



### 1120 Series Indicators

Indicator models 1123, 1124 and 1126 have 3", 4½" and 6" dials respectively. A variety of scales for differential pressure, flow and level can be supplied. The 1120 Series is widely used in industrial process plants, power plants, pollution control facilities and in the cryogenic gas industry.



### 1220 Series Indicating Switches

The Series 1220 Differential Pressure Indicating Switches are used for on-off control or alarm. They also indicate flow, liquid level or other process variables. These units are furnished with one or two SPDT type switches with actuation set points easily adjustable over most of the range of the instrument. The calibrated travel of the pointer is 270° which gives good differential pressure indication and switch resolution. Dials can be supplied with linear scales for differential pressure, square root scales for flow, or custom scales for level. The Series 1220 Switches are used extensively in power plants, compressor stations and cryogenic applications.



### 1226X Explosion-Proof Switch

Meriam's 1226X Explosion-Proof Indicating Switch is CSA and U.L. listed, meeting N.E.C. requirements for Class I, Division I, Group D hazardous environments. Class I, Group D atmospheres include gasoline, hexane, naphtha, benzene, butane, propane, alcohol, acetone, benzol, lacquer, solvent vapors, and natural gas.

The explosion-proof housing is made from a strong, light-weight aluminum alloy that is both non-rusting and non-sparking. A large glass window provides full viewing of the 6" indicator. Front of board, panel or pipe mounting can be supplied.



### 1126P-2 Portable Indicator

The 1126P-2 is designed for portable applications. Typical examples are periodic measurements of the pressure drop across filters, balancing of flow rates in heating and cooling systems and checking of back flow prevention devices. Meriam's 1126P-2 consists of an 1126 D/P Indicator with 3-valve manifold and piping, 2 hoses and quick disconnects. Each instrument system is assembled as a complete package with all the accessories mounted in a rugged, light weight case. When used as a flow measuring device, the instrument normally comes with a 0-100% square root scale. With all flow elements designed for the same differential, multiplying the scale reading by the primary element's full flow design value gives readings directly in flow units. Scales in flow units, inches of H<sub>2</sub>O, PSI and metric units are also available.



# Bellows Gauges for Differential Pressure, Flow and Level

The Meriam Model 1120 Differential Pressure Unit is a proven and reliable sensing element used in all Meriam Bellows Gauges. It is available in ranges as low as 0-30" w.c. or as high as 0-500 PSI. The light weight and compact differential pressure unit incorporates a rupture-proof and leak-proof bellows plus other features that ensure ruggedness and reliability. This basic unit is suitable for activating indicators, recorders, transmitters, switches, and controllers and is available as a separate assembly for that purpose.

The 1120 consists of a high and a low pressure bellows connected to each side of a center plate. The bellows are enclosed in end housings which in turn are bolted to the center plate. The interior of the bellows and center plate is completely filled with a clean, low freezing point, non-corrosive fill fluid. As differential pressure is applied, this fill fluid moves between the bellows through a field adjustable dampening valve in the center plate. Other external dampening devices are not required for measurements of pulsating differential pressure. Also, the Meriam 1120 incorporates a special design which completely isolates the process fluid from the center plate.

When differential pressure is applied to the high and low pressure connections, the high pressure bellows contracts, forcing fluid through the center plate into the low pressure bellows which expands. The resulting linear motion of the low pressure bellows is converted to a 6° rotary motion of the output shaft through temperature compensating linkage. Over-range protection up to the pressure rating of the housing is provided by two fluid shut off valves located on this linkage. The output shaft is part of a low friction, "O" ring sealed shaft and bearing assembly which carries the rotary motion to the external area of the bellows unit and into the instrument case.

# Bellows Gauges

## for Differential Pressure, Flow and Level

### Features

#### 1020 & 1120 Accuracy

|                                      |          |
|--------------------------------------|----------|
| 30" w.c. range                       | 1.50% FS |
| 50" w.c. thru 500 PSID range         | 0.75% FS |
| Option: 100" w.c. thru 50 PSID range | 0.50% FS |

#### 1220 Accuracy

|                            |          |
|----------------------------|----------|
| Before switch activation   | 0.75% FS |
| At switch activation point | 2.00% FS |
| After switch activation    | 1.50% FS |

#### Zero Elevation

100% of range (150 PSID maximum)

#### Suppression

15% of range with 270° pointer travel

#### Operating Temperature

-60°F to +200°F

#### Full Scale Displacement

|                               |             |
|-------------------------------|-------------|
| 30" w.c. thru 130" w.c. range | .19 Cu. In. |
| 135" w.c. thru 60 PSID range  | .12 Cu. In. |
| 75 PSID thru 500 PSID range   | .06 Cu. In. |

#### 1220 Switch Type

Snap action SPDT

#### 1220 Switch Setting Accuracy

1.00% FS

#### 1220 Dead Band

|                    |        |
|--------------------|--------|
| 1 switch (nominal) | 7% FS  |
| 2 switch (nominal) | 10% FS |

#### 1220 Switch Setting

Increasing -10 to 100% of differential or 10" of water whichever is greater

Decreasing - 5% or 5" of water whichever is greater  
Between set points -15% of FS minimum

#### 1220 Switch Rating

5 amps at 125V or 250V AC  
3 amps inductive or 5 amps resistive at 30VDC

#### Mounting Dimensions

|               |                              |
|---------------|------------------------------|
| Model 1020    | Request File No. 1020:420    |
| Model 1123    | Request File No. 1123:420    |
| Model 1124    | Request File No. 1124:420    |
| Model 1126    | Request File No. 1126:420    |
| Model 1224    | Request File No. 1224:420    |
| Model 1226    | Request File No. 1226:420    |
| Model 1226X-1 | Request File No. 1226X-1:420 |
| Model 1226X-2 | Request File No. 1226X-2:420 |

### Ordering Information

To order any one of Meriam's Bellows Gauges, custom-made to your specifications, please contact your Meriam sales representatives with the following information:

- Model Number
- Housing Material
- Safe Working Pressure
- Bellows Material
- Differential Range
- Type of Scale (Linear or Sq. Rt.)
- Type of Mounting

| Specifications             |   |                                |      |                                |  |      |                            |         |
|----------------------------|---|--------------------------------|------|--------------------------------|--|------|----------------------------|---------|
| Model                      | 1020  | 1123                           | 1124 | 1126                           | 1224   | 1226 | 1226X                      | 1126P-2 |
| Dial Size                  | No Dial   | 3"                             | 4½"  | 6"                             | 4½"  | 6"   | 6"                         | 6"      |
| Housing                    | <b>End Housing</b>  | <b>Center Plate</b>            |      | <b>Static Working Pressure</b> |  |      | <b>Process Connections</b> |         |
|                            | Brass   | Brass                          |      | 500 or 1000 PSI                |  |      | ¼" NPT                     |         |
|                            | 316 SS  | 316 SS or Brass (500 SWP Only) |      | 1500, 3000 or 6000PSI          |  |      | ¼" & ½" NPT                |         |
|                            | Monel   | 316 SS                         |      | 1500, 3000 or 6000PSI          |  |      | ¼" & ½" NPT                |         |
| Bellows                    | Beryllium Copper (30" w.c. Minimum—60 PSID Maximum)           |                                |      |                                |  |      |                            |         |
|                            | 316 Stainless Steel (50" w.c. Minimum—500 PSID Maximum)       |                                |      |                                |  |      |                            |         |
|                            | Monel (50" w.c. Minimum—60 PSID Maximum)                      |                                |      |                                |  |      |                            |         |
| Mounting<br>(Except 1126P) | Flush Panel using indicator case for mounting                 |                                |      |                                |  |      |                            |         |
|                            | Wall or ¾" NPT using universal mounting bracket               |                                |      |                                |  |      |                            |         |
|                            | Pipe Saddle or Wall using "H" mounting Bracket and 2" U-Bolts |                                |      |                                |  |      |                            |         |
| Features                   | Special scales and ranges available                           |                                |      |                                | Optional bellows fill fluid                        |      |                            |         |
|                            | Simple zero, span and linearity adjustment                    |                                |      |                                | Additional relay options available for 1220 Series |      |                            |         |
|                            | Temperature compensation for varying ambients                 |                                |      |                                | 270" pointer travel; red set pointer               |      |                            |         |
|                            | Break-resistant acrylic viewing window                        |                                |      |                                | Valves and Piping                                  |      |                            |         |
|                            | NEMA 4, Die-cast aluminum case with gasketed cover            |                                |      |                                | Special cleaning for oxygen service                |      |                            |         |
|                            | Low friction "O" ring sealed shaft output                     |                                |      |                                | Option for meeting NACE MR-01-75 requirements      |      |                            |         |
|                            | Optional anti-parallax mirror dial                            |                                |      |                                | Terminal Strip                                     |      |                            |         |
|                            | CE approval for 1120 and 1220 Series (option)                 |                                |      |                                | Built-in pulsation dampening (field adjustable)    |      |                            |         |
|                            | CSA approved 1226 Models                                      |                                |      |                                |  |      |                            |         |