Data Sheet
D-FV-10A6100_5(US)

# Variable Area Flowmeters
# Global Purgemaster
## 10A6100

- **High Strength Stainless Steel Body** - Rigid construction to maintain tube alignment and resistance to pipe strain.
- **"Snap-in" Tube Construction** - Minimizes the downtime needed to clean the meter tube or to change the meter range.
- **Optimum Variety** - Available in 1-1/2, 3, 5, and 10 inch scale lengths and end fitting materials of stainless steel and KYNAR®
- **Internal Back check** - Restricts back flow and draining of process fluid when metering tube is removed. (Not available with outlet control valve.)
- **Control Valve** - The optional control valve provides a smooth fine degree of adjustment.
- **Versatile Flow Controller** - The optional Differential Pressure Regulator is designed to give reliable flow control regardless of changes in upstream pressure.
- **Adjustable Alarms** - Single (min. or max.) or Dual (min. & max) alarm sensors are adjustable over the entire meter range.

Purgemaster™
Series 10A6100

## PURGEMASTER™

The Purgemaster Purge Meters are low capacity variable area flowmeters for both liquid and gas with an excellent selection of material and scale lengths in a single product family design. They provide optimum flexibility with minimum component proliferation. The meter features a corrosion resistant, high strength stainless steel body, quick, easy snap-in tube construction and a safety tested operator protection shield.

The Purgemaster is ideal for such applications as the purging of control lines and instrument enclosures. Their use is easily extended into fluid sampling, liquid specific gravity, and level measurement and similar services.

## Engineering Specifications

**Performance:**

**Repeatability**: 0.5% of full scale reading.

**Accuracy**:

ACCURACY STATEMENT
± Percent of Full Scale

| Scale Length | Standard Accuracy | Optional Accuracy |
|---|---|---|
| 1-1/2" (38 mm) | 10% | 4% |
| 3" (75 m) | 10% | 4% |
| 5" (127 mm) | 2%* | 1%* |
| 10" (250 mm) | 2% | 1% |

* Except tube number FP-1/16-xx-G5 which have ±5% standard accuracy and ±2% optional accuracy.

**Rangeability**: 10 to 1 or greater

**Operational Limits:**

**Ambient Temperature Limits:**
32°F to 140°F (0ºC to 60°C)

**Minimum Temperature**: 32°F (0°C)

**Minimum Pressure**: Full vacuum. If vacuum conditions require a control valve, it should be in the outlet fitting.

**Maximum Process Temperature and Pressure**: Temperature and pressure are interdependent but the listed combination limits must not be exceeded.

| End Fitting Mat'l | Type Adaptor Mat'l | Max. Fluid Temp. ºF(ºC) | Maximum Fluid Pressure PSIG (kPa) Operating Temperature ºF(ºC) | | | |
|---|---|---|---|---|---|---|
| | | | <100ºF (38ºC) | 150ºF (65ºC) | 200ºF (93ºC) | 250ºF (120ºC) |
| 316SS | 316SS | 250 (120) | 250 (1724) | 250 (1724) | 250 (1724) | 250 (1724) |
| 316SS | KYNAR | 200 (93) | 250 (1724) | 225 (1550) | 200 (1380) | --- |
| KYNAR | KYNAR | 150 (65) | 200 (1380) | 150 (1034) | --- | --- |

**Materials of Construction:**

**Meter**

**Tube***: Borosilicate glass

**Floats***: Refer to Capacity Tables (Table I, II, III, & IV)

**End Fittings***: 316 stainless steel and KYNAR®

**Tube Adaptor***: 316 stainless steel or KYNAR® with stainless end fittings, KYNAR® with Kynar end fittings

**Tube Adaptor Spring***: 316 stainless steel with stainless steel end fittings, Hastelloy "C" with KYNAR® end fittings.

**Float Stop***: 1-1/2 and 3 inch meters 316 stainless steel with stainless steel end fittings, Hastelloy "C" with KYNAR® end fittings; 5 and 10 inch meter - Teflon.

**Tube Rest Gasket**: Teflon

**O-Ring***: Viton when stainless or KYNAR® end fittings are specified.

**Optional**: Butyl Rubber, Ethylene Propylene Rubber and Kalrez.®

**Valve Stem***: Stainless steel with stainless fittings; KYNAR® tip over stainless steel (non-process wetted) with KYNAR® fittings.

**Internal Back check***: Teflon

**Body**: 304 stainless steel

**Shield**: Polycarbonate

**Process wetted parts*

***Caution***

It is important that the process wetted parts materials are compatible with the process fluid. Meter damage, with potential resulting unsafe conditions, can occur if the wrong material is used. For example, VITON O-rings MUST NEVER BE USED FOR AMMONIA SERVICE

***Warning***
**Operating the meter without the protection shield may result in operator bodily injury.**

**Connections**: 1/4 inch NPT. Inlet and outlet fittings are horizontal and face back.
**Mounting**: In-line; wall or front of panel through mounting holes in back of the body; or rear of panel mounting.

**Scale Length**: 1-1/2, 3, 5, and 10 inch.

**Scales** (on tube): As indicated in capacity tables. (Optional metal scale for 5 and 10" rear panel mounting)

## Differential Pressure Regulator[1]

**Body**: 316 stainless steel
**Diaphragm**: Viton (with stainless body); Buna-N (optional).
**Ball Valve**: 316 stainless steel
**Springs**: Type 316 stainless steel
**Max Pressure**: 200 psig (1380kPa) at 100°F (38°C)
**Maximum Differential Pressure**: 100 psi (690 kPa)
**Pipe Connection**: 1/4" NPT internal threads

## Weight (Approximation)

**Purge Meter Only**

| Scale Length | lb | Kg |
|---|---|---|
| 1-1/2" (38 mm) | 1.0 | 0.45 |
| 3" (75 mm) | 1.0 | 0.45 |
| 5" (127 mm) | 1.4 | 0.65 |
| 10" (250 mm) | 1.8 | 0.80 |

**Purge Meter with Regulator**: Add 2-1/2 lb (1.15kg) to weights listed above.

*Note 1: When combined with a 53R2110 Differential Pressure Regulator, the PURGEMASTER can control a flow of liquid or gas that is subject to varying line pressure. However, due to gas compressibility, the true value of mass flow rate of a gas can be measured only if the downstream pressure remains constant.*

## Alarms

**Principle of operation**
The ring sensors with a bistable switching action picks up the relay in the amplifier when the ball float reaches the trigger level and remains in that position, even if the float continues to move towards the alarm zone, thus leaving the trigger level. The relay will drop out as soon as the float crosses the trigger level from the opposite direction, and moves back from the alarm zone into the normal operating range. The actual float position - above or below the trigger level - is precisely indicated.

Explosion hazardous operation is feasible, since the ring sensor used is an intrinsically safe switch with intrinsically safe circuit. Due to the relatively short metering tube, type 10A6131 is suitable either as a minimum or a maximum alarm. Models 10A6132 or 10A6133 are recommended if both alarm operations are required.

**Design Features**

- Sensor height 14 mm, therefore only small coverage of the scale.
- Integrated clamp device directly to the meter body. No automatically adjustability during operation possible.

**Alarm Specifications**

**Ring sensor**
RC-10-14-N for 1/8 inch meter tubes,
RC-10-15-N for 1/4 inch meter tubes
Bistable Switching Action
FM Approved for
Class I, Div 1, Groups A, B, C and D;
Class II, Div 1, Groups E, F, and G
Class III, Div 1
**Power supply requirements:** 5 to 25 V dc
**Load Current (current range):** ≤ 0.01mA, ≥ .3 mA
**Repeatability:** ≤ 0.01 mm
**Self Inductance:** 100 µH
**Self Capacitance:** 150 nF
**Ambient temp. limit:** -14°F(-26° C) to 158°F(70°C)
**Cable:** 6 1/2 feet (2m) standard (max. 9800 feet (3000 m) possible)
**Housing:** Crastin, black
**Protective Class:** NEMA 4X/IP67
**Weight:** 150 g (approximate)

**Switching amplifier**

**Type:** Pepperl + Fuchs model (s) KFA 5 (6)-SR2-Ex.W

**Contact rating:** max. 250 VA, max. 2A

**Supply Voltage:** 120 Vac, 240 Vac, ±15%, 45 - 65 Hz

**Response Time:** Energize approximately 20 ms, De-energized approximately 20 ms

**Output Type:** Single Pole Double Throw (SPDT)

**Ambient temp. limits:** -4°F (-20°C) to + 140°F (60°C)
**Maximum Wire Size:** 2.5 $mm^2$ (14 AWG)

**Approvals:** IP20; Hazardous field circuit EExia IIC and FM Class I, Div. 1, Groups A to G. The KFA relay amplifiers must be installed in the non-hazardous area when connected to the RC-10 sensors.

**Housing Material:** Makrolon

**Weight:** 150 g. (5.2 oz.)

**Ordering Information:**
When ordering, please specify:
- Complete model number.
- Materials of construction (end fittings, regulator body).
- Maximum capacity and unit of flow.
- Mounting.
- Type of scale.
- Accessories.
- Operating conditions such as:
  - Fluid measured
  - Operating and maximum temperature
  - Operating and maximum pressure
  - Fluid density
  - Fluid viscosity

***Caution***

Glass tubes are not recommended for either hot or strong alkalies; fluorine, or hydrofluoric acid. Meter tubes should be periodically inspected for signs of wear. Erosion, stress cracks or nicks provide early warning for tube replacement. With certain fluids, the glass may erode unevenly so that wear is not visibly noticeable. If wear is suspected, the tube should be replaced.

## Typical Specifications

The purge meter shall have 304 stainless steel body, (KYNAR®) (316 stainless steel) end fittings and (Buna-N) (Viton) O-rings.[1]

The metering tube shall be easily removable for range change or cleaning without removing the meter from the line or without the use of tools.

Meter scale length shall be (1-1/2inches percent only), (3 inches) (5 inches) (10 inches) with (percent) (mm) (direct reading) scale inked directly on the tube.

Flow rate shall be (range and units) of (fluid) metered at (temperature and pressure). Maximum temperature and pressure shall be (specify).

When integral control valve is required,[2] Add: an integral (stainless steel) (KYNAR®) control valve shall be provided.

When constant Differential Pressure Regulator is required, Add: A stainless steel constant Differential Pressure Regulator shall be provided to maintain a constant flow rate with varying line pressures.

*[1] Viton O-rings with stainless steel and KYNAR® end fitting.*
*[2] Always required with Differential Pressure Regulator*

**1-1/2 INCH SCALE METER**

Scales (On Tube)
Standard: Percentage or direct reading for water & air capacities listed in Table 1
Optional: Custom direct reading scales other than shown in Table 1

**TABLE 1**
**1½" Scale Length Capacities (Maximum Flow Rates)**

| Tube Length (inches) | Tube Diameter (inches) | Tube | Tube Code | Float[1] | Float Code | Water cc/min | Air scc/min 14.7 psia & 70°F | Pressure Drop inches of water |
|---|---|---|---|---|---|---|---|---|
| 1½ | 1/16 | FP-1/16-08-1½ | 01 | BG | A | 0.8* # | 65* # | 1.2 |
| | | | | SA | C | 1* # | 95* # | 1.3 |
| | | | | SS | D | 4* # | 180* # | 1.7 |
| 1½ | 1/16 | FP-1/16-30-1½ | 02 | BG | A | 7# | 420# | 1.5 |
| | | | | SA | C | 13 | 560 | 1.7 |
| | | | | SS | D | 22 | 900 | 2 |
| 1½ | 1/8 | FP-1/8-21-1½ | 03 | BG | A | 38 | 2100 | 2 |
| | | | | SA | C | 60 | 2600 | 3.5 |
| | | | | SS | D | 120 | 4000 | 7.5 |
| | | | | CA | E | 180 | 5400 | |
| 1½ | 5/32 | FP-5/32-40-1½ | 04 | BG | A | 190 | 8000 | 14 |
| | | | | SS | D | 450 | 15000 | 50 |
| 1½ | 1/4 | FP-1/4-28-1½ | 05 | SA | C | 580 | 18000 | |
| | | | | SS | D | 850* | 28000* | 100 |
| 1½ | 1/4 | FP-1/4-41-1½ | 06 | SS | D | 1600* | 48000* | 210 |
| | | | | CA | E | 2200*## | 70000*## | 475 |

* - Not available with 53RT 2110 constant flow differential pressure regulator.
# - Specify low capacity valves for stainless steel end fittings. Specify standard capacity valves for KYNAR end fittings.
##- Specify high capacity valves for stainless steel end fittings. Specify standard capacity for KYNAR end fittings.
[1] - Key to float nomenclature: BG = black glass, SA = sapphire, SS = stainless steel, CA = carbaloy

## 3 Inch Scale Meter

Scales (On Tube)
Standard: Percentage or direct reading for water & air capacities listed in Table 2
Optional: Custom direct reading scales other than shown in Table 2

**TABLE 2**
**3" Scale Length Capacities (Maximum Flow Rates)**

| Tube Length (inches) | Tube Diameter (inches) | Tube | Tube Code | Float[1] | Float Code | Water cc/min | Air scc/min 14.7 psia & 70°F | Pressure Drop inches of water |
|---|---|---|---|---|---|---|---|---|
| 3 | 1/8 | FP-1/8-08-P3 | 07 | BG | A | 4.6 | 380 | 1.4 |
| | | | | SA | C | 8.5 | 520 | |
| | | | | SS | D | 20 | 900 | 2.2 |
| | | | | CA | E | 34 | 1350 | |
| | | | | TA | F | 36 | 1450 | |
| 3 | 1/8 | FP-1/8-20-P3 | 08 | BG | A | 29 | 1600 | 2.5 |
| | | | | SA | C | 48 | 2100 | |
| | | | | SS | D | 90 | 3200 | 5 |
| | | | | CA | E | 130 | 4400 | |
| | | | | TA | F | 145 | 4800 | |
| 3 | 1/4 | FP-1/4-15-P3 | 09 | BG | A | 150 | 7000 | 8.3 |
| | | | | SA | C | 230 | 9000 | |
| | | | | SS | D | 400 | 13000 | 25 |
| | | | | CA | E | 580 | 18000 | |
| 3 | 1/4 | FP-1/4-20-P3 | 10 | BG | A | 240 | 10500 | 18 |
| | | | | SA | C | 360 | 13000 | |
| | | | | SS | D | 580 | 19000 | 55 |
| | | | | CA | E | 850 | 26000 | |
| 3 | 1/4 | FP-1/4-41-G3 | 11 | BG | A | 500 | 21000 | |
| | | | | SA | C | 750 | 27000 | |
| | | | | SS | D | 1250 * | 40000 * | 222 |
| | | | | CA | E | 1800 * | 56000 * | 425 |
| | | | | TA | F | 1900 * | 58000 * | |
| 3 | 1/4 | FP-1/4-41-P3 | 12 | BG | A | 700 | 27000 | |
| | | | | SA | C | 1000 * | 34000 * | |
| | | | | SS | D | 1600 * | 50000 * | |
| | | | | CA | E | 2200 * | 65000 * | |
| | | | | TA | F | 2400 * | 70000 * | |

* - These capacities are not available with constant flow regulator
[1] - Key to float nomenclature: BG = black glass, SA = sapphire, SS = stainless steel, CA = carbaloy, TA = tantalum
[2] - Specify standard capacity valves for all capacities and all end fitting materials.

## 5 Inch Scale Meter

Scales (On Tube)
Standard: Percentage millimeter scales with standard water & air curves or direct reading for water & air capacities listed in Table 3
Optional: Custom direct reading scales other than shown in Table 3

**TABLE 3**
**5" Scale Length Capacities (Maximum Flow Rates)**

| Tube Length (inches) | Tube Diameter (inches) | Tube | Tube Code | Float[1] | Float Code | Water cc/min | Air scc/min 14.7 psia & 70°F | Pressure Drop inches of water |
|---|---|---|---|---|---|---|---|---|
| 5 | 1/16 | FP-1/16-10-G5 | 13 | BG | A | 0.52 *# | 47 *# | |
| | | | | SA | C | 1 *# | 74 *# | |
| | | | | SS | D | 2.35 *# | 135 *# | |
| | | | | CA | E | 4. *#7 | 225 *# | |
| | | | | TA | F | 5.2 *# | 240 *# | |
| 5 | 1/16 | FP-1/16-12-G5 | 14 | BG | A | 0.96 *# | 80 *# | |
| | | | | SA | C | 1.8 *# | 120 *# | |
| | | | | SS | D | 4.1 *# | 205 *# | |
| | | | | CA | E | 7.6 *# | 320 *# | |
| | | | | TA | F | 8.4 *# | 340 *# | |
| 5 | 1/16 | FP-1/16-16-G5 | 15 | BG | A | 1.7 *# | 130 *# | |
| | | | | SA | C | 3.1 *# | 190 *# | |
| | | | | SS | D | 7 *# | 320 *# | |
| | | | | CA | E | 12 *# | 490 *# | |
| | | | | TA | F | 13.5 *# | 520 *# | |
| 5 | 1/16 | FP-1/16-20-G5 | 16 | BG | A | 2.6 *# | 195 *# | |
| | | | | SA | C | 4.7 *# | 280 *# | |
| | | | | SS | D | 10.4 *# | 440 *# | |
| | | | | CA | E | 17.5 *# | 660 *# | |
| | | | | TA | F | 19.5 *# | 700 *# | |
| 5 | 1/8 | FP-1/8-08-G5 | 17 | BG | A | 6 # | 390 # | 1.3 |
| | | | | SA | C | 10.8 # | 540 # | 1.5 |
| | | | | SS | D | 20.5 | 820 | |
| | | | | CA | E | 33 | 1250 | |
| | | | | TA | F | 35 | 1350 | |
| 5 | 1/8 | FP-1/8-12-G5 | 18 | BG | A | 14 | 720 | 1.5 |
| | | | | SA | C | 21.5 | 920 | |
| | | | | SS | D | 39 | 1450 | |
| | | | | CA | E | 60 | 2150 | |
| | | | | TA | F | 64 | 2250 | |
| 5 | 1/8 | FP-1/8-16-G5 | 19 | BG | A | 22.5 | 1080 | 1.9 |
| | | | | SA | C | 35 | 1450 | 2.2 |
| | | | | SS | D | 61 | 2150 | 3.4 |
| | | | | CA | E | 92 | 3100 | |
| | | | | TA | F | 96 | 3300 | |
| 5 | 1/8 | FP-1/8-20-G5 | 20 | BG | A | 31 | 1450 | |
| | | | | SA | C | 47 | 1900 | |
| | | | | SS | D | 82 | 2900 | 4 |
| | | | | CA | E | 120 | 4100 | |
| | | | | TA | F | 130 | 4400 | |

## 5 Inch Scale Meter (continued)

Scales (On Tube)
Standard: Percentage millimeter scales with standard water & air curves or direct reading for water & air capacities listed in Table 3
Optional: Custom direct reading scales other than shown in Table 3

**TABLE 3 (continued)**
**5" Scale Length Capacities (Maximum Flow Rates)**

| Tube Length (inches) | Tube Diameter (inches) | Tube | Tube Code | Float[1] | Float Code | Water cc/min | Air scc/min 14.7 psia & 70°F | Pressure Drop inches of water |
|---|---|---|---|---|---|---|---|---|
| 5 | 1/8 | FP-1/8-25-G5 | 21 | BG | A | 43 | 1950 | 2.5 |
| | | | | SA | C | 64 | 2500 | |
| | | | | SS | D | 110 | 3800 | 4.8 |
| | | | | CA | E | 165 | 5400 | |
| | | | | TA | F | 175 | 5600 | |
| 5 | 1/4 | FP-1/4-10-G5 | 22 | BG | A | 88 | 4100 | 3.3 |
| | | | | CD | B | 76 | 3800 | |
| | | | | SA | C | 130 | 5200 | |
| | | | | SS | D | 230 | 7800 | |
| | | | | CA | E | 340 | 11200 | |
| | | | | TA | F | 370 | 11704 | |
| 5 | 1/4 | FP-1/4-16-G5 | 23 | BG | A | 170 | 7400 | 6.7 |
| | | | | CD | B | 150 | 7000 | |
| | | | | SA | C | 250 | 9600 | |
| | | | | SS | D | 420 | 14500 | 33 |
| | | | | CA | E | 620 | 20000 | |
| | | | | TA | F | 660 | 21000 | |
| 5 | 1/4 | FP-1/4-20-G5 | 24 | BG | A | 225 | 9600 | 12 |
| | | | | CD | B | 205 | 9200 | |
| | | | | SA | C | 340 | 12500 | |
| | | | | SS | D | 550 | 39 scfh | 50 |
| | | | | CA | E | 820 | 56 scfh | |
| | | | | TA | F | 880 | 58 scfh | |
| 5 | 1/4 | FP-1/4-25-G5 | 25 | BG | A | 300 | 12600 | 18 |
| | | | | CD | B | 270 | 12000 | |
| | | | | SA | C | 440 | 16000 | |
| | | | | SS | D | 720 | 50 scfh | 71 |
| | | | | CA | E | 1060 * | 70 scfh * | 113 |
| | | | | TA | F | 1120 * | 74 scfh * | |
| 6 | 1/4 | FP-1/4-40-G6 | 26 | BG | A | 570 | 49 scfh | 56 |
| | | | | CD | B | 560 | 54 scfh | |
| | | | | SA | C | 900 | 75 scfh | |
| | | | | SS | D | 1340 * | 96 scfh * | 189 |
| | | | | CA | E | 2000 *## | 135 scfh *## | 385 |
| | | | | TA | F | 2400 *## | 160 scfh *## | |

* - Not available with 53RT 2110 constant flow differential pressure regulator.
# - Specify low capacity valves for stainless steel end fittings & standard capacity valves for KYNAR end fittings.
## - Specify high capacity valves for stainless steel fittings & standard capacity valves for KYNAR end fittings.
[1] - Key to float nomenclature: BG = black glass, SA = sapphire, SS = stainless steel, CA = carbaloy

## 10 Inch Scale Meter

Scales (On Tube)
Standard: Percentage millimeter scales with standard water & air curves or direct reading for water & air capacities listed in Table 4
Optional: Custom direct reading scales other than shown in Table 4

**TABLE 4**
**10" Scale Length Capacities (Maximum Flow Rates)**

| Tube Length (inches) | Tube Diameter (inches) | Tube | Tube Code | Float[1] | Float Code | Water cc/min | Air scc/min 14.7 psia & 70°F | Pressure Drop inches of water |
|---|---|---|---|---|---|---|---|---|
| 10 | 1/8 | FP-1/8-077-G10 | 27 | BG | A | 6 # | 365 # | 1.5 |
| | | | | SA | C | 10.4 # | 510 # | 1.8 |
| | | | | SS | D | 21.2 | 1.7 scfh | 2.2 |
| | | | | CA | E | 34 | 2.6 scfh | |
| | | | | TA | F | 36 | 2.7 scfh | |
| 10 | 1/8 | FP-1/8-13.3-G10 | 28 | BG | A | 16.4 | 1.8 scfh | 1.9 |
| | | | | SA | C | 28 | 2.4 scfh | 2.3 |
| | | | | SS | D | 44 | 3.7 scfh | 3 |
| | | | | CA | E | 75 | 5.4 scfh | |
| | | | | TA | F | 80 | 5.6 scfh | |
| 10 | 1/8 | FP-1/8-32-G10 | 29 | BG | A | 48.5 | 4.6 scfh | 3.4 |
| | | | | SA | C | 73 | 6 scfh | 4.8 |
| | | | | SS | D | 122 | 9.3 scfh | 7.9 |
| | | | | CA | E | 184 | 13.8 scfh | 9 |
| 10 | 1/4 | FP-1/4-10-G10 | 30 | BG | A | 91 | 9.2 scfh | 2.6 |
| | | | | SA | C | 140 | 122 scfh | |
| | | | | SS | D | 240 | 18 scfh | |
| | | | | CA | E | 365 | 25 scfh | 18.4 |
| | | | | TA | F | 380 | 26 scfh | |
| 10 | 1/4 | FP-1/4-19-G10 | 31 | BG | A | 224 | 20 scfh | 11.5 |
| | | | | SA | C | 340 | 26 scfh | |
| | | | | SS | D | 535 | 37.5 scfh | 49 |
| | | | | CA | E | 800 * | 53.5 scfh * | 75 |
| | | | | TA | F | 850 * | 56 scfh * | |
| 10 | 1/4 | FP-1/4-40-G10 | 32 | BG | A | 590 | 52.2 scfh | 63 |
| | | | | SA | C | 900 * | 75 scfh * | |
| | | | | SS | D | 1300 * | 92 scfh * | 225 |
| | | | | CA | E | 1880 *## | 132 scfh *## | 465 |
| | | | | TA | F | 2400 *## | 160 scfh *## | |

* - Not available with 53RT 2110 constant flow differential pressure regulator.
# - Specify low capacity valves for stainless steel end fittings & standard capacity valves for KYNAR end fittings.
## - Specify high capacity valves for all stainless steel fittings & standard capacity valves for KYNAR end fittings.
[1] - Key to float nomenclature: BG = black glass, SA = sapphire, SS = stainless steel, CA = carbaloy

| **Global Purgemaster** | | **10A61** |
|---|---|---|
| For quantity greater than 20 call | | |
| ***1 : Process Connections*** | | |
| 1/4" NPT | | **3** |
| ***2 : Meter Tube, Scale Length*** | | |
| 3" Scale | | **1** |
| 5" Scale | | **2** |
| 10" Scale | | **3** |
| 1-1/2" Scale | | **4** |
| ***3 : Valve Location*** | | |
| Without Valve | | **A** |
| Outlet Valve, Std. Capacity | | **M** |
| Inlet Valve, Std. Capacity | | **N** |
| Outlet Valve, Low Capacity | | **C** |
| Inlet Valve, Low Capacity | | **D** |
| Outlet Valve, High Capacity | | **E** |
| Inlet Valve, High Capacity | | **F** |
| ***4 : Design Level*** | | |
| Design Level | | **B** |
| ***5 : Tube Size (Diameter)*** | | |
| 1/8" | | **1** |
| 1/4" | (Note: 1) | **2** |
| 1/16" (Only with 1-1/2" and 5" length) (req's low capacity valve) | (Notes: 2, 3) | **3** |
| 5/32" (Only with 1-1/2" length) | (Notes: 4, 1) | **4** |
| ***6 : Materials of Construction (Fittings/O-Rings/Adaptors)*** | | |
| 316SS/Viton/SS | | **B** |
| Kynar/Viton/Kynar (not available with Regulator) | (Note: 5) | **D** |
| 316SS/Buna/SS (not available with Regulator) | | **E** |
| Kynar/Buna/Kynar (not available with Regulator) | (Note: 5) | **G** |
| 316SS/Viton/Kynar | | **H** |
| 316SS/Buna/Kynar (not available with Regulator) | | **J** |
| 316SS/EPR/SS (not available with Regulator) | | **L** |
| 316SS/KALREZ/SS (not available with Regulator) | | **M** |
| Special | | **Z** |
| ***7 : Mounting (Meter & Regulator)*** | | |
| In-Line (Pipe) | | **1** |
| Wall Mount (Regulator only) | | **2** |
| Rear Panel Mount | | **3** |
| Front Panel Mount | | **4** |
| ***8 : Regulator*** | | |
| No Regulator | (Note: 6) | **X** |
| Stainless Steel | (Notes: 7, 8) | **A** |
| ***9 : Alarm Ring Sensor (Must use metallic floats, SS or CA)*** | | |
| Not Required | | **00** |
| Minimum Alarm | (Notes: 9, 10) | **10** |
| Maximum Alarm | (Notes: 9, 10) | **20** |
| Min. and Max. Alarm (5 and 10" Tubes Only) | (Notes: 11, 10) | **30** |
| Modified for Alarms without Sensor or Relay | (Notes: 9, 10) | **90** |
| ***10 : Connection Accessories*** | | |
| Not Required | | **A** |

## 10A61

| | | Code |
|---|---|---|
| ***11 : ABB Logo Tag*** | | |
| ABB LogoTag | | **A** |
| ***12 : Language (Tags & Tube) - English*** | | |
| English | | **E** |
| ***13 : Alarm Relay (Power Requirements)*** | | |
| Not Required | | **X** |
| 110 Vac (Single Alarm) | (Note: 12) | **3** |
| 110 Vac (Dual Alarm) | (Note: 13) | **3** |
| 220 Vac (Single Alarm) | (Note: 12) | **4** |
| 220 Vac (Dual Alarm) | (Note: 13) | **4** |
| ***14 : External Metal Scale (Rear Panel Mount, 5 & 10" Only)*** | | |
| Not Required | | **B** |
| Required | (Notes: 11, 14, 15, 16) | **C** |
| ***15 : Scales*** | | |
| Direct Reading (Standard Water Scales listed in Capacity Tables) | | **A** |
| Direct Reading (Standard Air Scales listed in Capacity Tables) | | **B** |
| Percent Scales | | **C** |
| Millimeter | (Note: 11) | **D** |
| Direct Reading Non-Standard Scales | | **E** |
| ***16 : Float Material Code*** | | |
| Black Glass (BG) | (Note: 14) | **A** |
| Constant Density (CD) | (Notes: 17, 14) | **B** |
| Saphire (SA) | (Note: 14) | **C** |
| Stainless Steel (SS) | | **D** |
| Carboloy (CA) | | **E** |
| Tantalum (TA) | (Note: 14) | **F** |

## 10A61

| Code |
|---|

***17 : Tube Code - Refer to Capactiy Tables I, II, III, IV in 10A6100 Data Sheet***

| | | |
|---|---|---|
| FP-1/16-08-1 1/2 | (Notes: 18, 4, 19, 20) | **01** |
| FP-1/16-30-1 1/2 | (Notes: 4, 19, 20) | **02** |
| FP-1/8-21-1 1/2 | (Notes: 4, 19, 21) | **03** |
| FP-5/32-40-1 1/2 | (Notes: 4, 19, 22) | **04** |
| FP-1/4-28-1 1/2 | (Notes: 23, 4, 19, 24) | **05** |
| FP-1/4-41-1 1/2 | (Notes: 25, 4, 19, 26) | **06** |
| FP-1/8-08-P3 | (Notes: 27, 28, 29) | **07** |
| FP-1/8-20-P3 | (Notes: 27, 28, 29) | **08** |
| FP-1/4-15-P3 | (Notes: 27, 21, 17) | **09** |
| FP-1/4-20-P3 | (Notes: 27, 21, 17) | **10** |
| FP-1/4-41-G3 | (Notes: 30, 27, 28, 17) | **11** |
| FP-1/4-41-P3 | (Notes: 31, 27, 28, 17) | **12** |
| FP-1/16-10-G5 | (Notes: 32, 33, 28, 34) | **13** |
| FP-1/16-12-G5 | (Notes: 32, 33, 28, 34) | **14** |
| FP-1/6-16-G5 | (Notes: 32, 33, 28, 34) | **15** |
| FP-1/16-20-G5 | (Notes: 32, 33, 28, 34) | **16** |
| FP-1/8-08-G5 | (Notes: 33, 28, 29) | **17** |
| FP-1/8-12-G5 | (Notes: 33, 28, 29) | **18** |
| FP-1/8-16-G5 | (Notes: 33, 28, 29) | **19** |
| FP-1/8-20-G5 | (Notes: 33, 28, 29) | **20** |
| FP-1/8-25-G5 | (Notes: 33, 28, 29) | **21** |
| FP-1/4-10-G5 | (Notes: 33, 17) | **22** |
| FP-1/4-16-G5 | (Notes: 33, 17) | **23** |
| FP-1/4-20-G5 | (Notes: 33, 17) | **24** |
| FP-1/4-25-G5 | (Notes: 35, 33, 17) | **25** |
| FP-1/4-40-G6 | (Notes: 30, 33, 17) | **26** |
| FP-1/8-077-G10 | (Notes: 36, 28, 29) | **27** |
| FP-1/8-13.3-G10 | (Notes: 36, 28, 29) | **28** |
| FP-1/8-32-G10 | (Notes: 36, 21, 29) | **29** |
| FP-1/4-10-G10 | (Notes: 36, 28, 17) | **30** |
| FP-1/4-19-G10 | (Notes: 35, 36, 28, 17) | **31** |
| FP-1/4-40-G10 | (Notes: 31, 36, 28, 17) | **32** |

## Additional Ordering Code

***18 : Calibration Includes Certificate of Calibration***

| | |
|---|---|
| Standard; uncalibrated accuracy | **C1** |
| Calibrated Accuracy; Liquids at 1 ctks. Viscosity | **C2** |
| Calibrated Accuracy; Liquids at viscosity up to 100 ctks. | **C3** |
| Calibrated Accuracy; Gas Service | **C6** |

***19 : Preparation Procedure***

| | |
|---|---|
| Oxygen cleaning per ABB 3BUJ980096 | **P1** |

***20 : Certificates***

| | |
|---|---|
| Certificate of Conformance; per order | **D1** |

***21 : Material Certifications***

| | |
|---|---|
| Material Certifications; "typicals", per material | **M1** |

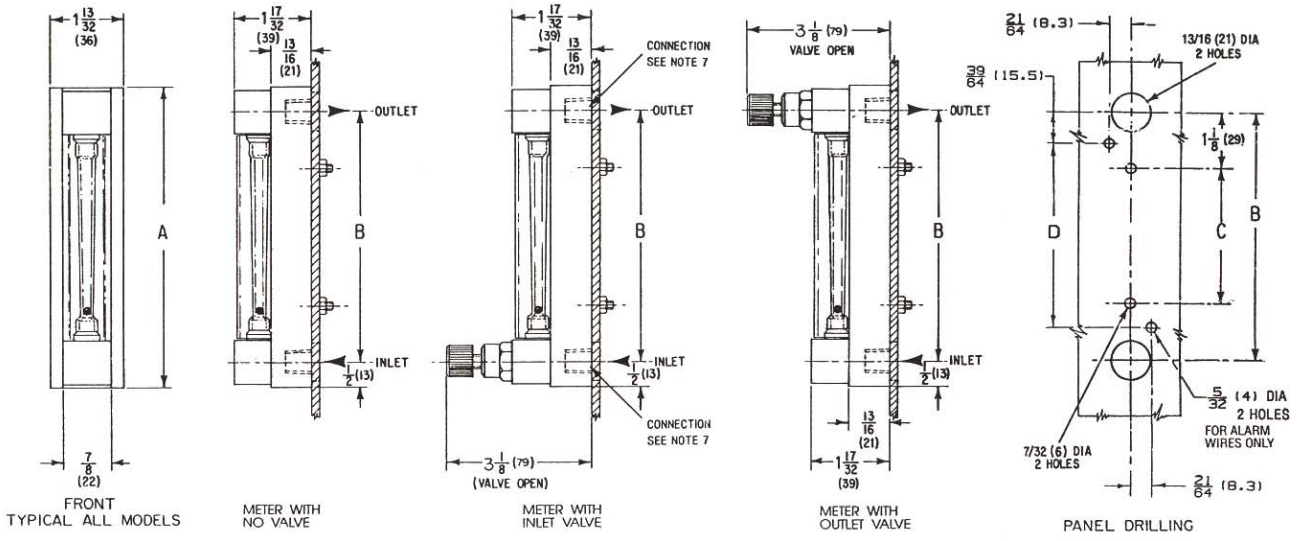
***22 : Pressure Test***

| | |
|---|---|
| Hydrostatic pressure test; 1/8 In. ... 1/2 In. diameter | **H1** |

***23 : Tags***

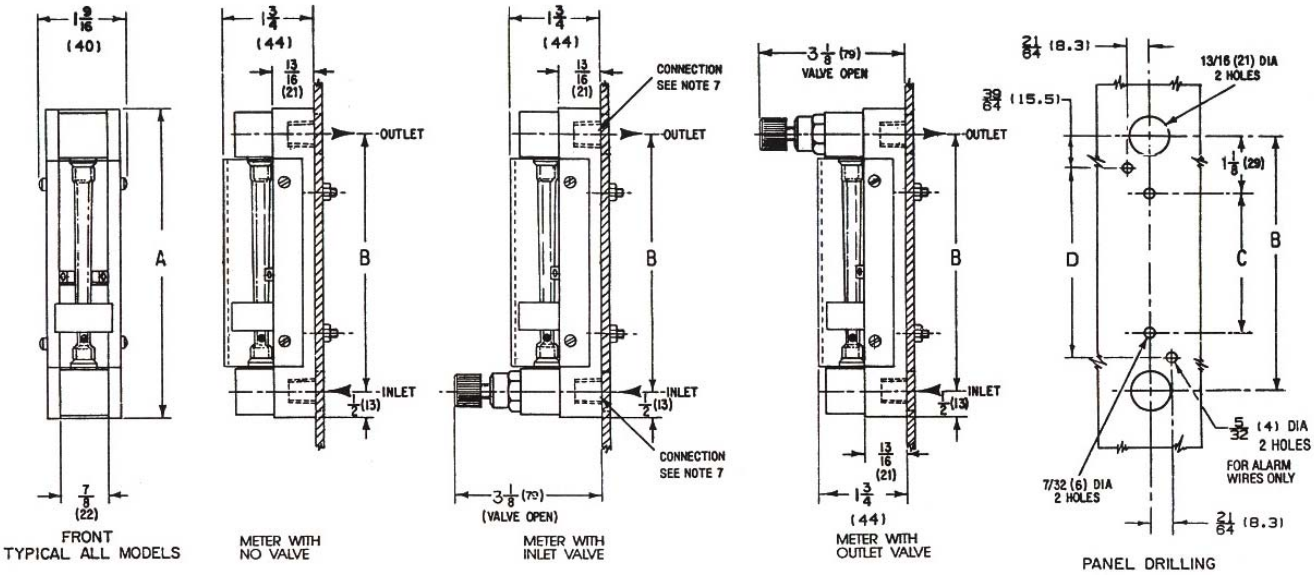
| | |
|---|---|
| Stainless Steel Tags (wired on) per meter | **T1** |

Note 1: Not available with Valve Location code C, D
Note 2: Not available with Valve Location code M, N, E, F
Note 3: Not available with Meter Tube, Scale Length code 1, 3
Note 4: Not available with Meter Tube, Scale Length code 1, 2, 3
Note 5: Not available with Valve Location code C, D, E, F
Note 6: Not available with Mounting (Meter & Regulator) code 2
Note 7: Not available with Materials of Construction (Fittings/O-Rings/Adaptors) code D, E, G, J, L, M
Note 8: Not available with Tube Size (Diameter) code 3
Note 9: Not available with Meter Tube, Scale Length code 4
Note 10: Not available with Tube Size (Diameter) code 3, 4
Note 11: Not available with Meter Tube, Scale Length code 1, 4
Note 12: Not available with Alarm Ring Sensor (Must use metallic floats, SS or CA) code 00, 30, 90
Note 13: Not available with Alarm Ring Sensor (Must use metallic floats, SS or CA) code 00, 10, 20, 90
Note 14: Not available with Alarm Ring Sensor (Must use metallic floats, SS or CA) code 10, 20, 30, 90
Note 15: Not available with Alarm Relay (Power Requirements) code 3, 4
Note 16: Not available with Mounting (Meter & Regulator) code 1, 2, 4
Note 17: Not available with Tube Size (Diameter) code 1, 3, 4
Note 18: Not available with Float Material Code code A, C, D and Regulator code A
Note 19: Not available with Scales code A, B, D
Note 20: Not available with Float Material Code code B, E, F
Note 21: Not available with Float Material Code code B, F
Note 22: Not available with Float Material Code code B, C, E, F
Note 23: Not available with Float Material Code code D and Regulator code A
Note 24: Not available with Float Material Code code A, B, E, F
Note 25: Not available with Float Material Code code D, E and Regulator code A
Note 26: Not available with Float Material Code code A, B, C, F
Note 27: Not available with Meter Tube, Scale Length code 2, 3, 4
Note 28: Not available with Float Material Code code B
Note 29: Not available with Tube Size (Diameter) code 2, 3, 4
Note 30: Not available with Float Material Code code D, E, F and Regulator code A
Note 31: Not available with Float Material Code code C, D, E, F and Regulator code A
Note 32: Not available with Float Material Code code A, C, D, E, F and Regulator code A
Note 33: Not available with Meter Tube, Scale Length code 1, 3, 4
Note 34: Not available with Tube Size (Diameter) code 1, 2, 4
Note 35: Not available with Float Material Code code E, F and Regulator code A
Note 36: Not available with Meter Tube, Scale Length code 1, 2, 4




| NOM Scale Length | | A | | B | | C | | D | |
|---|---|---|---|---|---|---|---|---|---|
| Inch | mm | Inch | mm | Inch | mm | Inch | mm | Inch | mm |
| 1.5 | 38 | 4-3/4 | 121 | 3-23/32 | 94 | 1-15/32 | 37 | --- | --- |
| 3 | 76 | 5-15/16 | 151 | 4-15/16 | 125 | 2-11/16 | 68 | 3-23/32 | 94 |
| 5 | 127 | 10-3/8 | 264 | 9-3/8 | 238 | 7-1/8 | 181 | 8-5/32 | 207 |
| 10 | 254 | 14-13/16 | 376 | 13-13/16 | 351 | 11-9/16 | 294 | 12-19/32 | 320 |

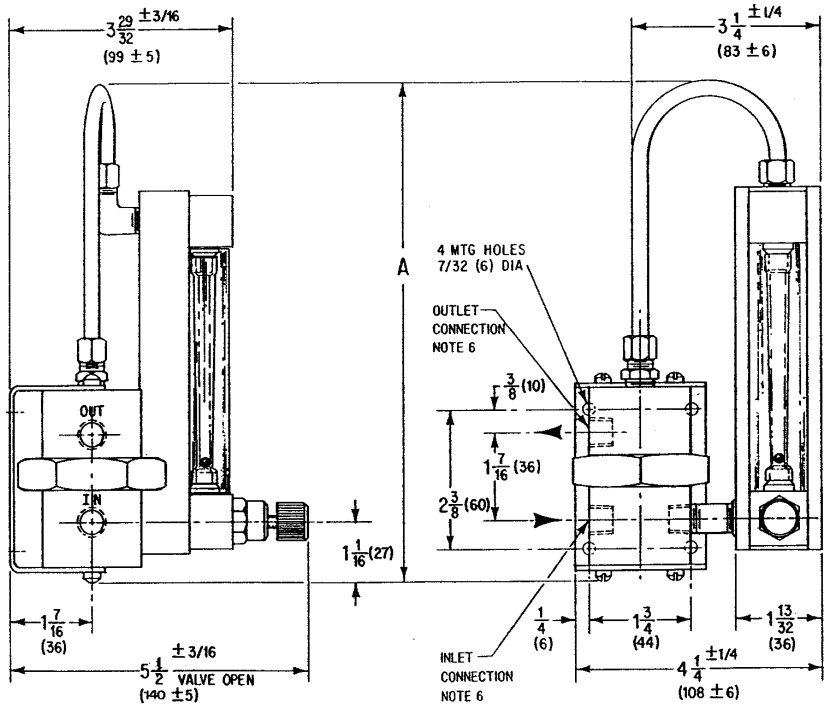
Note:
1. Dimensions are in inches, unless otherwise specified.
2. Dimensions in parentheses ( ) are in millimeters.
3. All dimensions subject to manufacturing tolerance of ± 1/8 inch (3mm) unless otherwise specified.
4. Dimensions guaranteed only if this print is certified.
5. To panel mount meter, white background must be removed togain access to holes in backplate. Use #8 flat head screws.
6. This drawing is third angle projection as shown.
7. Connections are available in 1/4 NPT.




| NOM Scale Length | | A | | B | | C | | D | |
|---|---|---|---|---|---|---|---|---|---|
| Inch | mm | Inch | mm | Inch | mm | Inch | mm | Inch | mm |
| 3 | 76 | 5-15/16 | 151 | 4-15/16 | 125 | 2-11/16 | 68 | 3-23/32 | 94 |
| 5 | 127 | 10-3/8 | 264 | 9-3/8 | 238 | 7-1/8 | 181 | 8-5/32 | 207 |
| 10 | 254 | 14-13/16 | 376 | 13-13/16 | 351 | 11-9/16 | 294 | 12-19/32 | 320 |

Note:
1. Dimensions are in inches, unless otherwise specified.
2. Dimensions in parentheses ( ) are in millimeters.
3. All dimensions subject to manufacturing tolerance of ± 1/8 inch (3mm) unless otherwise specified.
4. Dimensions guaranteed only if this print is certified.
5. To panel mount meter, white background must be removed to gain access to holes in backplate. Use #8 flat head screws.
6. This drawing is third angle projection as shown.
7. Connections are available in 1/4 NPT.

## FIGURE 3
## WALL MOUNT PURGEMASTER WITH REGULATOR

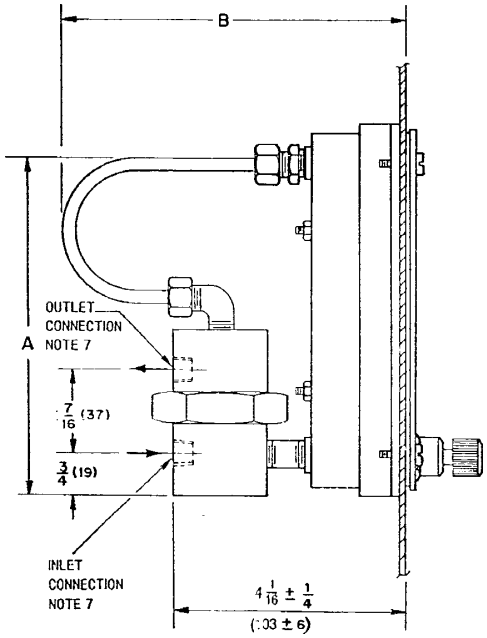



**Dwg. No: OD-10-2713**

| NOM Scale Length | | A | |
|---|---|---|---|
| Inch | mm | Inch | mm |
| 1-1/2 | 38 | 7-1/2 | 190 |
| 3 | 76 | 8-7/8 | 225 |
| 5 | 127 | 13-5/16 | 338 |
| 10 | 254 | 17-3/4 | 451 |

Notes:
1. Dimensons are in inches, unless otherwise specified.
2. Dimensions in parentheses ( ) are in millimeters.
3. All dimensions subject to manufacturing tolerance of ± 1/8 inch (3mm), unless otherwise specified.
4. Dimensions guaranteed only if this print is certified.
5. For outline dimensions of meter, see dwg. no. C-OD-10-2711 & OD-10-2750.
6. Connections are available in 1/4 NPT.

## FIGURE 4
## REAR PANEL MOUNT PURGEMASTER WITH REGULATOR

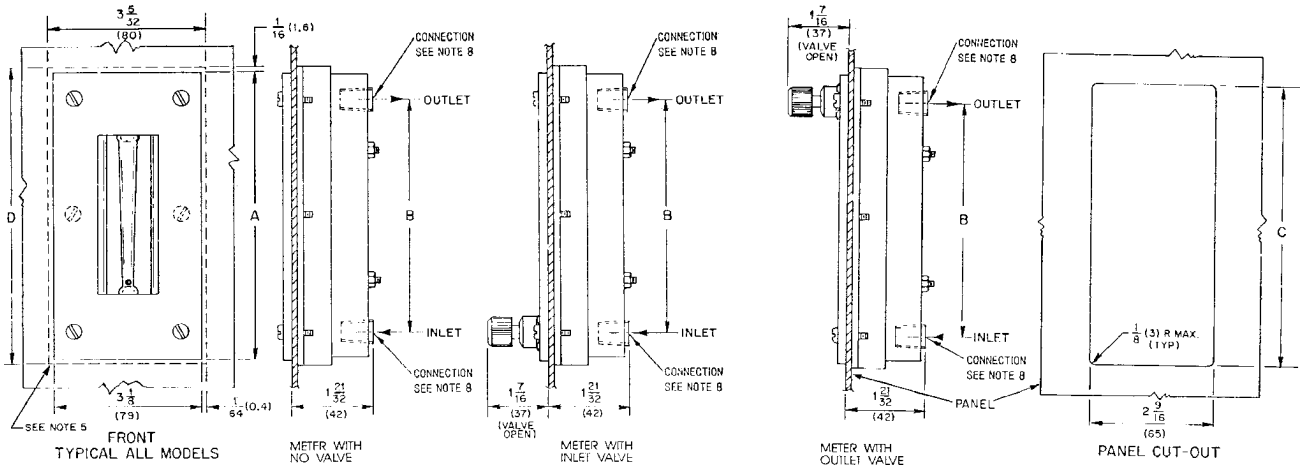



**Dwg. No: OD-10-2716**

| NOM Scale Length | | A | | B | |
|---|---|---|---|---|---|
| Inch | mm | Inch | mm | Inch | mm |
| 1-1/2 | 38 | 5-7/8 | 149 | 5-7/8±1/4 | 149±6 |
| 3 | 76 | 5-7/8 | 149 | 5-7/8±1/4 | 149±6 |
| 5 | 127 | 10-1/4 | 260 | 4-21/32±1/4 | 118±6 |
| 10 | 254 | 14-11/16 | 373 | 4-21/32±1/4 | 188±6 |

Notes:
1. Dimensons are in inches, unless otherwise specified.
2. Dimensions in parentheses ( ) are in millimeters.
3. All dimensions subject to manufacturing tolerance of ± 1/8 inch (3mm), unless otherwise specified.
4. Dimensions guaranteed only if this print is certified.
5. For outline dimensions of meter and panel cut-out, see dwg. no. OD-10-2715.
6. Panel hardware for max 5/16 panel.
7. Connections are available in 1/4 NPT

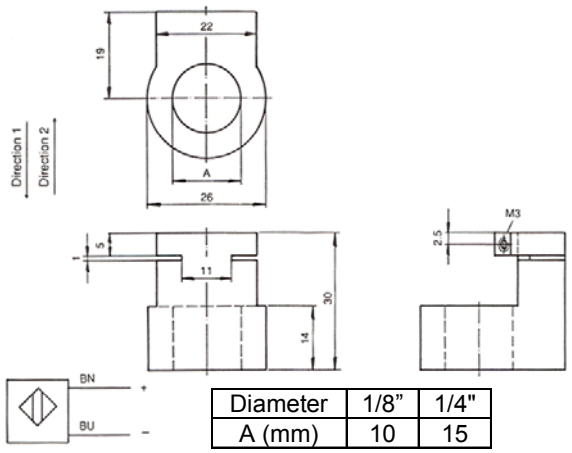
## FIGURE 5
## REAR PANEL MOUNTING OF PURGEMASTER




| Nom Scale Length | | A | | B | | C | | D | |
|---|---|---|---|---|---|---|---|---|---|
| Inch | mm | Inch | mm | Inch | mm | Inch | mm | Inch | mm |
| 1-1/2 | 38 | 4-31/32 | 126 | 3-23/32 | 94 | 4-27/32 | 123 | 5-3/32 | 129 |
| 3 | 76 | 6-3/16 | 157 | 4-15/16 | 125 | 6-1/16 | 154 | 6-5/16 | 160 |
| 5 | 127 | 10-5/8 | 270 | 9-3/8 | 238 | 10-1/2 | 267 | 10-3/4 | 273 |
| 10 | 254 | 15-1/16 | 383 | 13-13/16 | 351 | 14-15/16 | 379 | 15-3/16 | 386 |

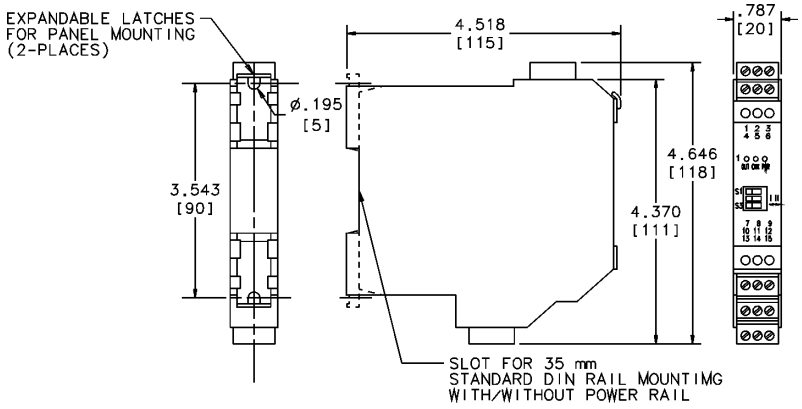
Notes:
1. Dimensons are in inches, unless otherwise specified.
2. Dimensions in parentheses ( ) are in millimeters.
3. All dimensions subject to manufacturing tolerance of ± 1/8 inch (3mm), unless otherwise specified.
4. Dimensions guaranteed only if this print is certified.
5. Dotted line indicates rear of panel clearance requirements.
6. Panel hardware for max 5/16 panel.
7. This drawing is third angle projection as shown.
8. Connections are available in 1/4 NPT.

## FIGURE 6
## ALARM RING SENSOR




| Diameter | 1/8” | 1/4" |
|---|---|---|
| A (mm) | 10 | 15 |

## FIGURE 7
## ALARM, SWITCHING AMPLIFIER



Notes

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