

VAREC BIOGAS 217 Series WELL-TYPE MANOMETER

The 217 Series Well-Type Manometer is a direct reading, single-tube type pressure gauge.

Introduction

The Varec Biogas 217 Series Well-Type Manometer is a direct reading, single-tube type pressure gauge, which provides both long-term reliability and high precision for accurate pressure measurement. This is extremely important in a low-pressure waste gas system because it is an indication of digester efficiency. If a U-Tube type Manometer is required, refer to Varec Biogas 219 Series.

The 217 Series Manometer should be installed in waste gas piping wherever local pressure, vacuum, or differential pressure measurement is required. Recommended locations are:

- Gas lines leading from digesters and low pressure gas holders
- Gas lines leading to boilers, engines, and other plant utilities
- Upstream of the pressure regulator installed immediately upstream of the waste gas burner

Construction

The manometer case is constructed of extracted aluminum and tight-fitting, polished plate glass window to protect the scale and tube against dust and dirt. The case has epoxy paint finish for protection against corrosion. The heavy-wall, annealed glass indicating tube is gland-packed to prevent leakage and to facilitate tube removal.

Operation

When measuring the pressure above atmosphere (gauge pressure), the waste gas pressure forces the fluid in the manometer's indicating column to rise.

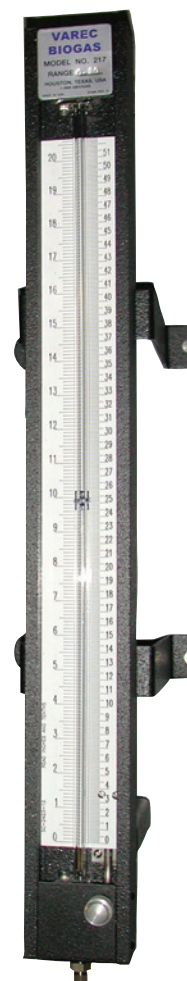
The pressure measurement is read by observing the fluid level against the scale graduations. Vacuum or differential pressure readings are achieved by noting the difference between low and high-pressure fluid levels against the scale graduations.

A duplex scale is graduated both in English units, inches and tenths WC and metric units, millimeters and centimeters. Red Unity Oil or Green Concentrate fluid with specific gravity of 1.0 will be specified.

The 217 Series Manometer allows external scale adjustment which simplifies calibration. The manometer is fitted with brackets and is suitable for indoor or outdoor wall/panel mounting. Labels are available at no additional charge when specified with order.

Design Features

- Maximum flow with minimum pressure drop
- Removable / Replaceable seat rings
- Heavy wall cast housing in 356 T6 low copper aluminum
- Flanged or threaded connections



Specifications

Size

12", 20", 30"

Pressure Rating

250 PSIG

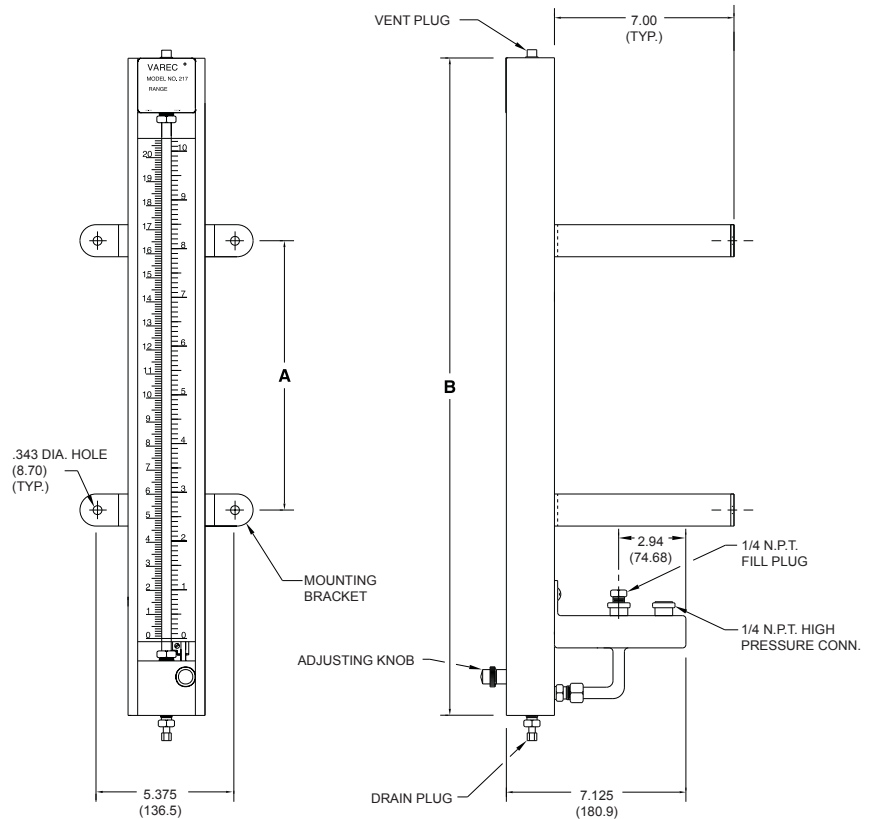
Consult Factory for higher pressure ratings.

Indicating Fluid

- Red Unity Oil - specific gravity 1.0, temperature range 30° to 100° F (-1° to +38° C)
- Green Concentrate - specific gravity 1.0, temperature range 30° to 100° F (-1° to +38° C)
- For optional temperature range or characteristics, consult factory. Each manometer requires 4 oz. indicating fluid to fill.

Dimensions, inches [mm]

| Size | Varec Part No. | A | B |
|------|----------------|-------|-------|
| 12" | 217121 | 5.50 | 18.75 |
| | 217122 | [140] | [476] |
| 20" | 217201 | 10.50 | 26.75 |
| | 217202 | [267] | [679] |
| 30" | 217301 | 20.50 | 36.75 |
| | 217302 | [521] | [933] |



Accessories

The following items must be ordered separately:

MOUNTING PANEL, MODEL 213

Available for installing two or more manometers side by side for centralization of pressure data. Panels are lightweight steel, and is also available in stainless steel. Specify the manometer size and quantity to be mounted. Manometer panel must be specified and ordered separately.

VENTING PETCOCK

Must be specified for installation at the inlet of each manometer to permit routine maintenance calibration. When closed, the petcock bleeds gas from the manometer well to atmosphere, allowing the manometer "zero" position to be checked.

RETURN WELL

These are stainless steel and used in differential pressure applications to protect from severe reverse pressure conditions.

FLOAT CHECK VALVE

A check valve should be installed on the atmospheric side and/or pressure side of each manometer to protect the fluid from exploding due to pressure increases beyond the manometer range. The valve closes as pressure surges beyond the manometer range, and opens when normal pressure is restored.

Ordering Information

| Model | Description | | | | |
|-------|---------------------|--------------------------|--|-----|-----------|
| 217 | Well-Type Manometer | | | | |
| | Code | Size (Select One) | | | |
| | 12 | 12" WC (300mm) | | | |
| | 20 | 20" WC (500mm) | | | |
| | 30 | 30" WC (760mm) | | | |
| | | Code | Scale Type (Select One) | | |
| | | 1 | English Unit (inches and tenths WC) | | |
| | | 2 | Metric Unit (millimeter and centimeters WC) | | |
| | | Code | Indicating Fluid (Must Specify One) | | |
| | | 1 | 100 Red Unity Oil, 4oz. Bottle, Sp. Gr. 1.0 (1 Bottle Required per Manometer) | | |
| | | 2 | 1000 Green Concentrate, 3oz. Bottle, Sp. Gr. 1.0 (1 Bottle Required per Manometer) | | |
| | | Code | Accessories (Optional - May Specify More Than One) | | |
| | | A | Vented Petcock | | |
| | | B | Return Well | | |
| | | C | Float Check Valve | | |
| 217 | 12 | 1 | 1 | ABC | (Example) |

Example: 217 Series Well-type Manometer, 12" WC range, English Unit scale reading, Red Unity Oil indicating fluid with a Vented Petcock, Return Well and Float Check Valve.

MANOMETER MOUNTING PANEL - Must Be Ordered Separately

Ordering Information

| Model | Description | | |
|-------|--|------------------|---|
| 213 | Manometer Mounting Panel - suitable for field mounting | | |
| | Code | No. Units | Size |
| | 1 | 2 | 12" |
| | 2 | 2 | 20" |
| | 3 | 2 | 30" |
| | 4 | 3 | 12" |
| | 5 | 3 | 20" |
| | 6 | 3 | 30" |
| | 7 | 4 | 12" |
| | 8 | 4 | 20" |
| | 9 | 4 | 30" |
| | | Code | Panel Construction |
| | | * | Leave blank when ordering Standard Steel Construction |
| | | S | Stainless Steel Construction |
| 213 | 1 | S | (Example) |

Example: Manometer Mounting Panel suitable for two 12" Units in Stainless Steel Construction.