

# Mid-West<sup>®</sup> Instrument



## “Diaphragm Type” Differential Pressure Gauges Switches & Transmitters Models 140 & 142

Models **140/142 Series** of Diaphragm type DP Gauges provide outstanding capabilities not previously available in a modestly priced differential pressure gauge/switch.

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

**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

**Features:**

- Total separation of high and low pressures by a Convoluted 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 lens.
- Variety of Uni-Directional Dial types and sizes
- DP Ranges available in: Inches H<sub>2</sub>O, PSID, bar, and Kpa
- Available with Square Root dials for flow measurement

Model 140 with 4-1/2” Dial and maximum follower pointer



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



Model 142 with 2-1/2” Dial



Model 140 with 2-1/2” Dial

Model	Accuracy	Min. ΔP Range	Max. ΔP Range	Max. Line Pressure PSIG (bar)	Optional Switches
142	±2%	0-20" H <sub>2</sub> O (0-50 mbar)	0-25 PSID (0-1.7 bar)	3000 (200)**	1 or 2 Switches or 4-20 mA Transmitter
140	±2%	0-25 PSID (0-1.7 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 Models: 140 & 142



**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 & 142** “Delta Meters” are 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.

**Model 140& 142** 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. 3rd party certified 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.



**Model 142 shown with “BA” switch option**

(2) Reed switches 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 Type	140, 142 SPDT	140 SPST NO	142 SPST NO	140, 142 Transmitter 4-20mA
Power	3 W	25 W	25 W	4-20 mA Loop Power
Max Current	0.25 Amps	0.5 Amps	0.5 Amps	8-28 VDC Loop Powered 2-Wire interface
Max Voltage VAC/VDC	125 VAC/VDC	230 VAC/VDC	230 VAC/VDC	1000 Ohm max Loop resistance at 28 vdc
Setting Full Scale	“140” 15-90% “142” 15-95%	15-90%	15-95%	20-100%
Hysteresis (Max / Norm)	10% / 5% (FS)	15% / 8% (FS)	15% / 8% (FS)	N/A
Repeatability	1% F.S.	1% F.S.	1% F.S.	1% F.S
Connections	(3) 24" Leads 22 AWG	(2) 24" Leads 22 AWG	(2) 24" Leads 22 AWG	Terminal Strip

**Proof Pressure:** Two times rated working pressure or 10,000 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:** Gauges either conform to and/or are designed to the requirements of the following standards:

ASME B1.20.1	NACE MR0175
ASME B40.100	NEMA Std. No. 250
CSA-C22.2 No. 14.25 and 30	SAE J514
EN-61010-1	UL Std. No. 50,508 and 1203

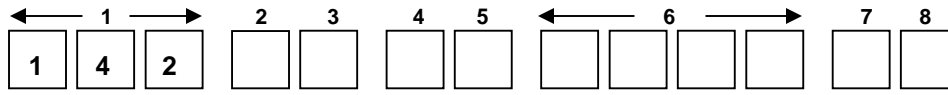


## Standard Model Specifications: 142-AA-00-00

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 Case with Shatter Resistant Acrylic Lens  
Accuracy ±2% Full Scale (Ascending)

**Mid-West Instrument**

**1-800-648-5778    Range 0-20" H<sub>2</sub>O to 0-25 PSID (0-50 mbar to 0-1.7 bar)**



Basic Model

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



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

Factory preset switches at no charge (Specify Setting)

## Standard Model Specifications – continued Model 142

6	Additional Options
<b>O</b>	None
<b>A</b>	Reversed High / Low Process Connections. <b>(not available with Transmitter options T, &amp; W)</b>
<b>F</b>	Carbon Steel 2" Pipe Mounting Kit <b>(not available with reversed port switch option)</b>
<b>G</b>	Stainless Steel 2" Pipe Mounting Kit <b>(not available with reversed port switch option)</b>
<b>L</b>	Liquid Fill <b>(2-1/2" &amp; 4-1/2" Dials Only)</b> Not Available with Maximum Follower Pointer
<b>M</b>	Maximum Indicator Follower Pointer
<b>N</b>	NACE
<b>Q</b>	CRN <b>(Canadian Registration Number)</b>
<b>S</b>	Shatter Proof Glass Lens <b>(Available only with 4-1/2" metal front)</b>
<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 <b>(Not on Gauge Body for Hazardous Locations)</b>
<b>W</b>	Wall Mount Kit <b>(Not Available with Back Connections)</b>
<b>X</b>	Chemical Seals <b>(Contact Factory for Accuracy)</b>
<b>Z</b>	Special <b>(Un-coded Options)</b>
<b>NOTE: Not All Options Available in Combination with other Options</b>	
7	Electrical Configurations (CE marked, except T & W )
<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>E</b>	One (1) Reed Switch in NEMA 4X/IP66 Aluminum Enclosure, Division 2 Hazardous Locations <b>(3)</b>
<b>F</b>	Two (2) Reed Switches in NEMA 4X/IP66 Aluminum Enclosure, Division 2 Hazardous Locations <b>(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>(3)</b>
<b>Z</b>	Special <b>(Un-coded Options)</b>
(2) Complete assembly 3rd Party Certified Class I, Div.1, Groups C & D; Class II, Div. 1, Groups E, F, & G.	
(3) Complete assembly 3rd Party Certified Class I, Div.2, Groups A, B, C, & D; Class II, Div.2, Groups F and G.	
Electrical Specifications (For Resistive Loads)	
<b>A</b>	SPDT 3W, 0.25 Amp, 125 VAC/VDC (standard) (Switch adjustable range of 15-95%)
<b>B</b>	SPST, 25W, 0.5 Amp., 230 VAC/VDC (Normally Open) (Switch adjustable range of 15-95%)
<b>T</b>	4-20 mA Transmitter (8-28 VDC Loop Power) ( $\pm$ 2% Accuracy from 20-100% of scale, Ascending)
<b>Z</b>	Special <b>(Un-coded Options)</b>

**MID-WEST INSTRUMENT** has been serving a variety of industries (Power, Chemical, Petro-Chemical, HVAC, Water Filtration etc...) for over 50 years. Over 2,000,000 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.

