

Mid-West[®] Instrument

Model 105 – Differential Pressure Gauge *Bellows Type*

*High Accuracy, Low DP Range
±0.5% or ±1% Full Scale Accuracy*



Model 105 – Precision Differential Pressure Gauge for Low DP Applications

The Mid-West[®] Instrument Model 105 is a high-accuracy bellows differential pressure gauge designed for low differential pressure ranges. With ±0.5% or ±1.0% full-scale accuracy and a rugged, field-proven design, it ensures precise and reliable pressure measurement across a range of demanding applications.

Why Choose Model 105?

- **Engineered for Sensitivity** — Ideal for low DP applications requiring fine resolution.
- **Reliable Analog Output** — Bellows and mechanical linkage convert differential pressure into consistent gauge readings.
- **Durable & Protected** — Includes built-in bi-directional over-pressure protection to prevent internal damage and extend service life.

Applications

- Oil & Gas
- Water/Wastewater
- Power Generation
- Chemical Processing
- Tank Level Measurement
- HVAC

Installation Tip:

A **3 or 5 valve manifold** is recommended for installation of the Model 105. Proper use helps prevent over-range conditions and pressure shock during system pressurization, and allows for convenient zeroing, range adjustment, and calibration verification.

Key Features & Benefits

High Accuracy

- ±0.5% or ±1.0% full scale accuracy
- Bellows and linkage assembly translates pressure into highly accurate readings.

Field Adjustable Zero

- Micro adjust pointer allows re-zeroing without disassembly.

Bi-Directional Over-Pressure Protection

- Integrated Bi-directional Over-Pressure Relief Valve (OPV) activates at 130% of range to equalize pressure between high and low sides.

Technical Specifications

Specification

Details

Accuracy	±0.5% FS (ASME B40.1 Grade 2A) or ±1.0% FS (ASME B40.1 Grade 1A)
Differential Pressure Ranges	0-10 IN H ₂ O to 0-79.9 IN H ₂ O (0-.4 PSID to 0-2.9 PSID)
Working Pressure Ratings	1500, or 3000 PSIG
Housing Materials	Aluminum, Brass, Carbon Steel, or 316L Stainless Steel
Wetted Internals	Stainless Steel
Dial Sizes	4½" and 6"
Dial Arc	270°
Dial Scale Types	PSI, inches of H ₂ O, bar, kPa, kg/cm ² , dual scale, square root scale for flow
O-Ring Materials	Buna-N, Viton®, EPDM
Port Configuration	Dual top & bottom (high port on left when facing the dial)
Mounting	Panel mounting and (2) 5/16-24 mount holes in body are standard
Operating Temperature	–40°F to +200°F (–40°C to +93°C)
Dial Enclosure Rating	Designed and tested to meet NEMA Type 4X requirements.
Proof Pressure	2x working pressure or 10,000 PSI max at ambient temperature

Dial Range Options

Standard ranges are shown below.

Custom dual-scale, multi-color, and flow-rate dials are available.

Flow rate dials (GPM, SCFM, L/S, LB/HR, M³/HR) are **available with proper engineering data**.

Not all scales are available for every range – Contact Factory.

Optional ranges available:

- PSID, kPa, bar, kg/cm², Inches H₂O, mm H₂O, cm H₂O.



Standard Dial Ranges – Model 105

 Uni-directional Dial Ranges	
0 – 10	inches H ₂ O
0 – 15	inches H ₂ O
0 – 25	inches H ₂ O
0 – 30	inches H ₂ O
0 – 50	inches H ₂ O
0 – 60	inches H ₂ O

 Bi-directional Dial Ranges	
10 – 0 – 10	inches H ₂ O
15 – 0 – 15	inches H ₂ O
25 – 0 – 25	inches H ₂ O
30 – 0 – 30	inches H ₂ O

Model	Accuracy	Min. ΔP Range	Max. ΔP Range
105	±1/2% or 1%	0-10" H2O (0-25 mbar)	0-79.9" H2O (0-200 mbar)

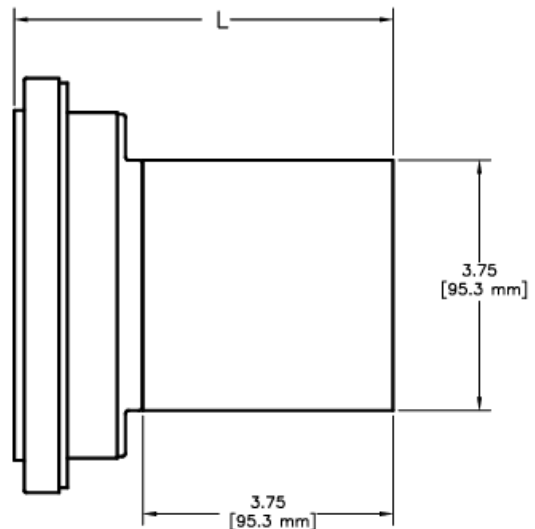
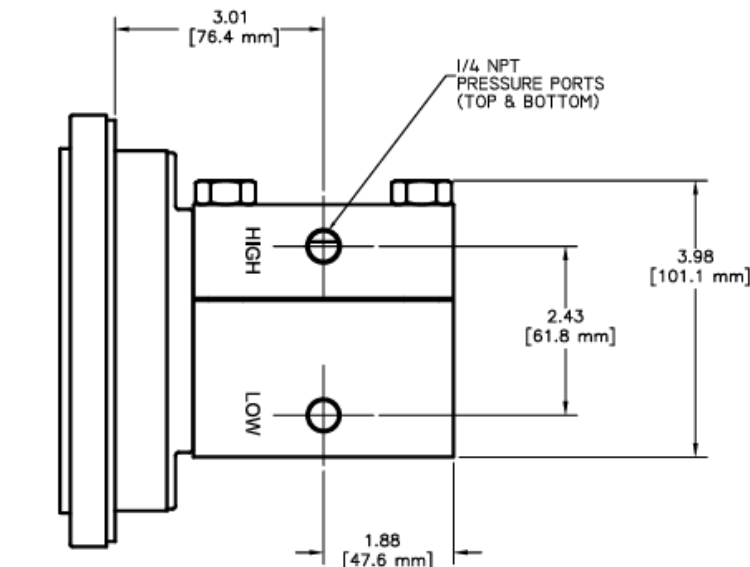
- ±1/2% is only available on gauges with ranges greater than 0-30" H2O

Standards

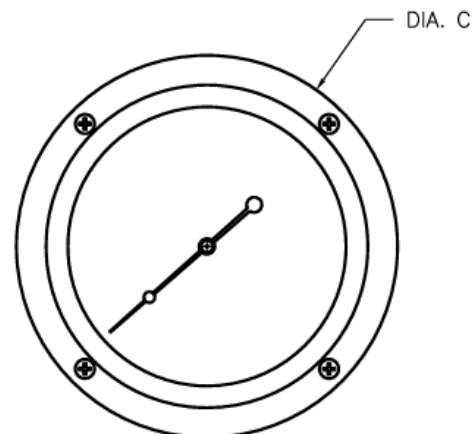
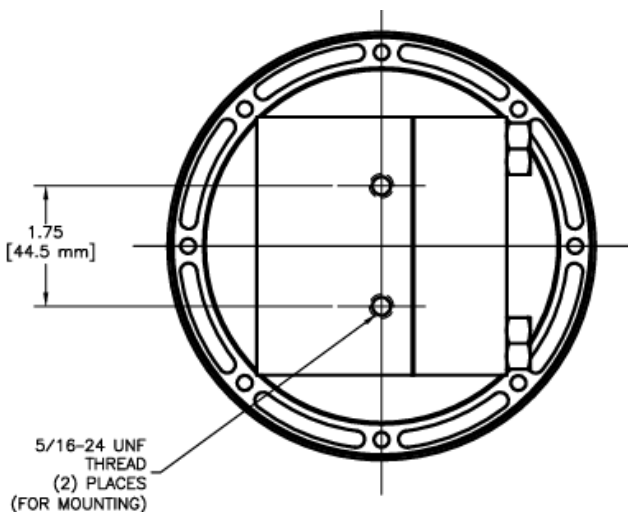
Model 105 gauge either conforms to and/or is designed to the following required standards:

- ASME B40.100
- ASME B1.20.1
- NACE MR0175
- SAE J514
- UL Std. No. 50

Dimensions



DIAL SIZE	DIAMETER C	LENGTH L
	Inch (mm)	Inch (mm)
4-1/2 in.	6.21 (157.7)	5.25 (133.4)
6 in.	8.18 (208.0)	5.31 (134.9)



Standard Model Number Sequence: 105-FE-00-O-O

1500 PSIG Working Pressure, Aluminum Body, Stainless Steel Internals Buna-N Seals, ¼" FNPT Dual Top & Bottom Connections, 6" Uni-Directional Round Dial with white background and black letters, Weather Resistant Engineered Plastic Case with Shatter Resistant Acrylic Lens, Accuracy ±1% Full Scale (Ascending)

0-10 IN H2O to 0-79.9 IN H2O (0-.4 PSID to 0-2.9 PSID)

Gauge body and internal components are considered wetted parts.

Model Number Configuration

1	0	5			-			-					-	0
[Model]	2	3	-	4	5	-	6	6	6	6	-	7		

* Each character position relates to the numbered section in table below.

Range: _____ **Scale:** _____

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Material

F	1500 PSIG, Aluminum Body, S.S. Internals – 316 Stainless Steel ¼" FNPT Dual Top & Bottom Connections
G	3000 PSIG, Aluminum Body, S.S. Internals – 316 Stainless Steel ¼" FNPT Dual Top & Bottom Connections
M	1500 PSIG, Mild Carbon Steel Body, S.S. Internals – 316 Stainless Steel ¼" FNPT Dual Top & Bottom Connections
N	3000 PSIG, Mild Carbon Steel Body, S.S. Internals – 316 Stainless Steel ¼" FNPT Dual Top & Bottom Connections
Q	1500 PSIG, 316 Stainless Steel Body, S.S. Internals – 316 Stainless Steel ¼" FNPT Dual Top & Bottom Connections
R	3000 PSIG, 316 Stainless Steel Body, S.S. Internals – 316 Stainless Steel ¼" FNPT Dual Top & Bottom Connections
X	1500 PSIG, Brass Body, S.S. Internals – 316 Stainless Steel ¼" FNPT Dual Top & Bottom Connections

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Dial Size Type

E	Accuracy ±1% Full Scale Uni-Directional Dial w/Engineered Plastic Dial Case (Standard)
F	Accuracy ±1% Total Span Bi-Directional Dial w/Engineered Plastic Dial Case
G	Accuracy ±1/2% Full Scale Uni-Directional Dial w/Engineered Plastic Dial Case Only available for ranges greater than 0-30" H2O. Not available with Square Root (Flow) Dials
Z	Special (Un-coded Options)

NOTE: The use of Diaphragm seals is not recommended for the Model 105 gauge.

Not all options are available in combination with other options.

4 Seal Materials

0	Buna-N (aka NBR or Nitrile) (Standard)
1	Viton [®] (aka FKM)- Viton [®] is a Registered Trademark of Dupont
5	Ethylene Propylene (aka EPDM)
9	Special (Un-coded Options)

5 Process Connections

0	1/4" FNPT Dual top & bottom Connections (Standard)
9	Special (Un-coded Options)

6 Additional Options

O	NONE
A	Snubber fittings in bottom process ports
B	Snubber fittings in top process ports
D	3/4" NPT Stainless Steel stub mount bracket
F	Carbon Steel 2" Pipe Mounting Kit
G	Stainless Steel 2" Pipe Mount Kit
H	1/4" Carbon Steel Compression Tube Fittings
J	1/4" Stainless Steel Compression Tube Fittings
K	1/2" FNPT Stainless Steel Adapters (pair)
N	NACE (only available on Aluminum or Stainless-Steel gauge bodies)
Q	CRN (Canadian Registration Number) (Only available with "Q" material option)
S	Shatter Proof Glass Lens
T	Cleaned for Oxygen Service
U	Stainless Steel Tag with S.S. Wire
V	Stainless Steel Tag and S.S. Screw
W	Wall Mount Bracket
Y	4-1/2" Dial Case
Z	Special (Un-coded Options)

7 Electrical Configurations

O	NONE (no electrical option available)
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Not all options are available in combination with other options.