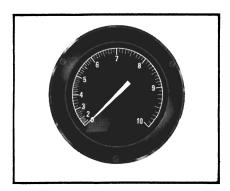
Hyspan WENTHEL

FLOW MEASUREMENT SYSTEM / METER SELECTION

METER READING STYLES



gpm (direct reading)

The gpm meter permits the direct reading of flow through the venturi in gallons per minute. The gpm meter is selected for one specific venturi size and beta ratio. It can only be used with the venturi for which it was selected. Gallons per minute meters are available in a variety of standard scales to cover the full range of flows in venturis up to 30-inch size.

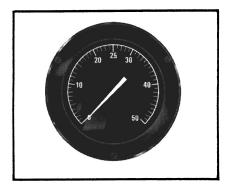
Since the gpm indicator is designed for use with a specific venturi, you must specify the size and beta ratio of the venturi and the design gpm flow. From this information the correct gpm meter can be selected.

The following method is used to select the proper gpm meter scale from the above information:

 Divide the design flow by .7 giving you the recommended maximum scale reading. (design gpm)

.7

- Round off the resulting figure to the nearest standard scale available. This rounded maximum gpm must correspond within 30 inches of differential pressure, or more, on the capacity curve for the specific venturi being used.
- 3) Determine the differential pressure in inches of water at the maximum reading of the standard scale selected using the proper capacity curve. Listing the gpm value at full scale and the corresponding ΔP, provides a proper description of the gpm meter selected.
- 4) Consult factory for part number.



Linear △P: inches H₂O

The linear differential pressure meter is used to measure the differential pressure in inches of water between the upstream and throat pressure taps. The linear meter can be used on a venturi of any size, or beta ratio, within the range of the meter. The flow is determined by converting differential pressure to gpm, as shown on the proper capacity curve for the size and beta ratio of the venturi.

The scale of a linear meter should, if possible, be selected with the smallest range available on which flow through all venturis involved can be read in the mid-range of the scale. It is recommended that readings be taken between the 20% and 100% range of the meter. If, for example, you select a meter with a maximum reading of 50" water, the venturis involved should have beta ratios which will indicate a reading of aproximately (10" to 50" water) range at design flow condition. Range selection in this manner will assure accurate reliable measurement.

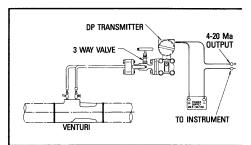
Standard scales available 0-50", 0-100", 0-300" maximum. Consult factory for other available scales.

METER RANGE SELECTION

It is important that the venturi and meter be properly matched for optimum utilization. The ideal venturimeter relationship is one in which most differential pressure readings appear in the mid to upper range of the scale. Venturi selection and sizing is discussed on page 6.

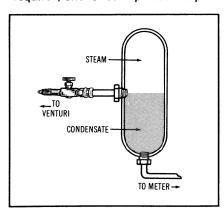
Other Meters

- Percentage Scale Meter—This meter measures the percentage of a stipulated flow for a specific venturi size and beta ratio. Scale is usually divided from 0-10 or 0 to 100%. Consult factory for proper sizing.
- Metric, Direct Reading, or Linear Reading Meters—Consult factory for proper meter sizing.
- 3) Gas Flow Meter— P, linear meters are recommended for gas service readings. Each gas flow reading requires temperature and pressure corrections. SCFM or CFM scales are recommended for special applications only. Consult factory for meter sizing.
- 4) Electronic Transmitter— P electronic transmitters, such as Foxboro #843, are available for integrated energy management systems. Consult factory.



ADAPTER (steam flow)

When measuring steam flow, a special adapter is required to properly determine the differential pressure across the venturi pressure taps. This adapter, called a seal pot, is mounted on each pressure tap, as illustrated. Steam condensate in the meter provides a reliable measurement of pressure differential. Maximum ratings are 500 psi and +470°F. Two units per venturi are required; one for each pressure tap.

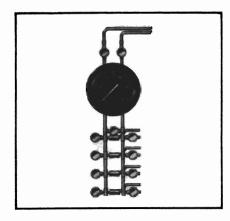


MOUNTING STYLES



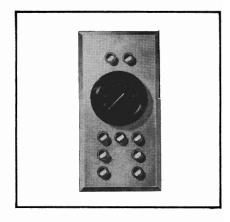
Portable Master Meter

This master meter is a high precision instrument for measuring pressure differential. Only one meter is usually required for measuring a number of stations in the same building, or complex. Weighing only 12 pounds, the meter is carried from station to station in a durable case. A complete operating manual fits into the cover. The meter itself is rugged and accurate, giving dependable precision readings. The standard dial has a range of 0 to 50 inches of water. Other dial ranges, such as 0-100", or direct reading gpm dials are available. Self-contained, the meter is supplied with two quick disconnect fittings and ten feet of hose for the upstream and throat connections. Shutoff valves for bleeding, balancing and shutoff are also included. The standard meter is suitable for +250°F, water at 250 psig. Special units for higher temperatures, pressures and other media are available.



Wall-Mounted

The wall-mounted meter is designed for fixed installation as shown in the illustration above. The meter is supplied with mounting brackets, appropriate valves, connectors and assembly piping. Various piping arrangements are available to adapt this meter configuration for single, or multiple station measurement. Specify number of stations to be measured.



Panel-Mounted

The panel-mounted meter is designed for fixed mounting in an instrument panel as shown in the illustration above. The valves for bleedoff and shutoff are normally furnished facing forward through a specified pattern to fit customer-furnished panel. Also available for mounting with valves facing backward for operation from rear. Various piping arrangements are available to adapt this meter configuration for single, or multiple station measurement. Specify number of stations to be measured.

Consult Operating and Installation Manual for meter usage and installation instructions.

RATINGS

Fitting Kits

1) Standard Fitting Kit (500 psig, +250°F.): P/N 30-10103-32-32

Nipples, brass: 2600 psig at +250°F.

Valve, brass: 500 psig at +250°F.

Quick connect coupling (male): 1000

psig at +250°F.

2) High Temperature Fitting Kit (500 psig, +400°F.): P/N 30-10468-32-32

Nipples, stainless steel: 4500 psig at +400°F.

Valve, stainless steel (seals): 500 psig at +400°F.

Quick connect coupling (male): up to 1600 psig at +400°F.

High Pressure Fitting Kit: available to 1500 psig. Consult factory.

Meter Fittings

High Pressure: (500 psig, +250°F.

Meter body: 500 psig at +250°F.

Meter valves: 2500 psig at +250°F.

Meter Hose (portable meter only—Teflon hose with brass fittings): 500 psig at +250°F.

Quick connect coupling (female): 1000 psig at +250°F.

Standard Pressure: (250 psig, +250°F.)

Meter body: 500 psig at +250°F.

Meter valves: 250 psig at +250°F.

Meter hose (portable meter only—rubber braided hose with brass fittings): 250 psig at +250°F.

Quick connect coupling (female): 1000 psig at +250°F.

Higher Pressure (1500 psig): Consult factory for proper parts.