

Model 140/141 Series DELTA METER® Diaphragm Type Differential Pressure Gauge (Five Year Limited Warranty)

The Model 140 provides outstanding capabilities not previously available in a modestly priced differential pressure gauge/switch. It is ideally suited for use on dissimilar fluids, wet gas or fluids with a high concentration of solids, etc. A few of its unique features are:

- Total separation of high and low pressures by a convoluted elastomer diaphragm.
- Sensor magnetically coupled to the indicating pointer and optional switches.
- Sensor housing available in aluminum, brass, or 316 stainless steel.
- Ranges from 0-50" H₂O thru 0-100 PSID (160mbar thru 7 bar)
- Working pressures to 3000 P.S.I.G. (200 bar) depending on housing material.
- Available with square root dials for flow measurement.
- 2-1/2" or 4-1/2" Plastic Dial Assemblies
- 3-1/2" or 4-1/2" Anodized Aluminum Dial Assemblies
- Overrange protection to full rated working pressures.
- Hermetically sealed reed switches (1 or 2) available in either NEMA 4X or NEMA 7 (CSA Listed) enclosures with external set point adjustment access.
- Panel or pipe mounting capabilities.
- Weatherproof engineering plastic or anodized aluminum dial assembly with shatter-resistant lens.
- Accuracy $\pm 3-2-3\%$ Full Scale (0-15 P.S.I.D. thru 100 P.S.I.D.) ascending. (ASME B40.1 Grade B)
 $\pm 5\%$ Full Scale 0-50" H₂O to 0-400" H₂O ascending. (ASME B40.1 Grade D)



2-1/2" Plastic Dial Assy.



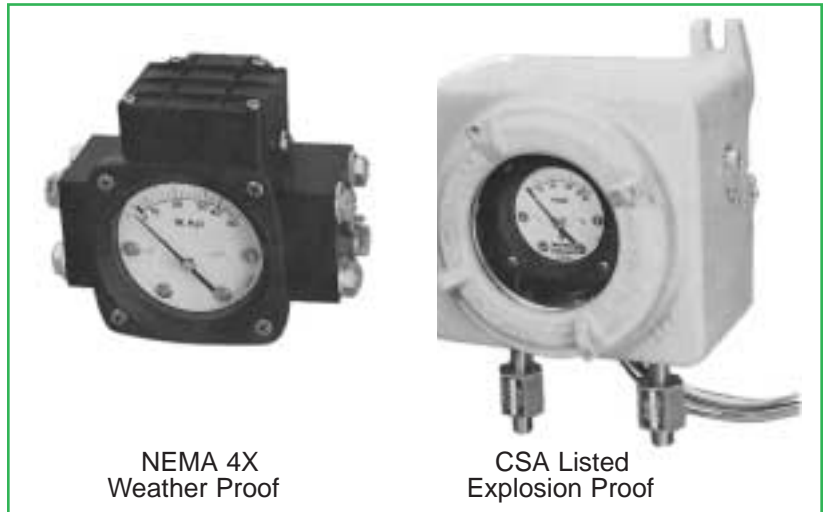
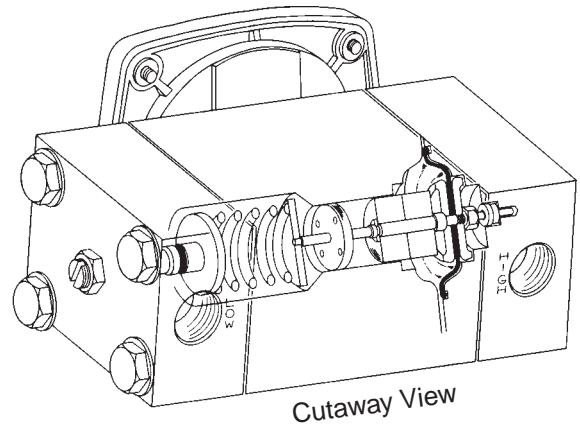
1/4" FNPT Back Connections

MODEL 140/141 DELTA METER® CHARACTERISTICS

Differential pressure is sensed by a flexible elastomer diaphragm and a calibrated range spring. The diaphragm assures total separation between the high and low pressure signals. It is totally supported at full travel in either direction. The Model 140 is protected against overrange to its rated working pressure.

A magnetic coupling transmits the sensing element motion to the indicating pointer. This prohibits the possibility of process fluid leaking into the gauge case, while assuring total isolation of the process fluid within the pressure capsule.

The gauge case, either 2-1/2", 3-1/2" or 4-1/2" dial size, is constructed of a rugged corrosion resistant "engineering plastic" or aluminum with a shatter resistant acrylic lens. The bezel screws and all internal "wetted" metal parts are of stainless steel.



MODEL 140 "DELTA METER" WITH CONTROL SWITCHING

The Model 140 "Delta Meter" is available with either one or two hermetically sealed reed switches for either high alarm, low alarm, or both. The switches are Single Pole Double Throw (SPDT) or Single Pole Single Throw (SPST) with set points adjustable from 10% to 90% of the differential range of the instrument. Switches can be set to activate/deactivate on rising or falling pressure.

The standard switching enclosure is non-corrosive molded plastic that is oil tight, dust tight, and water tight per NEMA 4X. External access to the switch adjustment is provided.

CSA Listed Explosion Proof enclosures with SPDT or SPST switches rated Class I, Groups C & D, Class II, Groups E, F, & G are available. Switch leads are 24", 18 Awg, and are color coded where applicable.

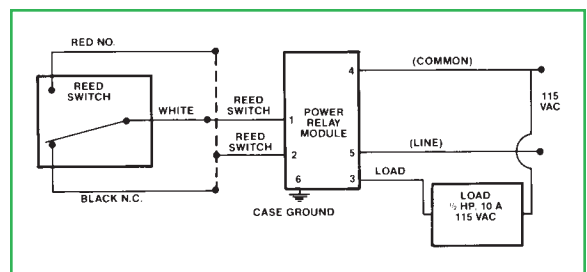
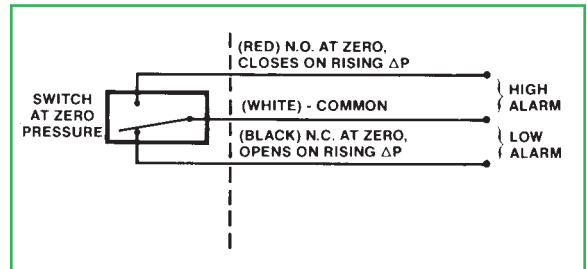
Standard Hermetically Sealed Reed Switch Ratings (Resistive Load)

Type	SPST	SPDT
*Power	25W	3W
Max. Current	0.5 Amps	0.25 Amps
Max. Voltage	230 VAC/230VDC	125 VAC/VDC
Setting (FS)**	10% to 90%	10% to 90%
Hysteresis (Max/Nom)	15% / 8% Full Scale (F.S.)	10% / 5% Full Scale (F.S.)
Repeatability	1% F.S.	1% F.S.

*Product of the switching voltage and current shall not exceed the power rating of the device
 **Except where otherwise stated

Reed Switch Power Relay for High Power Loads

Mid-West Power Relay 1000TR or equivalent should be used for loads above the switch rating. The 1000TR can control loads up to 10 amps. The 1000TR is available in various input power, output power, and enclosure configurations. Contact Mid-West for technical assistance.



STANDARD MODEL SPECIFICATIONS

Model 141 0-50" H2O thru 0-25 PSID
 Model 140 over 0-25 PSID thru 0-100 PSID

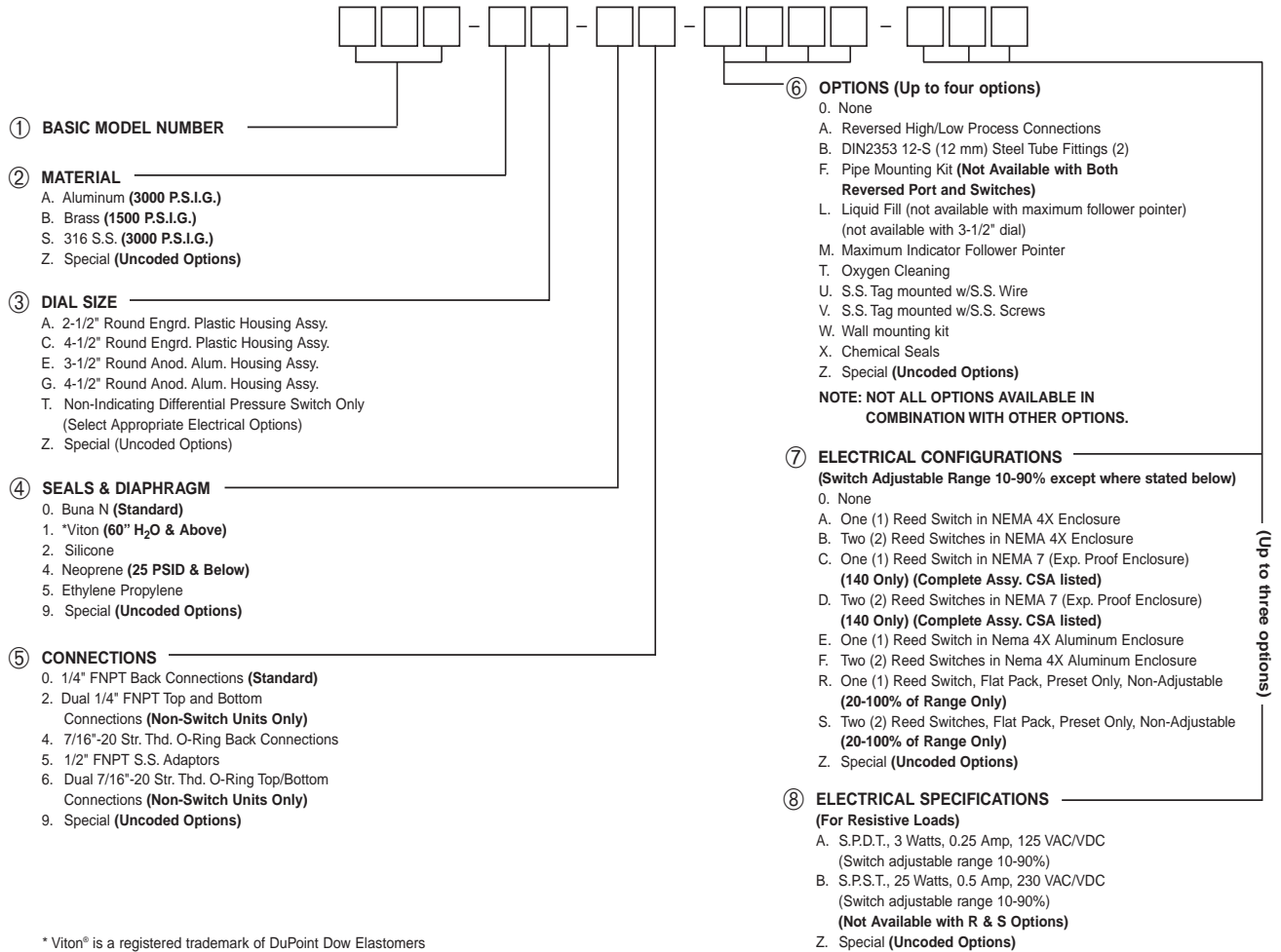
140/141-AA-00-00

3000 P.S.I.G. Working Pressure Aluminum Body, Buna N Diaphragm and Seals, 316 Stainless Steel Internal Metal Parts, Ceramic Magnets, Teflon Guide Bushings, 1/4" FNPT Back Connections, 2-1/2" Round Dial in Corrosion Resistant Engineering Plastic Case with Shatter-Resistant Acrylic Lens.

DIFFERENTIAL RANGE & ACCURACY

0-50 to 0-400" H ₂ O (125 mbar to 1 bar) or equivalent	0-15 thru 0-100 P.S.I.D. (1-7 bar) or equivalent
±5% Full Scale (Ascending)	±3-2-3% Full Scale (Ascending)

PART NUMBERING SYSTEM



1/4" F.N.P.T. pressure connections are located on the back of the body as standard. Upon request, they can be rotated to provide top or bottom connections.

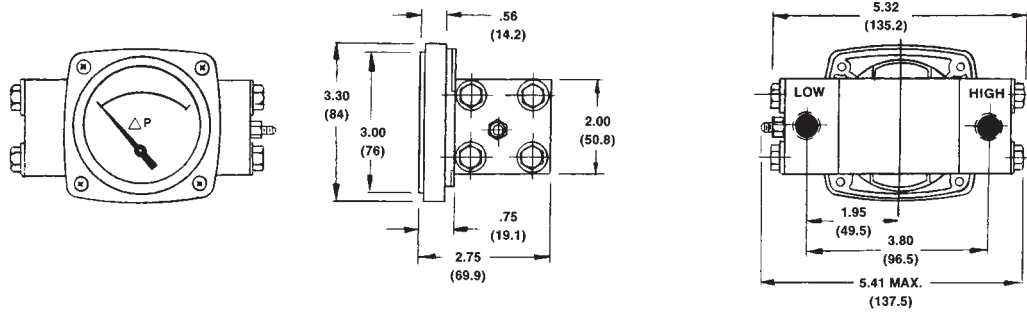
Reversal of the high and low pressure ports to facilitate plumbing is available.

Dual 1/4" FNPT top and bottom connections are available.

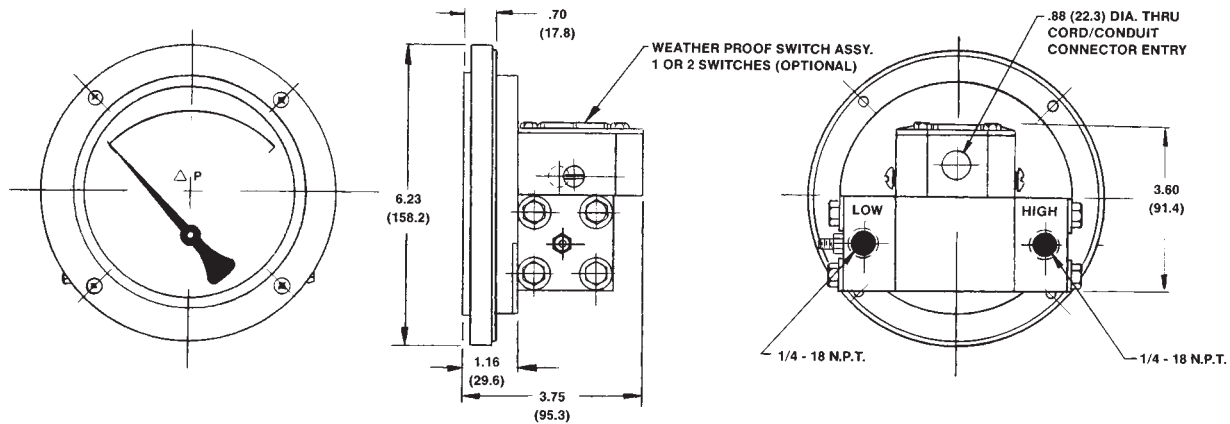
Pipe mounting kits for 2" pipe, plus two different types of wall mounting brackets are options.

MOUNTING INFORMATION & DIMENSIONAL DATA

MODEL 140: 2-1/2" INCH PLASTIC DIAL ASSY.



MODEL 140: 4-1/2" INCH PLASTIC DIAL ASSY.



- NOTES:
1. Drawings show standard gauge nominal dimensions. (not to scale)
 2. Dimensions shown in parentheses are in millimeters.
 3. Mounting Dimensions for 3-1/2" & 4-1/2" Alum. Dial Assys. – Contact Factory

Manufacturer reserves the right to change specifications without prior notice.

PROOF PRESSURE: Two times working pressure or 6,000 PSI whichever is lower at ambient temperature.

TEMPERATURE LIMITS: -40°F(-40°C) to +200°F(+93°C). - These limits are based on the entire instrument being saturated to these temperatures. System (process) temperatures may exceed these limitations with proper installation. Contact our customer service representative for details.

STANDARDS: All Model 140 Series differential pressure gauges either conform to and/or are designed to the requirements of the following standards:

ASME B1.20.1
 ASME B40.1
 CSA-C22.2 No. 14.25 and 30
 EN-61010-1

NACE MR0175
 NEMA Std. No. 250
 SAE J514
 UL Std. No. 50,508 and 1203



REPRESENTED BY:

Mid-West[®]
Instrument

6500 Dobry Dr. □ Sterling Heights, MI 48314 U.S.A.
 (586) 254-6500 □ FAX (586) 254-6509
 E-mail: sales@midwestinstrument.com
 Website: www.midwestinstrument.com

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