

# Differential Pressure Gauges Magnetic-Piston Sensing Element Type 700.04

WIKA Datasheet 700.04

## Applications

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

## Product Features

- Magnetic piston sensing element
- Rugged thermoplastic case
- Field liquid fillable
- 6000 psig (400 barg) maximum working pressure
- Differential pressure ranges to 100 psid (7 barg)



Differential Pressure Gauge Type 700.04 2½" & 4½"

## Specifications

### Nominal Sizes

2½" & 4½" (63 & 115 mm)

### Accuracy

± 2% of span (on increasing pressure)

### Scale Ranges

0/5 psid through 0/100 psid  
(0/350 mbard through 0/7 barg)

### 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

### 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

### Sensing Element, Internal Wetted Parts

Ceramic magnet and 316 SS

### Sensor Block

Black anodized aluminum - standard

316L SS - 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 - (changes to Model 703.04)

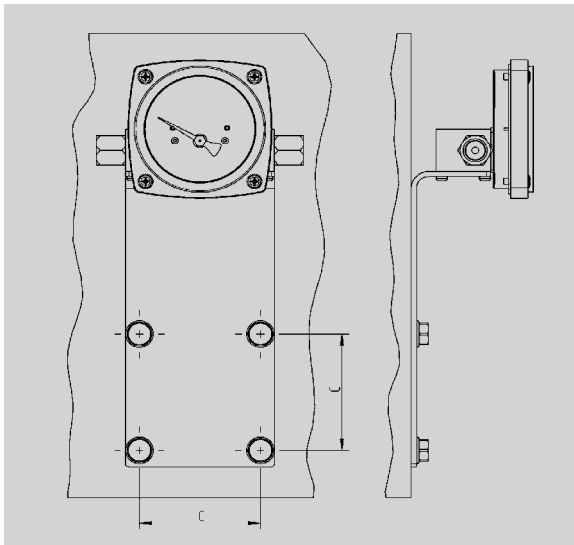
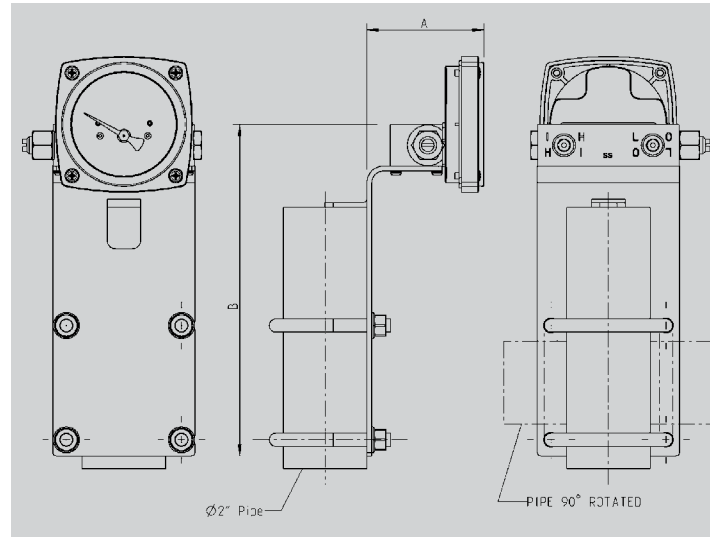
Silicone - 1000 CST (changes to Model 703.04)  
(no other case fills approved)**Warranty**

Seven (7) years limited

**Order Options (min. order may apply)**

- Bidirectional reading
- Red drag pointer
- Special connections
- Wall or pipe mounting kit
- Other pressure scales
- Alarm contact switches

## Optional Wall Mounting/Pipe Mounting Bracket P/N 50994353

**Wall Mounting Configuration<sup>1</sup>****Optional side connection shown****Pipe Mounting Configuration****Standard back connection shown****Wall Mount/Pipe Mount Dimensions**

Size		A	B	C
2½"	mm	71.1	203.2	70
	in	2.80	8.0	2.76

**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.

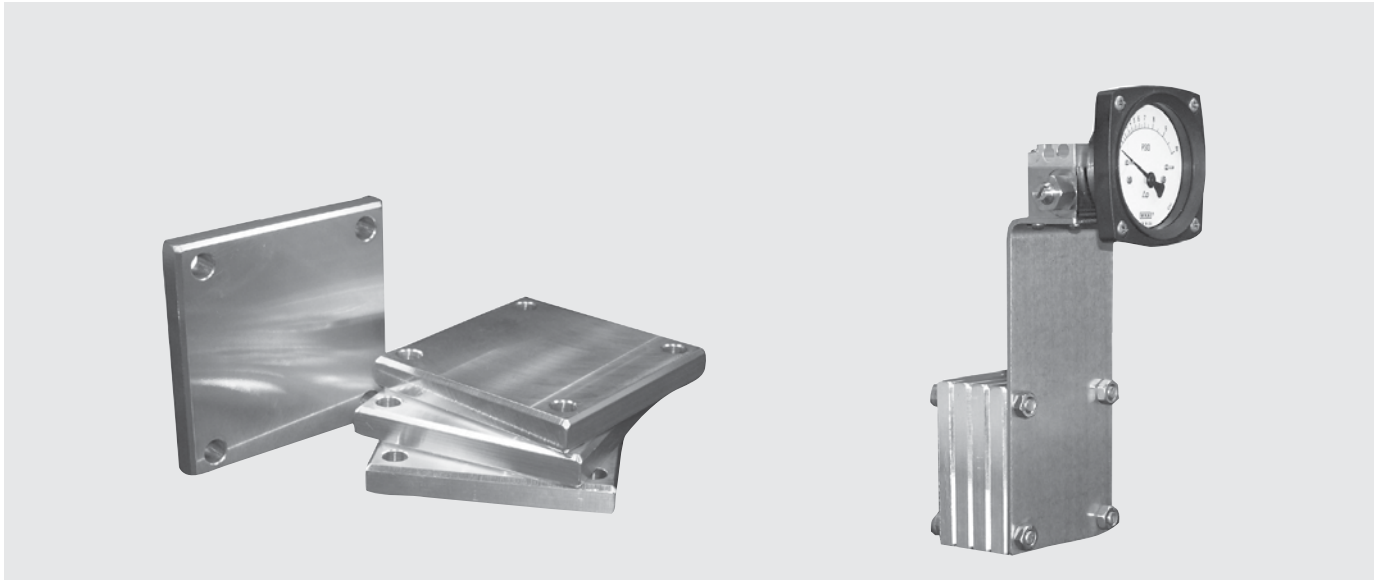
**2.5" and 4.5" gauges****Wall mount**

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" 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**

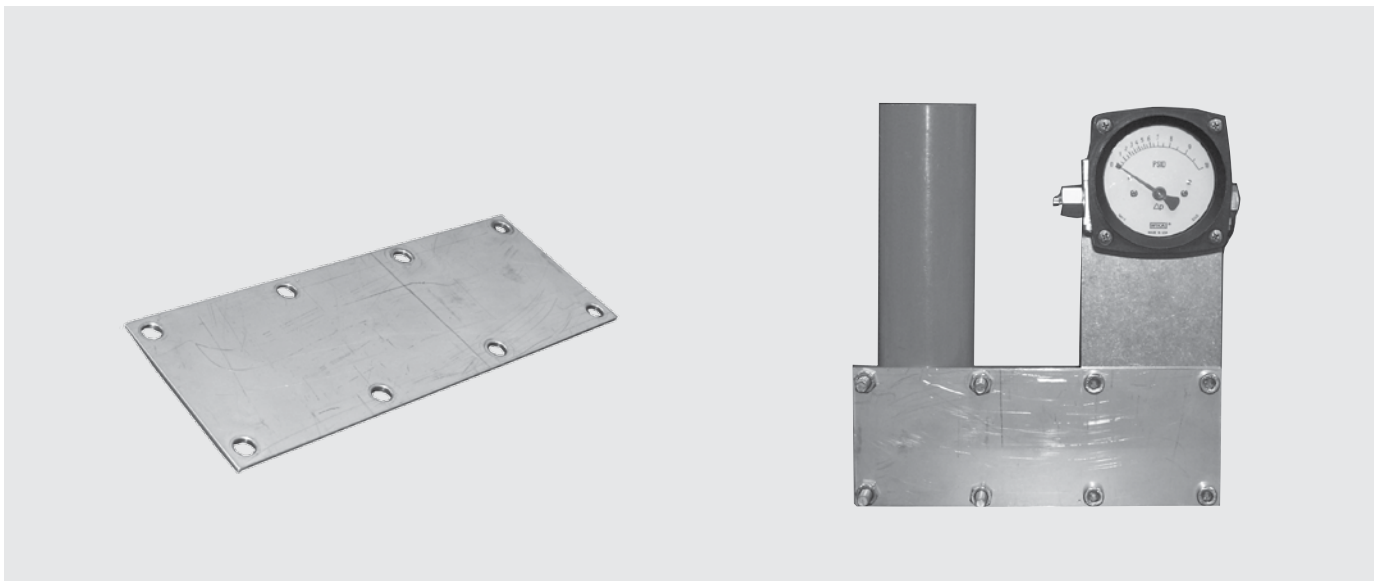
Like the wall mount application, the rear connections will pose a problem for pipe mounting unless the bracket & gauge assembly is held off of the pipe in some fashion. A stainless steel offset plate is available to alleviate this problem. The plate is U-bolted to the pipe and after the gauge and bracket 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



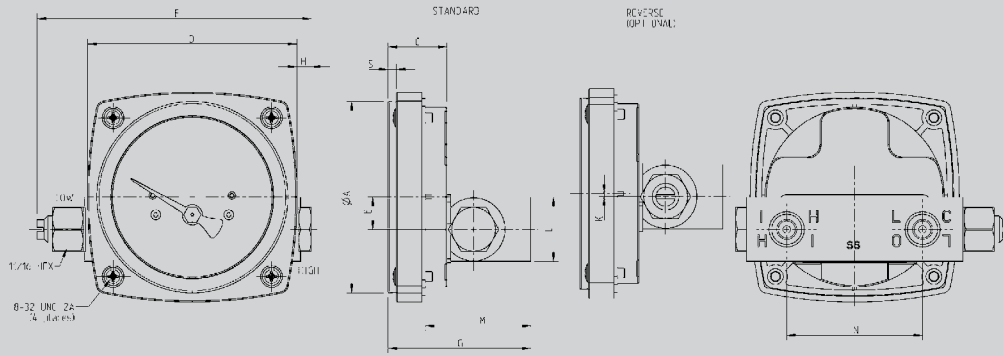
**Standoff Block**  
part number: 50027611

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

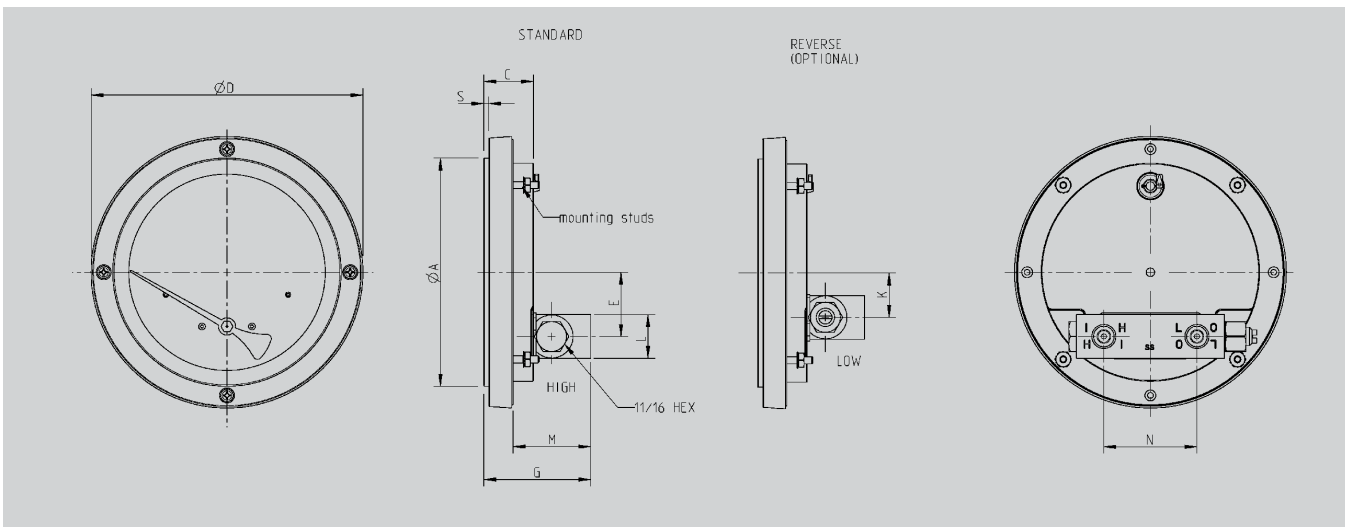


**Pipe Mounting Offset Plate**  
part number: 50027620

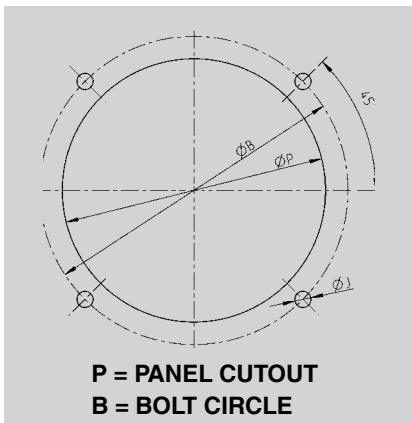
Used to hold pipe mounting bracket away from pipe in order to access rear gauge connections.



Size		$\phi A$	C	D	E	F	G	H	K	L	M	N	S
2½"	mm	76	23.5	83.2	12.8	109	56.7	5.7	1.2	25.4	41.9	54	3.2
	in	2.99	0.92	3.28	0.50	4.29	2.23	0.22	0.05	1.0	1.65	2.13	0.13



Size		$\phi A$	C	D	E	G	K	L	M	N	S
4½"	mm	132.4	28.8	157.7	37.3	62	25.7	25.4	45.1	54	2.9
	in	5.21	1.13	6.21	1.47	2.44	1.01	1.00	1.77	2.13	0.12



### Panel Cut-out Dimensions

Size		B	J	P
2½"	mm	89.1	4.7	76.8
	in	3.53	0.185	3.02
4½"	mm	143.4	4.7	133.4
		5.64	0.185	5.25

**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				
Aluminum	Dry		Filled	
	2.5"	0.6345	lbs.	0.7090
4.5"	1.6275	lbs.	2.0260	lbs.
Stainless	Dry		Filled	
	2.5"	1.3630	lbs.	1.4545
4.5"	1.6765	lbs.	2.0265	lbs.

# 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 assembly travels linearly in a very close tolerance bore. A second magnet attached to the pointer, tracks this movement. Thus the pointer indicates the differential pressure on the dial. By design, there is a small flow-by of media within the sensor body, across the piston/magnet from side to side. The flow-by rate across the piston will not exceed 25 SCFH of air at 100 PSID at ambient conditions. Due to this design, both sides must see continuous flow to indicate differential pressure. **IMPORTANT:** The 700.04 series is not suitable for static pressure applications (i.e. level measurement) and cannot be used 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.)**

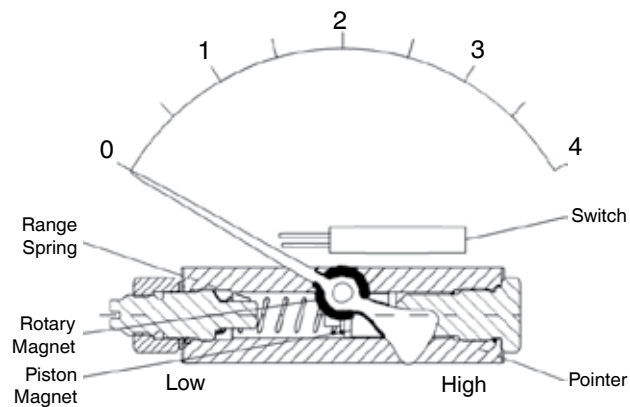
## Gauge Connections:

Supplied, standard, with (2) x 1/4" 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.**

## Ordering information

Pressure gauge model / Nominal size / Scale range / Size of connection / Optional extras required Specifications and dimensions given in this leaflet represent the state of engineering at the time of printing. Modifications may take place and materials specified may be replaced by others without prior notice.

