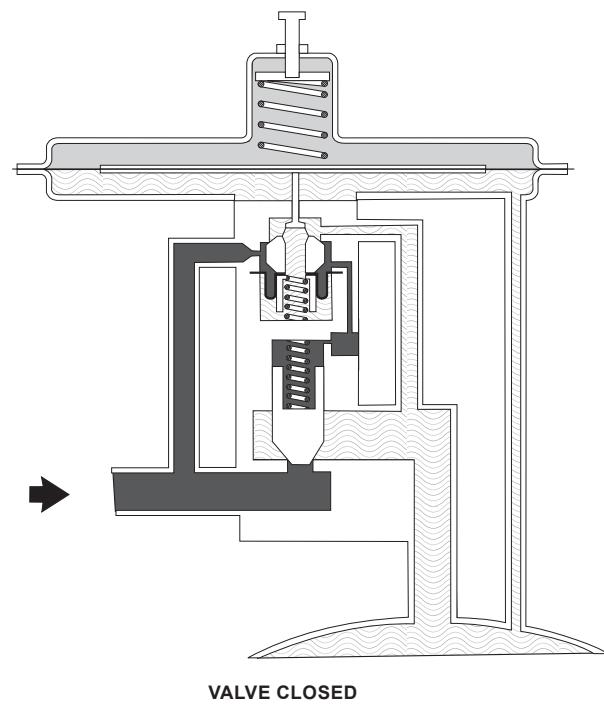
When the actuator moves downward, it pushes open the pilot valve which allows loading pressure to flow into the tank. As loading pressure decreases, inlet pressure is able to overcome the force of the main valve spring, opening the main valve. See Figure 3.

When pressure in the tank increases above setpoint, the large actuator diaphragm is pushed upward, allowing the pilot to close. Loading pressure equalizes with inlet pressure closing the main valve.

The pilot valve is balanced (inlet pressure creates equal upward and downward force on these components); therefore, the outlet pressure of the unit is not affected by fluctuating inlet pressure.

## Types ACE95 and ACE95Sr

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- INLET PRESSURE
- ▨ TANK PRESSURE
- ▨ ATMOSPHERIC PRESSURE
- ▨ INLET BLEED PRESSURE

**Figure 3.** Type ACE95 Operational Schematic

## Diagnostics

Tank blanketing valves are often installed in locations that are difficult to access. Types ACE95 and ACE95Sr valves are available with a diagnostics feature that allows analysis of valve operation in the field, making maintenance easier and more reliable.

The diagnostics feature uses the relationship between pressure in the pilot and main valve chambers to analyze valve performance.

## Sizing Methods

### Direct Displacement

**The direct displacement method should be used with extreme caution.** The direct displacement method determines the amount of blanketing gas required to replace liquid pumped out of the tank. Direct displacement does not allow for fluctuating temperature or other factors that may affect pressure in the vapor space. This method is typically applied to tanks operating at constant temperature and containing non-flammable, non-volatile products.

$$Q_{\text{total}} = Q_{\text{pump}}$$

where,

$Q_{\text{total}}$  = Required Flow Rate

$Q_{\text{pump}}$  = Required Flow Rate to replace pumped out liquid from Table 1

### API 2000

The American Petroleum Institute Standard 2000 (API 2000) sizing method accounts for liquid pump-out as well as contraction of tank vapors due to cooling. When using API methods:

$$Q_{\text{total}} = Q_{\text{pump}} + Q_{\text{thermal}}$$

where,

$Q_{\text{total}}$  = Required Flow Rate

$Q_{\text{pump}}$  = Required Flow Rate to replace pumped out liquid from Table 1

$Q_{\text{thermal}}$  = Required Flow Rate due to thermal cooling. See Thermal Equations 1 to 4 below or Table 2.

### Thermal Equations

For tanks up to 840,000 gallons / 3179 m<sup>3</sup> capacity, use one of the following equations:

#### Equation 1:

$$Q_{\text{thermal}} [\text{SCFH Air}] = V_{\text{tank}} \times 0.0238$$

#### Equation 2:

$$Q_{\text{thermal}} [\text{SCFH Nitrogen}] = V_{\text{tank}} \times 0.0238 \times 1.015$$

#### Equation 3:

$$Q_{\text{thermal}} [\text{Nm}^3/\text{h Air}] = V_{\text{tank}} \times 0.169$$

#### Equation 4:

$$Q_{\text{thermal}} [\text{Nm}^3/\text{h Nitrogen}] = V_{\text{tank}} \times 0.169 \times 1.015$$

where,

For Equations 1 and 2:  $V_{\text{tank}}$  = tank volume, gallons

For Equations 3 and 4:  $V_{\text{tank}}$  = tank volume, m<sup>3</sup>

For tanks greater than 840,000 gallons / 3179 m<sup>3</sup> capacity: See Table 2.

Depending on the method, there can be a significant difference in the calculated required capacity. **No matter which method is used, the tank must be equipped with supplemental venting to protect the tank, product and personnel in cases of equipment failure, fire exposure or other conditions that could cause the tank pressure or vacuum to exceed operating limits.**

### Capacity Information

Capacity information (Tables 2, 3, 4 and 5) are based on 0.97 specific gravity nitrogen. Nitrogen is the most common blanketing gas. Should you use a different gas, convert the tabular values as follows: For blanketing (pad) gases other than nitrogen, multiply the given nitrogen flow rate values by the conversion factors in Table 3. For gases of other specific gravities, multiply the given nitrogen flow rate by 0.985 and divide by the square root of the appropriate specific gravity.

# Types ACE95 and ACE95Sr

**Table 1. Flow Rate Conversion<sup>(1)</sup>**

| MULTIPLY MAXIMUM PUMP RATE OUT: |  | BY     | TO OBTAIN <sup>(1)</sup> : |
|---------------------------------|--|--------|----------------------------|
| U.S. GPM                        |  | 8.021  | SCFH                       |
| U.S. GPH                        |  | 0.1337 | SCFH                       |
| m <sup>3</sup> /hr              |  | 1.01   | Nm <sup>3</sup> /h         |
| Barrels/hr                      |  | 5.615  | SCFH                       |
| Barrels/day                     |  | 0.2340 | SCFH                       |

1. Gas flow of blanketing gas to replace liquid pumped out.

**Table 2. API 2000 Requirements for Thermal Venting Capacity for Tanks Larger than 840,000 gallons / 20,000 barrels / 3179 m<sup>3</sup>**

| TANK CAPACITY |                | IN BREATHING (VACUUM), SCFH / Nm <sup>3</sup> /h OF AIR |                    |
|---------------|----------------|---|--------------------|
| GALLONS       | m <sup>3</sup> | SCFH  | Nm <sup>3</sup> /h |
| 1,050,000     | 4000           | 24,000  | 643                |
| 1,260,000     | 5000           | 28,000  | 750                |
| 1,470,000     | 6000           | 31,000  | 831                |
| 1,680,000     | 7000           | 34,000  | 911                |
| 1,890,000     | 8000           | 37,000  | 992                |
| 2,100,000     | 9000           | 40,000  | 1072               |
| 2,520,000     | 10,000         | 44,000  | 1179               |
| 2,940,000     | 11,000         | 48,000  | 1286               |
| 3,360,000     | 13,000         | 52,000  | 1394               |
| 3,780,000     | 14,000         | 56,000  | 1501               |
| 4,200,000     | 16,000         | 60,000  | 1608               |
| 5,040,000     | 19,000         | 68,000  | 1822               |
| 5,880,000     | 22,000         | 75,000  | 2010               |
| 6,720,000     | 25,000         | 82,000  | 2198               |
| 7,560,000     | 29,000         | 90,000  | 2412               |

**Table 3. Conversion Factors (for converting Nitrogen flow rates to other gas flow rates)**

| BLANKET GAS                                   | SPECIFIC GRAVITY | CORRECTION FACTOR |
|---|------------------|-------------------|
| Natural Gas                                   | 0.60             | 1.270             |
| Air   | 1.00             | 0.985             |
| Dry CO <sub>2</sub>                           | 1.52             | 0.797             |
| Correction Factor = $\frac{0.985}{\sqrt{SG}}$ |                  |                   |

**Table 4. Type ACE95 Capacities**

| INLET PRESSURE |     |                    |     | CAPACITIES IN SCFH / Nm <sup>3</sup> /h OF NITROGEN |                    |                    |                    |                    |                    |                      |                    |                     |                    |
|----------------|-----|--------------------|-----|---|--------------------|--------------------|--------------------|--------------------|--------------------|----------------------|--------------------|---------------------|--------------------|
|                |     |                    |     | C <sub>v</sub> = 1                                  |                    | C <sub>v</sub> = 2 |                    | C <sub>v</sub> = 4 |                    | C <sub>v</sub> = 7.5 |                    | C <sub>v</sub> = 10 |                    |
| psig           | bar | kg/cm <sup>2</sup> | kPa | SCFH  | Nm <sup>3</sup> /h | SCFH               | Nm <sup>3</sup> /h | SCFH               | Nm <sup>3</sup> /h | SCFH                 | Nm <sup>3</sup> /h | SCFH                | Nm <sup>3</sup> /h |
| 25             | 1.7 | 1.76               | 172 | 1130  | 30.3               | 2300               | 61.6               | 4440               | 119                | 9900                 | 265                | 11,200              | 300                |
| 30             | 2.1 | 2.11               | 207 | 1280  | 34.3               | 2670               | 71.6               | 5020               | 135                | 11,200               | 300                | 13,000              | 348                |
| 40             | 2.8 | 2.81               | 276 | 1680  | 45.0               | 3440               | 92.2               | 6780               | 182                | 13,500               | 362                | 16,400              | 440                |
| 50             | 3.5 | 3.52               | 345 | 2050  | 54.9               | 4090               | 110                | 8140               | 218                | 17,800               | 477                | 20,200              | 541                |
| 60             | 4.1 | 4.22               | 414 | 2330  | 62.4               | 4800               | 129                | 9370               | 251                | 18,200               | 488                | 22,700              | 608                |
| 70             | 4.8 | 4.92               | 483 | 2670  | 71.6               | 5450               | 146                | 10,600             | 284                | 23,600               | 632                | 26,600              | 713                |
| 80             | 5.5 | 5.62               | 552 | 3010  | 80.7               | 6160               | 165                | 12,000             | 322                | 27,400               | 734                | 30,800              | 825                |
| 90             | 6.2 | 6.33               | 621 | 3410  | 91.4               | 6840               | 183                | 13,200             | 354                | 30,800               | 825                | 34,100              | 914                |

- continued -

# Types ACE95 and ACE95Sr

**Table 4.** Type ACE95 Capacities (continued)

| INLET PRESSURE |      |                    |      | CAPACITIES IN SCFH / Nm <sup>3</sup> /h OF NITROGEN |                    |                    |                    |                    |                    |                      |                    |                     |                    |
|----------------|------|--------------------|------|---|--------------------|--------------------|--------------------|--------------------|--------------------|----------------------|--------------------|---------------------|--------------------|
|                |      |                    |      | C <sub>v</sub> = 1                                  |                    | C <sub>v</sub> = 2 |                    | C <sub>v</sub> = 4 |                    | C <sub>v</sub> = 7.5 |                    | C <sub>v</sub> = 10 |                    |
| psig           | bar  | kg/cm <sup>2</sup> | kPa  | SCFH  | Nm <sup>3</sup> /h | SCFH               | Nm <sup>3</sup> /h | SCFH               | Nm <sup>3</sup> /h | SCFH                 | Nm <sup>3</sup> /h | SCFH                | Nm <sup>3</sup> /h |
| 100            | 6.9  | 7.03               | 690  | 3690  | 98.9               | 7430               | 199                | 14,600             | 391                | 34,100               | 914                | 38,000              | 1018               |
| 110            | 7.6  | 7.73               | 758  | 4000  | 107                | 8110               | 217                | 16,000             | 429                | 36,800               | 986                | 41,300              | 1107               |
| 120            | 8.3  | 8.44               | 827  | 4370  | 117                | 8750               | 235                | 17,200             | 461                | 38,800               | 1040               | 44,600              | 1195               |
| 130            | 8.9  | 9.14               | 896  | 4590  | 123                | 9340               | 250                | 18,300             | 490                | 43,400               | 1163               | 46,300              | 1241               |
| 140            | 9.6  | 9.84               | 965  | 4930  | 132                | 10,100             | 271                | 19,500             | 523                | 46,500               | 1246               | 50,500              | 1353               |
| 150            | 10.3 | 10.55              | 1034 | 5300  | 142                | 10,800             | 289                | 21,000             | 563                | 49,900               | 1337               | 54,500              | 1461               |
| 160            | 11.0 | 11.25              | 1103 | 5640  | 151                | 11,400             | 306                | 21,500             | 576                | 53,200               | 1426               | 58,200              | 1560               |
| 170            | 11.7 | 11.95              | 1172 | 5950  | 159                | 12,000             | 322                | 23,000             | 616                | 55,800               | 1495               | 62,300              | 1670               |
| 180            | 12.4 | 12.65              | 1241 | 6320  | 169                | 12,600             | 338                | 24,700             | 662                | 59,600               | 1597               | 65,900              | 1766               |
| 190            | 13.1 | 13.36              | 1310 | 6630  | 178                | 13,400             | 359                | 25,600             | 686                | 62,600               | 1678               | 69,600              | 1865               |
| 200            | 13.8 | 14.06              | 1379 | 6970  | 187                | 14,000             | 375                | 27,200             | 729                | 65,100               | 1745               | 71,900              | 1927               |

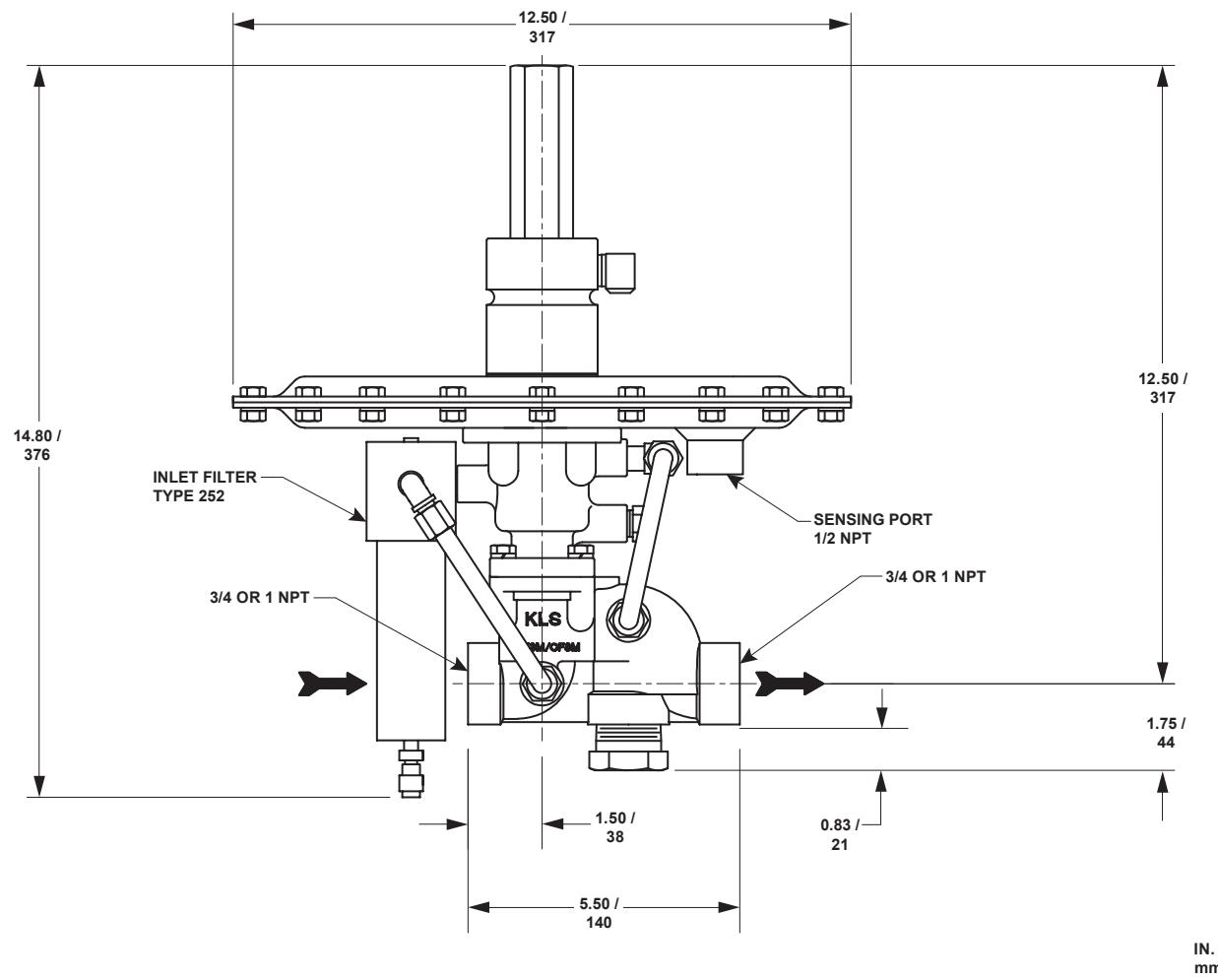
**Table 5.** Type ACE95Sr Capacities

| INLET PRESSURE |      |                    |      | CAPACITIES IN SCFH / Nm <sup>3</sup> /h OF NITROGEN |                    |                     |                    |                     |                    |                      |                    |
|----------------|------|--------------------|------|---|--------------------|---------------------|--------------------|---------------------|--------------------|----------------------|--------------------|
|                |      |                    |      | C <sub>v</sub> = 20                                 |                    | C <sub>v</sub> = 45 |                    | C <sub>v</sub> = 60 |                    | C <sub>v</sub> = 100 |                    |
| psig           | bar  | kg/cm <sup>2</sup> | kPa  | SCFH  | Nm <sup>3</sup> /h | SCFH                | Nm <sup>3</sup> /h | SCFH                | Nm <sup>3</sup> /h | SCFH                 | Nm <sup>3</sup> /h |
| 25             | 1.7  | 1.76               | 172  | 26,700  | 716                | 60,200              | 1613               | 80,000              | 2144               | 100,000              | 2856               |
| 30             | 2.1  | 2.11               | 207  | 30,200  | 809                | 68,100              | 1825               | 90,800              | 2433               | 112,700              | 3020               |
| 40             | 2.8  | 2.81               | 276  | 37,500  | 1005               | 84,500              | 2265               | 112,700             | 3020               | 137,100              | 3674               |
| 50             | 3.5  | 3.52               | 345  | 45,700  | 1225               | 102,800             | 2755               | 137,100             | 3674               | 161,400              | 4325               |
| 60             | 4.1  | 4.22               | 414  | 53,800  | 1442               | 121,000             | 3243               | 161,400             | 4325               | 185,600              | 4974               |
| 70             | 4.8  | 4.92               | 483  | 61,800  | 1656               | 139,200             | 3731               | 209,800             | 5623               | 234,000              | 6271               |
| 80             | 5.5  | 5.62               | 552  | 69,900  | 1873               | 154,400             | 4138               | 209,800             | 5623               | 234,000              | 6271               |
| 90             | 6.2  | 6.33               | 621  | 78,000  | 2090               | 175,500             | 4703               | 234,000             | 6271               | 258,200              | 6920               |
| 100            | 6.9  | 7.03               | 690  | 86,000  | 2305               | 193,600             | 5188               | 258,200             | 6920               | 287,900              | 10,154             |
| 125            | 8.6  | 8.79               | 862  | 102,100   | 2736               | 238,900             | 6402               | 306,500             | 8214               | 427,200              | 11,449             |
| 150            | 10.3 | 10.55              | 1034 | 126,300   | 3385               | 284,200             | 7616               | 378,900             | 10,154             | 518,000              | 13,390             |
| 175            | 12.1 | 12.31              | 1207 | 142,400   | 3816               | 329,400             | 8828               | 427,200             | 11,449             | 562,000              | 15,154             |
| 200            | 13.8 | 14.06              | 1379 | 166,500   | 4462               | 347,700             | 9318               | 499,600             | 13,390             | 627,000              | 17,000             |

**Table 6.** Minimum and Maximum Differential Pressures

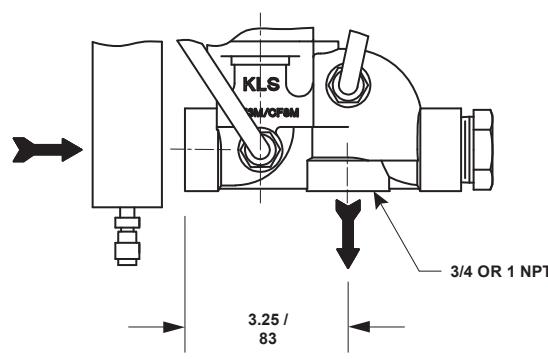
| BODY SIZE | VALVE C <sub>v</sub> | INLET PRESSURE RANGE |            | SPRING PART NUMBER | SPRING FREE LENGTH |      | SPRING WIRE DIAMETER |       |      |
|-----------|----------------------|----------------------|------------|--------------------|--------------------|------|----------------------|-------|------|
|           |                      | psig                 | bar        |                    | In.                | mm   | In.                  | mm    |      |
| 3/4 and 1 | 20 and 25            | 1 to 4               | 25 to 50   | 1.7 to 3.4         | GC220704X22        | 1.50 | 38.1                 | 0.038 | 0.96 |
|           |                      |                      | 51 to 120  | 3.5 to 8.3         | GC220705X22        | 1.50 | 38.1                 | 0.051 | 1.30 |
|           |                      |                      | 121 to 200 | 8.3 to 13.8        | GC220706X22        | 1.50 | 38.1                 | 0.059 | 1.50 |
| 1         | 25                   | 7.5 to 10            | 25 to 50   | 1.7 to 3.4         | GC220705X22        | 1.50 | 38.1                 | 0.051 | 1.30 |
|           |                      |                      | 51 to 120  | 3.5 to 8.3         | GC220706X22        | 1.50 | 38.1                 | 0.059 | 1.50 |
|           |                      |                      | 121 to 200 | 8.3 to 13.8        | GC220709X22        | 1.50 | 38.1                 | 0.072 | 1.83 |
| 2         | 50                   | 20 to 60             | 25 to 50   | 1.7 to 3.4         | GC220714X22        | 4.58 | 116                  | 0.148 | 3.76 |
|           |                      |                      | 51 to 120  | 3.5 to 8.3         | GC220712X22        | 4.00 | 102                  | 0.177 | 4.50 |
|           |                      |                      | 121 to 200 | 8.3 to 13.8        | GC220713X22        | 4.00 | 102                  | 0.218 | 5.54 |

## Types ACE95 and ACE95Sr



GE18680

Figure 4. Type ACE95 NPT and In-Line Connection Dimensions



GE18680

Figure 5. Type ACE95 NPT and Angle Connection Dimensions

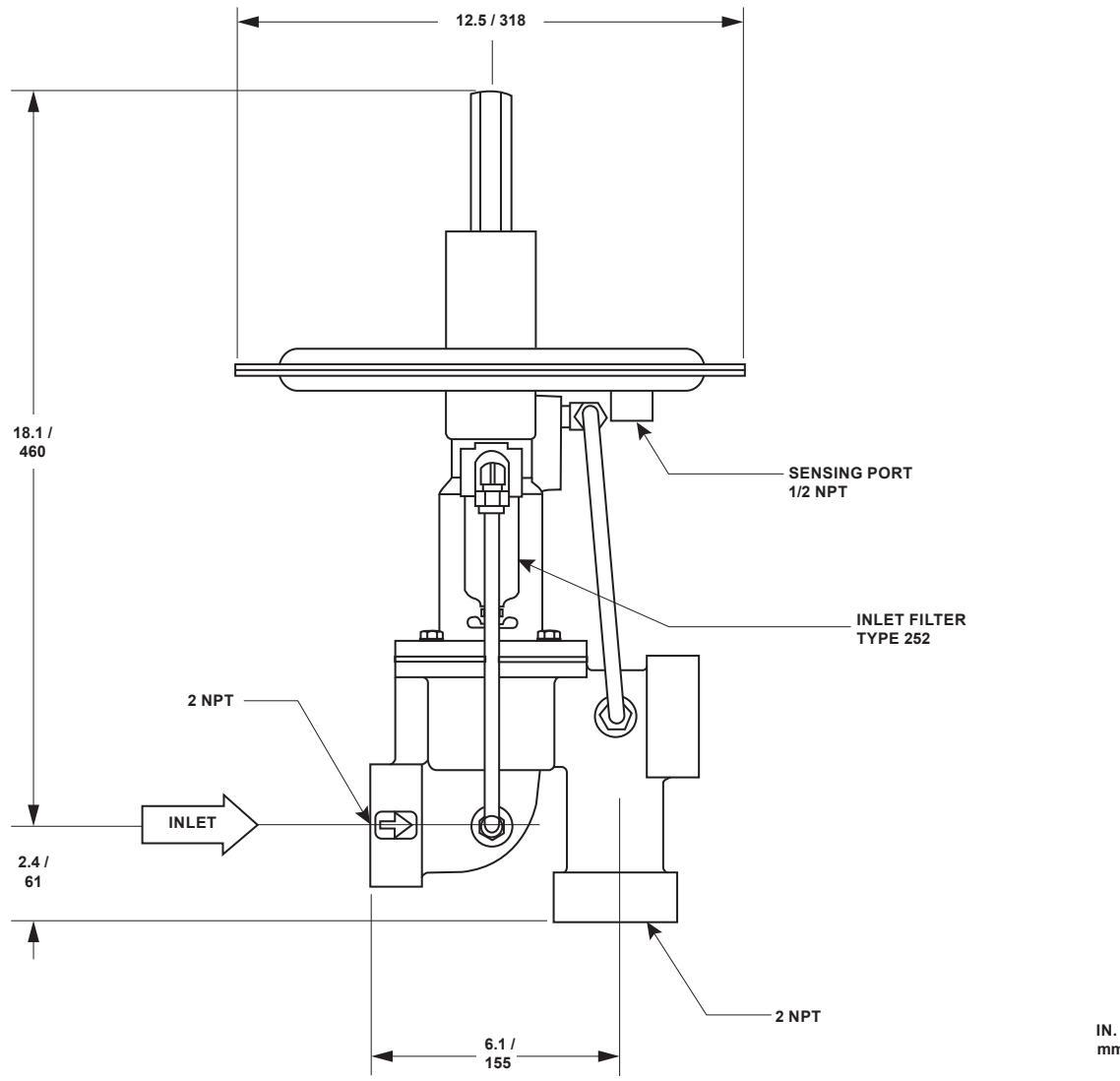


Figure 6. Type ACE95Sr NPT Dimensions

Table 7. Type ACE95 Dimensions (see Figures 7 and 8)

| BODY SIZE       | END CONNECTION STYLE                   | DIMENSIONS |     |      |    |                                       |     |              |                              |
|-----------------|--|------------|-----|------|----|---------------------------------------|-----|--------------|------------------------------|
|                 |  | Angle-Body |     |      |    | Angle and In-Line <sup>(1)</sup> Body |     |              |                              |
|                 |  | A          |     | B    |    | C                                     |     |              |                              |
|                 |  | In.        | mm  | In.  | mm | In.                                   | mm  | Low-Pressure | High-Pressure <sup>(2)</sup> |
| NPS 3/4 / DN 20 | NPT                                    | 3.25       | 83  | 0.83 | 21 | 5.03                                  | 128 |              |                              |
| NPS 1 / DN 25   | NPT                                    | 3.25       | 83  | 0.83 | 21 | 5.03                                  | 128 | 12.5         | 317                          |
|                 | CL150, CL300 and PN 16/25/40 RF Flange | 5.89       | 150 | 3.47 | 88 | 7.67                                  | 195 |              |                              |
|                 | CL150 and CL300 RF Weld Neck Flange    | 5.22       | 133 | 2.80 | 71 | 7.00                                  | 128 |              |                              |
|                 | Sanitary Flange                        | 6.05       | 154 | 3.63 | 92 | 7.83                                  | 199 |              |                              |

1. For In-Line body: available only for NPS 1 / DN 25 body size with CL150 RF flange.

2. High-pressure body requires a unique spring case which is available as special order.

# Types ACE95 and ACE95Sr

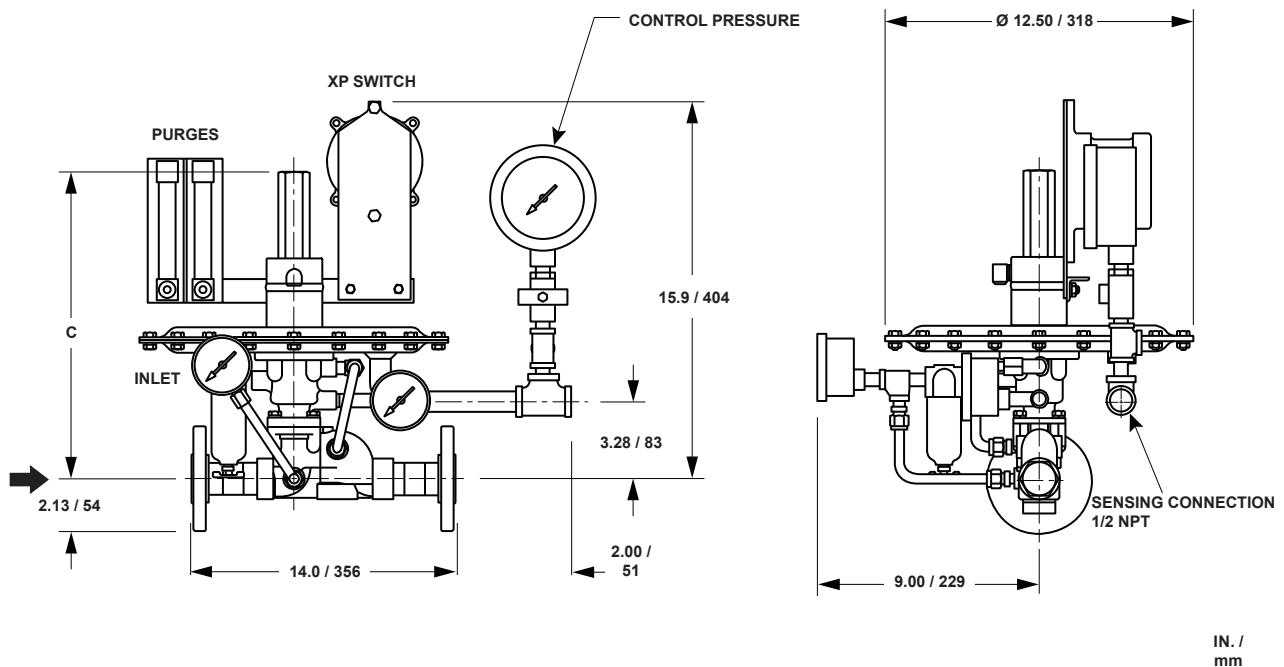
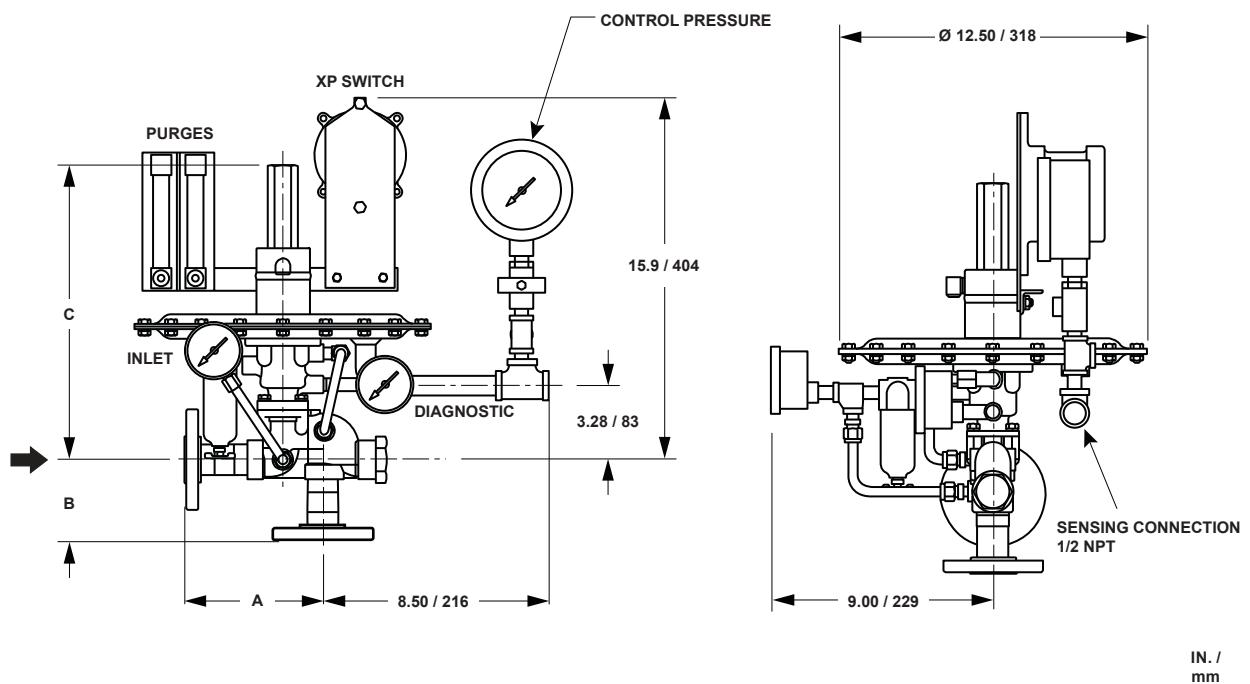


Figure 7. ACE95 Series Flanged and In-Line Body Dimensions (see Table 7)



GC950902

Figure 8. ACE95 Series Flanged and Angle Body Dimensions (See Table 7)

## Ordering Information

Refer to the Specifications section on page 2. Carefully review each specification and construction feature, then complete the Ordering Guide on pages 11 and 12.

Also, please complete the Specifications Worksheet at the bottom of the Ordering Guide on page 12.

## Ordering Guide

### Type (Select One)

- ACE95
- ACE95Sr

### Body Size and Inlet Connection Style (Select One)

#### Type ACE95 (Angled Body)

- 3/4 NPT
- 1 NPT
- NPS 1 / DN 25, CL150 RF
- NPS 1 / DN 25, CL300 RF
- NPS 1 / DN 25, PN 16/25/40 RF
- NPS 1 / DN 25, Sanitary Flange

#### Type ACE95 (In-Line Body)

- 3/4 NPT
- 1 NPT
- NPS 1 / DN 25, CL150 RF
- NPS 1 / DN 25, CL300 RF
- NPS 1 / DN 25, PN 16/25/40 RF
- NPS 1 x 2 / DN 25 x 50, CL150 RF
- NPS 1 x 2 / DN 25 x 50, PN 16/25/40 RF
- NPS 1 / DN 25, Sanitary Flange

#### Type ACE95Sr (Angled Body)

- 2 NPT
- NPS 2 / DN 50, CL150 RF
- NPS 2 / DN 50, CL300 RF

### Actuator/Diaphragm (Select One)

- Carbon steel with FEP diaphragm
- 316 Stainless steel with FEP diaphragm

### Elastomers (Select One)

- Nitrile (NBR)
- Fluorocarbon (FKM)
- Ethylenepropylene (EPDM - FDA)
- Perfluoroelastomer (FFKM)

### Main Valve Coefficient (Select One)

#### Type ACE95

- $C_v$  – 10 (not available in 3/4 NPT)
- $C_v$  – 7.5 (not available in 3/4 NPT)
- $C_v$  – 4
- $C_v$  – 2
- $C_v$  – 1

#### Type ACE95Sr

- $C_v$  – 60
- $C_v$  – 45
- $C_v$  – 20

### Control Pressure Range (Select One)

- 0.5 to 5 in. w.c. / 1 to 12 mbar
- 4 to 10 in. w.c. / 10 to 25 mbar
- 8 to 15 in. w.c. / 20 to 37 mbar
- 0.5 to 1.5 psig / 0.03 to 0.10 bar
- 1 to 1 in. w.c. / -2 to 2 mbar
- 0.5 to -5 in. w.c. / -1 to -12 mbar

### Inlet Operating Range (Select One)

- 25 to 50 psig / 1.7 to 3.5 bar
- 51 to 120 psig / 3.5 to 8.3 bar
- 121 to 200 psig / 8.3 to 13.8 bar

### Options (Select Desired Options)

- Stainless steel Filter in lieu of standard Aluminum/Zinc
- Inlet Pressure Gauge, Stainless steel
- Control Pressure Gauge, Dwyer®
- Control Gauge, Stainless steel, for setpoint below 2 in. w.c. / 5 mbar
- Control Gauge, Stainless steel, for setpoint above 2 in. w.c. / 5 mbar
- Sensing Line Purge, Acrylic
- Sensing Line Purge, Stainless steel
- Main Line Purge, Acrylic
- Main Line Purge, Stainless steel
- Pressure Switch, X-Proof
- Main Line Check Valve, Stainless steel
- Diagnostic and Inlet Gauges, Stainless steel

- *continued* -

# Types ACE95 and ACE95Sr

## Ordering Guide (continued)

### Single Array Manifold (Optional)

Yes, please add a SAM unit to my order. Please specify tank connection size and style (i.e. NPS 2 / DN 50, CL150 RF). Not available for In-Line bodies.

### Parts Kit (Optional)

Yes, please send one parts kit to match this order.

| Specification Worksheet                                |  |
|--|--|
| <b>Application Specifications:</b>                     |  |
| Product in Tank  | _____  |
| Tank Size  | _____  |
| Pump In Rate   | _____  |
| Pump Out Rate  | _____  |
| Blanketing Gas (Type and Specific Gravity)             | _____  |
| Conservation Vent Setpoints:                           | _____ Pressure _____ Vacuum                              |
| <b>Pressure Requirements (Please Designate Units):</b> |  |
| Maximum Inlet Pressure ( $P_{1\max}$ )                 | _____  |
| Minimum Inlet Pressure ( $P_{1\min}$ )                 | _____  |
| Control Pressure Setting ( $P_2$ )                     | _____  |
| Maximum Flow ( $Q_{\max}$ )                            | _____  |
| <b>Other Specifications:</b>                           |  |
| Is a vapor recovery regulator required?                | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Other Requirements:                                    | _____  |
| _____  | _____  |
| _____  | _____  |

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