

Data Sheet

# MID-WEST INSTRUMENT

“Diaphragm Type”

Differential Pressure Gauges, Switches & Transmitters  
Model 140

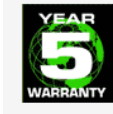


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# Mid-West<sup>®</sup> Instrument



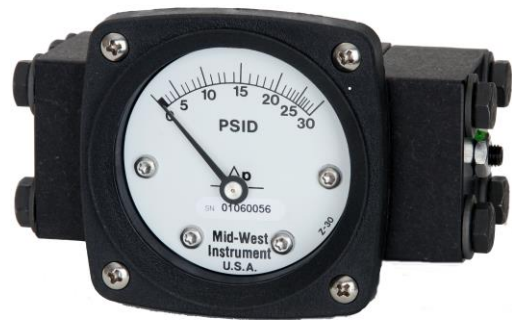
## “Diaphragm Type” Differential Pressure Gauges Switches & Transmitters Model 140

Model 140 Diaphragm type DP Gauge provides outstanding capabilities not previously available in a modestly priced differential pressure gauge/switch.

**Common Applications:** Filter/Strainer Monitoring, Compressed Air, Hydraulic, Refrigerant, Pump Performance Testing, Heat Exchanger Pressure Drop Monitoring, Water Treatment Applications, Tank Level Monitoring Horizontal or Vertical, Flow Monitoring & Balancing

Ideally suited for use on dissimilar fluids and wet gas or fluids with a high concentration of solids, etc.

Model 140 0-30 PSID  
with 2-1/2" Dial



*“A World Leader  
in Differential Pressure Gauges,  
Switches & Transmitters*

**Features:**

- Total separation of high and low pressures by a Convuluted Elastomer Diaphragm.
- Over range protection to full rated working pressure.
- Body Materials: Aluminum, Brass or 316L stainless steel Hasteloy available upon request.
- Internal metal parts 316 stainless steel.
- ¼" FNPT & ½" FNPT Process Connections
- Sensor magnetically coupled to the indicating pointer and optional switches.
- Weather-resistant construction standard.
- Shatter resistant acrylic lens.
- Variety of Dial type and Sizes: 2-1/2", 3-1/2", 4-1/2" & 6"
- DP Ranges available in: Inches H2O, PSID, bar, and Kpa
- Available with Square Root dials for flow measurement
- Multiple mounting options available
- Temperature Limits: -40°F(-40°C) to +200°F(+93°C)



Model 140 0-40 PSID & 0-2.8 Bar  
with 4-1/2" Dial& maximum follower pointer



Model 140 0-30 PSID & 0-200 kPa  
with 2-1/2" Dial & Special Color Dial

Model	Accuracy	Min. ΔP Range	Max. ΔP Range	Max. Line Pressure PSIG (bar)	Optional Switches
140	±5% 0-50" H2O to 0-399" H2O ±3/2/3% 0-15 PSID to 0-100 PSID	0-50" H2O (0-125 mbar bar)	0-100 PSID (0-7 bar)	3000 (200)**	1 or 2 Switches or 4-20 mA Transmitter

\*\* Brass Body Working Pressure rated @ 1500 PSIG (103 bar)

# “Diaphragm Type” Differential Pressure Gauge Switch & Transmitter Options Model 140



**Model 140 shown with “AA” switch option**

(1) Reed switch located inside NEMA 4x enclosure with 7 position terminal strip. An opening at rear of enclosure accepts ½” flexible weather-proof or conduit connector (supplied by customer).

**Model 140 shown with “EA” switch option.**

(1) Reed switch in general purpose enclosure Division 2 Hazardous locations with 7 position terminal strip. An opening at rear of enclosure accepts ½” flexible weather-proof or conduit connector (supplied by customer).

**Model 140 “Delta Meter”** is available with either one or two hermetically sealed reed switches for either high alarm, low alarm, or both and a 4-20mA transmitter depending on model. The switches are Single Pole Double Throw (SPDT) or Single Pole Single Throw (SPST) with adjustable set points. Switches can be set to activate/deactivate on rising or falling pressure. CE Marked and ROHS Compliant

**Model 140** standard switch 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. Also available 3rd party certified Hazardous Location switches rated Class I, Division 1, Groups C & D, Class II, Division Groups E, F, & G and Class I, Division 2, Groups A, B, C, & D, Class II, Division 2, Groups F & G are available.



**Model 140 shown with “TT” switch option.**

(1) 4-20 mA Transmitter (8-28 VDC Loop Power) with 7 position terminal strip. An opening at rear of enclosure accepts ½” flexible weather-proof or conduit connector (supplied by customer).

Model Type	SPDT	SPST NO	Transmitter 4-20mA
Power	3 W	25 W	4-20 mA Loop Power
Max Current	0.25 Amps	0.5 Amps	8-28 VDC Loop Powered 2-Wire interface
Max Voltage VAC/VDC	125 VAC/VDC	230 VAC/VDC	1000 Ohm max Loop resistance at 28 vdc
Setting Full Scale	15-90%	15-90%	20-100%
Hysteresis (Max / Norm)	10% / 5% (FS)	15% / 8% (FS)	N/A
Repeatability	1% F.S.	1% F.S.	1% F.S.
Connections	Terminal Strip	Terminal Strip	Terminal Strip



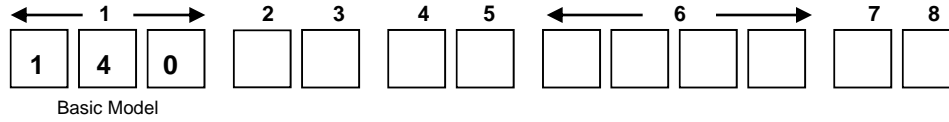
## Standard Model Number Sequence: 140-AA-00-00

3000 PSIG Working Pressure, Aluminum body, 316L Stainless Steel Internal Metal Parts,  
Ceramic Magnets, Buna-N Diaphragm and Seals, Teflon Guide Bushings, 1/4" FNPT Back Connections,  
2-1/2" Round Dial, Engineered Plastic Dial Case with Shatter Resistant Acrylic Lens

**Accuracy ±5% F.S. (Ascending) 0-50" H<sub>2</sub>O to 0-399" H<sub>2</sub>O or equivalent**  
**Accuracy ±3/2/3% F.S. (Ascending) 0-15 PSID to 0-100 PSID or equivalent**

**Range 0-50" H<sub>2</sub>O to 0-100 PSID (0-125 mbar to 0-7.0 bar)**

*Gauge Body and Internal components are considered wetted parts.*



Range: \_\_\_\_\_



2	Material
A	Aluminum Body / 316 Stainless Steel Internal Metal Parts & Teflon Guide Bushings
B	Brass Body / 316 Stainless Steel Internal Metal Parts & Teflon Guide Bushings
S	316 Stainless Steel Body / 316 Stainless Steel Internal Metal Parts & Teflon Guide Bushings
Z	Special ( <b>Un-coded Options</b> )
3	Dial Size & Type
A	2-1/2" Round Dial w/Engineered Plastic Dial Case ( <i>Not Available with Explosion Proof Enclosure Switch Options C&amp;D</i> )
C	4-1/2" Round Dial w/Engineered Plastic Dial Case
E	3-1/2" Round w/Anodized Aluminum Dial Case ( <i>Not Available with Explosion Proof Enclosure Switch Options C&amp;D</i> )
G	4-1/2" Round w/Anodized Aluminum Dial Case
J	6" Round w/Engineered Plastic Dial case ( <i>Not Available with Explosion Proof Enclosure Switch Options C&amp;D</i> )
T	Non-Indicating DP Switch Only
Z	Special ( <b>Un-coded Options</b> )
4	Seal Materials
0	Buna-N ( <b>Standard</b> )
1	Viton®-A Registered Trademark of Dupont
2	Silicone
5	Ethylene Propylene
9	Special ( <b>Un-coded Options</b> )
5	Process Connections
0	1/4" FNPT Back Connections ( <b>Standard</b> )
2	Dual 1/4" FNPT Top & Bottom Connections ( <b>Non-Electrical Option Units Only</b> )
3	1/4" FNPT Bottom Connections ( <i>Must use with explosion proof enclosure options C &amp; D</i> )
4	7/16"-20 straight thread O-Ring ( <b>Back Connections only</b> )
7	1/2" FNPT End Connections ( <i>2000 PSIG SWP for S.S. &amp; Aluminum Gauge Body</i> ) ( <i>Not available with C &amp; D switch options</i> )
8	1/4" FNPT End Connections ( <i>2000 PSIG SWP for S.S. &amp; Aluminum Gauge Body</i> ) ( <i>Not available with C &amp; D switch options</i> )
9	Special ( <b>Un-coded Options</b> )

## Model 140 - continued

6	Additional Options
<b>O</b>	None
<b>A</b>	Reversed High / Low Process Connections. <i>(Not available with electrical options C, D, T &amp; W)</i>
<b>E</b>	Two (2) 1/4-20 Mounting Holes
<b>F</b>	Carbon Steel 2" Pipe Mounting Kit <i>(Not available with reversed port switch option)</i>
<b>G</b>	Stainless Steel 2" Pipe Mounting Kit <i>(Not available with reversed port switch option)</i>
<b>K</b>	1/2" FNPT Stainless Steel Adapters <i>(Not available with end connections)</i>
<b>L</b>	Liquid Fill <i>(Glycerin Fill Standard) (2) (Not available with shatterproof glass lens)</i>
<b>M</b>	Maximum Indicator Follower Pointer <i>(Not available w/3-1/2", 6" Dial or Liquid fill options)(Not available w/shatterproof glass lens)</i>
<b>N</b>	NACE <i>(Available for Aluminum &amp; Stainless Steel Gauge Bodies only)</i>
<b>Q</b>	CRN (Canadian Registration Number) <i>Available for Aluminum or S.S. Body only (1)</i>
<b>S</b>	Shatter Proof Glass Lens <i>(4-1/2" available only available with option "G" Aluminum Dial Case) (Not available with liquid fill)</i>
<b>T</b>	Oxygen Cleaning
<b>U</b>	Stainless Steel Tag with S.S. Wire
<b>V</b>	Stainless Steel Tag and S.S. Screw <i>(Contact factory on switch options)</i>
<b>W</b>	Wall Mount Kit
<b>X</b>	Chemical Seals
<b>Z</b>	Special <b>(Un-coded Options)</b>
	<i>(1) 2,000 PSIG SWP for Aluminum Body</i>
	<i>(2) Silicone Fill available please contact factory</i>
	<b>NOTE: Not All Options Available in Combination with other Options</b>
7	Electrical Configurations (CE Marked & ROHS Compliant, except C, D, T & W)
<b>O</b>	None
<b>A</b>	One (1) Reed Switch in NEMA 4X/IP66 Enclosure
<b>B</b>	Two (2) Reed Switches in NEMA 4X/IP66 Enclosure
<b>C</b>	One (1) Switch in Explosion Proof Enclosure. Division 1 Hazardous Locations <b>(1)</b> <i>(Available with 4-1/2" Dial only)</i>
<b>D</b>	One (2) Switches in Explosion Proof Enclosure. Division 1 Hazardous Locations <b>(1)</b> <i>(Available with 4-1/2" Dial only)</i>
<b>E</b>	One (1) Reed Switch in NEMA 4X/IP66 Aluminum Enclosure, Division 2 Hazardous Locations <b>(2)(3)</b>
<b>F</b>	Two (2) Reed Switches in NEMA 4X/IP66 Aluminum Enclosure, Division 2 Hazardous Locations <b>(2)(3)</b>
<b>T</b>	4-20 mA Transmitter in NEMA-4X/IP66 aluminum enclosure
<b>W</b>	4-20 mA Transmitter in general purpose enclosure, Division 2 Hazardous Locations <b>(2)(3)(4)</b>
<b>Z</b>	Special <b>(Un-coded Options)</b>
	<b>(1)</b> Complete assembly 3rd Party Certified Class I, Div.1, Groups C & D; Class II, Div. 1, Groups E, F, & G.
	<b>(2)</b> Complete assembly 3rd Party Certified Class I, Div.2, Groups A, B, C, & D; Class II, Div.2, Groups F and G.
	<b>(3)</b> 1625 PSI SWP for NACE in combination with E, F and W electrical configuration
	<b>(4)</b> Contact factory for tank level or flow applications with transmitter configuration
8	Electrical Specifications (For Resistive Loads)
<b>O</b>	None
<b>A</b>	SPDT 3W, 0.25 Amp, 125 VAC/VDC <i>(Switch adjustable range of 15-90%)</i>
<b>B</b>	SPST, 25W, 0.5 Amp., 230 VAC/VDC <i>(Normally Open) (Switch adjustable range of 15-90%)</i>
<b>T</b>	4-20 mA Transmitter (8-28 VDC Loop Power) <i>(± 2% Accuracy from 20-100% of scale, Ascending)</i>
<b>Z</b>	Special <b>(Un-coded Options)</b>

Factory preset switches at no charge (Specify Setting)

**MID-WEST INSTRUMENT** has been serving a variety of industries (Power, Chemical, Petro-Chemical, HVAC, Water Filtration etc...) for over 50 years. Over 1,000,000 DP Gauges have been produced bearing the Mid-West name or private branded for our OEM customers!

Mid-West understands that in today's demanding environment, flexibility, quick response time and the ability to ship most of our product line in 2 weeks or less is essential to our customers. Standard configurations can be customized and modified to suit our customer's needs for ease of installation or retrofit.

If you are in need of additional information please visit our web site at [www.midwestinstrument.com](http://www.midwestinstrument.com) or contact us toll free at **1-800-648-5778** and one of our knowledgeable sales coordinators will be happy to assist you.