Differential Pressure Gauges
Magnetic-Piston Sensing Element
Type 700.04

Applications

- For use in measurement applications requiring high differential / static process pressures.
- Suitable for measuring pressure drops across filters, strainers, separators, etc.

Special features

- Magnetic piston sensing element
- Rugged thermoplastic case
- Field liquid fillable
- 6000 PSID maximum working pressure
- Differential pressure ranges to 100 PSID

Description

Nominal Sizes
2½” & 4½” (63.5 & 114.3 mm)

Accuracy
± 2% of span (on increasing pressure)

Scale Ranges
0/2 PSID through 0/100 PSID
(0/138 mbard through 0/7 bard)

Maximum Safe Working Pressure
6000 PSIG (400 barg)

Operating Temperature
Ambient: -40°F to 200°F (-40°C to +93.3°C)
Media: -40°F to 200°F (-40°C to +93.3°C)

Weather protection
NEMA 4X

Standard features

Pressure connections
Standard:
1/4" NPT female, back connection
Optional:
1/2" NPT female, back connection, with adapters
1/4" NPT female, side connection
1/2” NPT female, side connection, with adapters

Differential Pressure Gauge Model 700.04 2½” & 4½”

Sensing Element Internal Wetted Parts
Ceramic magnet and 316 stainless steel

Sensor Block
Black anodized aluminum - standard
316L stainless steel - optional

Elastomers (O-rings)
Viton - standard
Buna N or Ethylene propylene - optional

Case & Bezel
Fiberglass reinforced thermoplastic

Dial
White aluminum with black lettering

Pointer
Black aluminum

Window
Acrylic - standard
Laminated safety glass - optional

Dial Case filling
Glycerine 99.7% (Changes to Model 703.04)
Other filling fluids available as an option

Warranty
Seven (7) years limited
### Optional Wall Mounting/ Pipe Mounting Bracket

**P/N 50994353**

*Wall Mounting Configuration¹*

*Optional side connection shown*

*Pipe Mounting Configuration*

*Standard back connection shown*

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**Wall Mount/ Pipe Mount Dimensions**

<table>
<thead>
<tr>
<th>Size</th>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>2½”</td>
<td>mm</td>
<td>71.1</td>
<td>203.2</td>
</tr>
<tr>
<td></td>
<td>in</td>
<td>2.80</td>
<td>8.0</td>
</tr>
</tbody>
</table>

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**Notes:**

1) Order optional end connections if standard back connections interfere with wall, or order standoff blocks to space from wall, as application requires.

**Wall & Pipe Mounting:**
The 700.04 can be configured with either a back mount sensor housing or a side mount sensor housing. The installation of the sensor housings must be done at the factory, as they are not field modification items.

**2.5” and 4.5” gauges**

**Wall mount**
Rear connections will pose a problem for wall mounting unless the bracket & gauge assembly is held off of the wall in some fashion. A ½ inch aluminum standoff block is available to alleviate this problem. Customers can add the number of blocks required to adjust the installation to their particular application. Optional side connections will not experience this problem and will not require the standoff blocks.

**Pipe mount**
Like the wall mount application, the rear connections will pose a problem for pipe mounting unless the bracket & gauge assembly is held off of the pipe in some fashion. A stainless steel offset plate is is available to alleviate this problem. The plate is U-bolted to the pipe and after the gauge and bracket assembly is bolted to the plate, the plate will hold the gauge away from the pipe so that any connection can be applied. Optional side connections will not experience this problem and will not require the offset bracket.
Optional Mounting Accessories

**Standoff Block**
part number: 50027611

Used to hold wall mounting bracket away from the wall in order to access the rear gauge connections.

**Pipe Mounting Offset Plate**
part number: 50027620

Used to hold pipe mounting bracket away from pipe in order to access rear gauge connections.
### Panel Cut-out Dimensions

<table>
<thead>
<tr>
<th>Size</th>
<th>B</th>
<th>J</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>2½&quot;</td>
<td>mm</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>mm</td>
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<td></td>
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<tr>
<td></td>
<td>in</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4½&quot;</td>
<td>mm</td>
<td></td>
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<td></td>
<td>mm</td>
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<td></td>
<td>in</td>
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</tbody>
</table>

**P = PANEL CUTOUT**  
**B = BOLT CIRCLE**
Notes: Panel Mounting

2.5"
Surface mount
The 2.5" gauge cannot be surface mounted in a panel due to the size of the sensor housing.

Rear mount
*Must be a dry gauge with no drag pointer in order to rear mount in a panel. Do not loosen the screws of a filled gauge or leakage will result.*

Remove bezel screws (dry gauge) to relax any deformation of the bezel and insert the bezel into the panel cutout. Connect the gauge case to the bezel again from the rear and secure with the original screws inserted from the front of the panel, screwing into the case behind the panel.

4.5"
Surface mount
Surface mounting can be done with either dry gauges or filled gauges. The 700.04 is provided with mounting studs for panel mounting in the surface-mount configuration. After making the proper cutout, install the studs in the rear of the gauge, install the gauge from the front of the panel and secure with the nuts provided with the gauge.

Rear mount
*Must be a dry gauge with no drag pointer in order to rear mount in a panel. Do not loosen the screws of a filled gauge or leakage will result.*

Remove bezel screws (dry gauge) to relax any deformation of the bezel and insert the bezel into the panel cutout. Connect the gauge case to the bezel again from the rear and secure with the original screws inserted from the front of the panel, screwing into the case behind the panel.

### 700.04 Weights

<table>
<thead>
<tr>
<th></th>
<th>Aluminum</th>
<th>Dry</th>
<th>Filled</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.5&quot;</td>
<td>0.6345 lbs.</td>
<td>0.7090 lbs.</td>
<td></td>
</tr>
<tr>
<td>4.5&quot;</td>
<td>1.6275 lbs.</td>
<td>2.0260 lbs.</td>
<td></td>
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<table>
<thead>
<tr>
<th></th>
<th>Stainless</th>
<th>Dry</th>
<th>Filled</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.5&quot;</td>
<td>1.3630 lbs.</td>
<td>1.4545 lbs.</td>
<td></td>
</tr>
<tr>
<td>4.5&quot;</td>
<td>1.6765 lbs.</td>
<td>2.0265 lbs.</td>
<td></td>
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</tbody>
</table>
Operating and Installation Instructions

Gauge Inspection:
Please read the product specifications label attached to the gauge body to insure that this gauge is the same one specified for the particular application as it applies to dial size, materials of construction, working pressure, differential pressure, etc. Inspect for any shipping damage and, if discovered, report it immediately.

Product Design Features:
The Wika Type 700.04 Series is a magnetically coupled differential pressure gauge. The internal piston/magnet travels linearly in a very close tolerance bore and a follower magnet, attached to the pointer, tracks this movement. The pointer, in turn, indicates the differential pressure on the dial. By design, there is a small leakage of media, within the sensor body, across the piston/magnet from side to side. It can be seen when the high side is receiving pressure, but the low side is open to atmosphere. In this condition, there will be no differential pressure shown on the gauge. Both sides must be connected to read the differential pressure. NOTE: The 700.04 Series is not suitable for level indication applications, or for use with diaphragm seals.

Gauge Mounting:
The 700.04 Series gauge is supplied, standard, for panel mounting. When installing the 2.5” dial gauge into the panel, remove the four (4) bezel screws, mount the gauge from back to front through the panel, then reinstall the four (4) bezel screws through the panel and into the bezel, securing the gauge to the panel. When installing the 4.5” dial gauge, install the four (4) threaded studs into the back of the dial case, mount the gauge from front to back through the panel and secure the gauge to the back of the panel by tightening the locking nuts to the threaded studs. Optional pipe mount kits or wall mount kits (see back) are available. (Note: 2 1/2” gauge cannot be panel mounted if case is liquid filled.)

Gauge Connections:
Supplied, standard, with (2) x ¼” FNPT back connections and are clearly indicated with Hi (+) and Lo (-). Optional connection sizes and/or end connections are available.

Troubleshooting:
If the gauge is not indicating differential pressure, check to insure that both the high (+) and low (-) connections have been properly installed. Check to insure that there is pressure to the high (+) side of the gauge and that there is differential pressure across the device being monitored by the Type 700.04 Series. If the gauge is being used together with a three-valve manifold, check to insure that the high (+) and low (-) valves are in the open position and the equalizer valve is in the closed position.

Measuring system diagram

Note: For more information about the optional Reed Switches, please refer to WIKA’s Switch Addendum.