# PURGE METER with Optional Differential Pressure Regulator

SPECIFICATION
10A3130*
File:
Section
10A3

## 10A3130 Series

The F&P 10A3130 Series Purge Meters consist of a borosilicate glass metering tube housed in either a fiber glass or aluminum body. These variable-area meters are designed for use with either liquids or gases. When combined with a 53R2110 differential pressure regulator, the purge meter 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.

Two models are available. The 10A3135 Purge Meter has a reinforced, corrosion-resistant fiber glass body and the 10A3137 model has a high strength aluminum body.

These Purge Meters can be mounted on the front or rear of a panel, or on a wall, or can be mounted in-line.

### DESIGN FEATURES

- "SNAP-IN" TUBE CONSTRUCTION: Minimizes the downtime needed to clean the metering tube or to change the meter range.
- "SNAP-IN" TUBE SHIELD: Provides additional protection against breakage of metering tube.
- HIGHLY READABLE SCALE: Provides wide angle visibility and convenience in reading, even at a distance from the instrument.
- NYLON BALL CHECK VALVE: Prevents back flow and draining of process fluid when metering tube is removed.
- BUILT-IN NEEDLE VALVE: Saves cost of separately installing a needle valve.

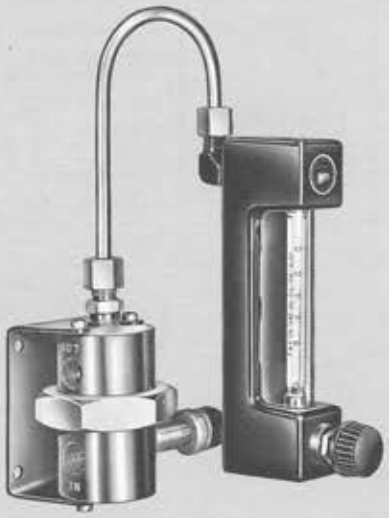


Fig. 1
10A3135N-53R-2110 Series

Fig. 2
Model
10A3137N

Fig. 3
Model
10A3135N

*Supersedes Specification 10A3130, November, 1966 issue. Asterisk in body of specification designates specific revisions.

FISCHER & PORTER
*Complete Process Instrumentation*

## ENGINEERING SPECIFICATIONS

### CAPACITIES

| TUBE | FLOAT | WATER | | AIR at 14.7 psia & 70 F | | Diff'l. Press. across meter only. inches water column | Min. Diff'.l (psi) req'd. for use w/ regulator |
|---|---|---|---|---|---|---|---|
| | | CCM | GPH | SCCM | SCFH | | |
| FP-1/8-08-P-3 | 1/8-inch glass | 4.6[1] | .07 | 380 | .8 | 0.3 | 2.5 |
| | 1/8-inch GSS | 20 | .32 | 900 | 1.9[2] | 0.8 | 2.5 |
| FP-1/8-20-P-3 | 1/8-inch glass | 29 | .46 | 1,600 | 3.4 | 0.8 | 3 |
| | 1/8-inch GSS | 90 | 1.4[1] | 3,200 | 7.[1] | 3.0 | 3 |
| FP-1/4-20-P-3 | 1/4-inch GCD | 200[1] | 3.3 | 10,000[1] | 2.1 | 110 | .5 |
| | 1/4-inch GSS | 580 | 9.2 | 19,000 | 40. | 38 | 10 |
| FP-1/4-41-G-3 | 1/4-inch GSC | 1250[3] | 11.[3] | 40,000[3] | 60.[3] | 175 | |
| | 1/4-inch GEA | 1800[3] | 25.[3] | 56,000[3] | 100[3] | 350 | |

1. These capacities are available with direct reading scales, at no additional cost.
2. This capacity also available from stock calibrated for 2.5 SCFH air at 10 psig.
3. These capacities are not available with flow regulator.

### PERFORMANCE

Accuracy: ± 10% maximum flow

Rangeability: 10 to 1 or greater

### OPERATIONAL LIMITS

Maximum Temperature: 250 F with Buna N o-rings; 400 F with Viton o-rings.

Maximum Pressure: Meter only, 250 psig at maximum temperature for liquid or gas service. Meter with pressure regulator, 200 psig at maximum temperature.

Pressure Regulator Differential: 100 psi maximum.

### MATERIALS OF CONSTRUCTION

Purge Meter

Tube: Borosilicate glass

*Floats: Glass, stainless steel, or carboloy[1]

Fittings: Brass or stainless steel

Valve: Type 17-4-PH stainless steel with Teflon packing.

Check Valve: Nylon Ball

Body: Fiber glass or aluminum

O-rings: Buna N when brass fittings are specified; Viton when stainless fittings are specified.

1. General Electric Company

Differential Pressure Regulator

Body: Stainless steel or brass

Diaphragm: Viton (with stainless body); Buna N (with brass body).

Needle Valve: Type 17-4-PH stainless steel

Springs: Type 17-4-PH stainless steel

Connecting Tubing: Nylon (stainless steel and copper are optional).

### CONNECTIONS

1/4-inch NPT female inlet and outlet fittings are horizontal and face back.

### MOUNTING

For mounting on pipeline, panel, or wall.

### SCALES

Standard: Percentage, for all capacities.

Optional: See capacity table for available standard direct reading scales.

Optional direct reading - other than above.

### WEIGHT

Approximately one pound

## ACCESSORIES

Bezel for panel mounting

## STANDARD MODELS

**Purge Meter**

| BODY TYPE | | DESCRIPTION |
|---|---|---|
| Fiber Glass | Aluminum | |
| 10A3135A | 10A3137A | No needle valve but has check valve in outlet. |
| 10A3135N | 10A3137N | Needle valve in inlet; check valve in outlet. |
| 10A3135M | 10A3137M | Needle valve in outlet, no check valve |

**Purge Meter with Differential Pressure Regulator**

| Meter Body of Fiber Glass | Meter Body of Aluminum | DESCRIPTION |
|---|---|---|
| 10A3135_[4]-53RB2110 | 10A3137_[4]-53RB2110 | Standard purge meter with brass differential pressure regulator |
| 10A3135_[4]-53RT2110 | 10A3137_[4]-53RT2110 | Standard purge meter with stainless steel differential pressure regulator |

4. Insert letter N or M as selected from table above that describes standard model purge meters.

## ORDERING INFORMATION

When ordering, please specify:

- Complete model number
- Materials of construction (body & fittings, regulator body & connecting tubing when required)
- Capacity
- Mounting
- Scale
- Accessories
- Operating conditions such as:
  - Fluid measured
  - Operating and maximum temperature
  - Operating and pressure

## TYPICAL SPECIFICATIONS

The purge meter shall have (fiber glass) (aluminum) body, (brass) (stainless steel) end fittings and (Buna-N) (Viton) O-rings.

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 2-1/2 inches with (per cent) (direct reading) scale etched directly on it.

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

*When Integral Needle Valve is Required, Add:*

An integral stainless steel needle valve shall be provided in the (inlet) (outlet) fittings.

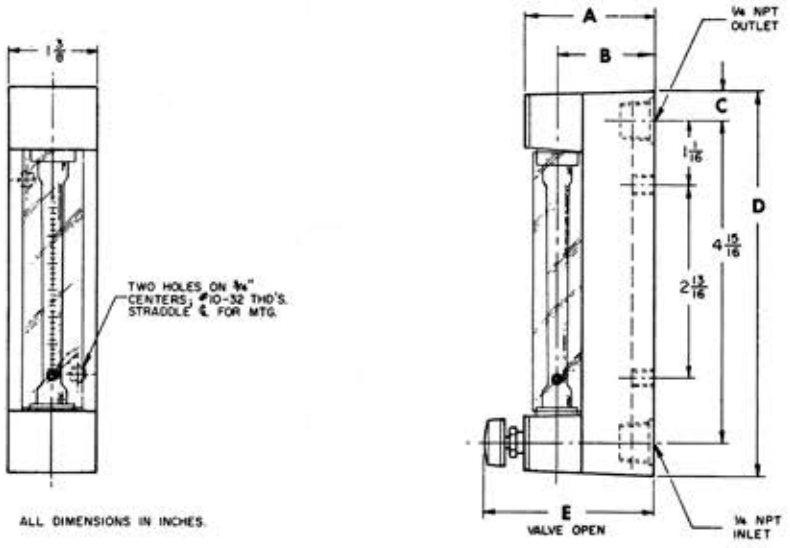
*When Constant Differential Pressure Regulator is Required, Add:*

A (brass) (stainless steel) constant differential pressure regulator shall be provided to maintain a constant flow rate with varying line pressures.

Regulator shall be piped to purge meter with (nylon) (brass) (stainless steel) tubing.

5. Always required with pressure regulator

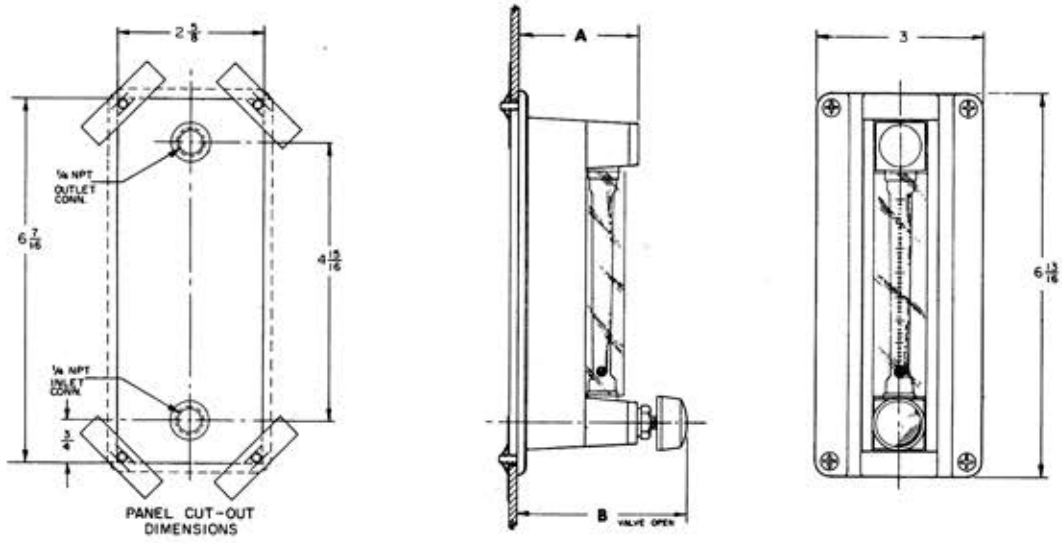
## OUTLINE DIMENSIONS




| Model No. | Material | DIMENSIONS | | | | |
|---|---|---|---|---|---|---|
| | | A | B | C | D | E |
| 10A3135 | Fiber Glass | 1-27/32 | 1-7/32 | 11/16 | 6-5/16 | 3 |
| 10A3137 | Aluminum | 2 | 1-1/4 | 15/32 | 5-7/8 | 3-1/8 |

Dimensions shown as numerals on drawings are common to both models.

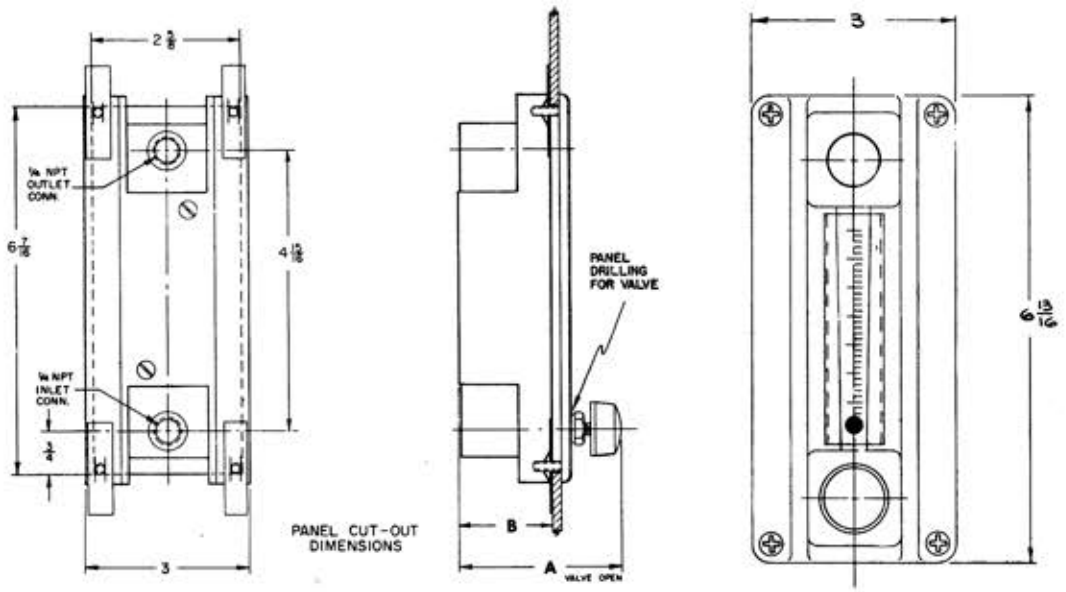
Fig. 4. Front Panel Mounted Purge Meter




| Model No. | Material | DIMENSIONS | | |
|---|---|---|---|---|
| | | A | B | |
| 10A3135 | Fiber Glass | 1-31/32 | 3-1/8 | Other dimensions common |
| 10A3137 | Aluminum | 2-1/8 | 3-1/4 | |

Fig. 5. 10A3130 Series Purge Meters

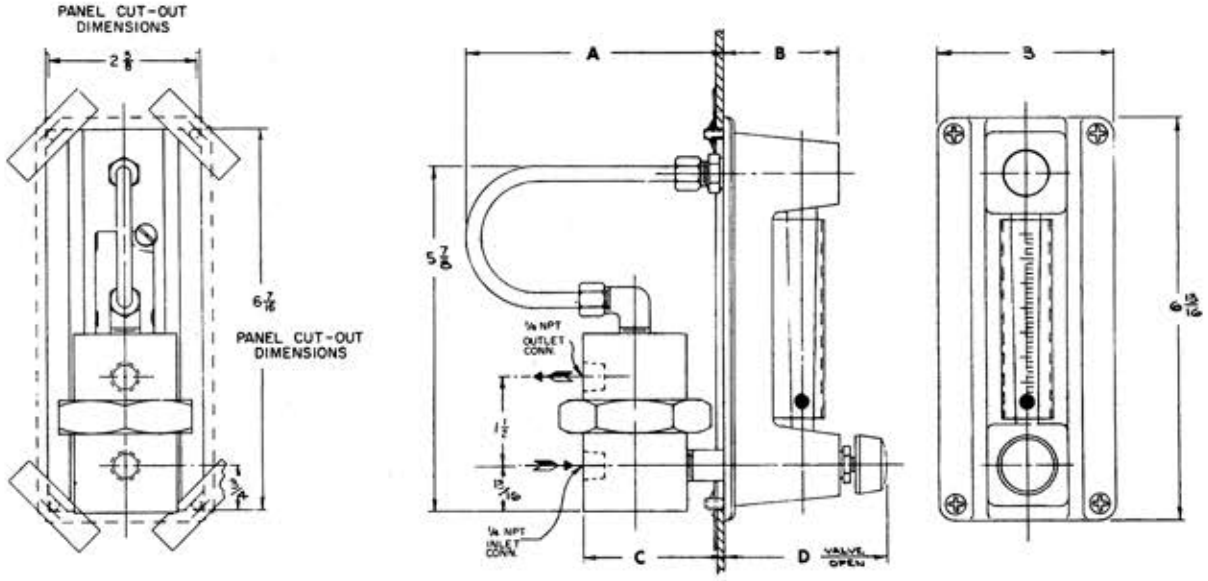
## OUTLINE DIMENSIONS (cont'd.)




| Model No. | Material | DIMENSIONS | | |
|---|---|---|---|---|
| | | A | B | |
| 10A3135 | Fiber Glass | 3 | 1-25/32 | Other dimensions common |
| 10A3137 | Aluminum | 3-1/8 | 1-13/16 | |

ALL DIMENSIONS IN INCHES.

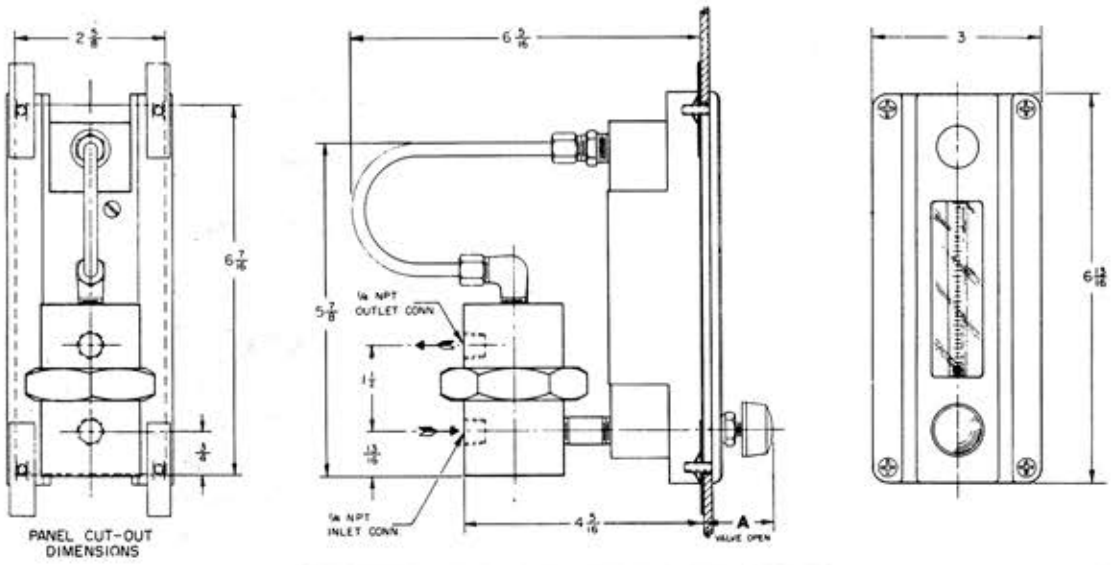
Fig. 6. Rear (Flush) Panel Mounted Purge Meter




| Model No. | Material | DIMENSIONS | | | | |
|---|---|---|---|---|---|---|
| | | A | B | C | D | |
| 10A3135_-53R_2110 | Fiber Glass | 4-3/8 | 2 | 2-3/8 | 3-1/8 | Other dimensions common |
| 10A3137_-53R_2110 | Aluminum | 4-1/4 | 2-1/8 | 2-1/4 | 3-1/4 | |

Fig. 7. For Front Surface Panel Mounted Purge Meter with Differential Pressure Regulator

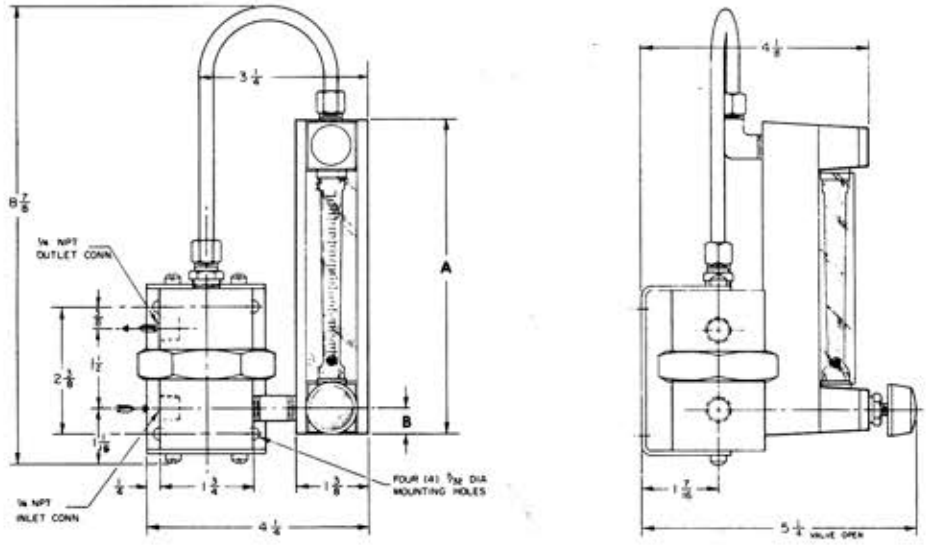
## OUTLINE DIMENSIONS (cont'd.)




ALL DIMENSIONS IN INCHES.

| Model Number | Material | Dimensions | |
|---|---|---|---|
| | | A | |
| 10A3135_53R_2110 | Fiber Glass | 1-7 32 | All other dimensions common |
| 10A3137_53R_2110 | Aluminum | 1-7 16 | |

Fig. 8. For Rear Panel Mounted Purge Meter with Differential Pressure Regulator




| Model Number | Material | Dimensions | | |
|---|---|---|---|---|
| | | A | B | |
| 10A3135_53R_2110 | Fiber Glass | 6-5 16 | 11 16 | All other dimensions common |
| 10A3137_53R_2110 | Aluminum | 5-7 8 | 15 32 | |

Fig. 9. 3130 Series Purge Meters with Differential Pressure Regulator

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