

Mid-West[®] 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



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.
- 1/4" FNPT & 1/2" 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"
- 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)

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



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



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

Model	Accuracy	Min. ΔP Range	Max. ΔP Range	Max. Line Pressure PSIG (bar)	Optional Switches
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

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Standard Dial Ranges: Model's 140 & 142

Range Type				
IN H ₂ O	PSID	Kpa	bar	Flow Dials
0-20"	0-5	0-16	0-1.0	0-1.0
0-25"	0-10	0-25	0-1.6	0-1.5
0-30"	0-15	0-40	0-2.5	0-2.0
0-40"	0-20	0-60	0-4.0	0-2.5
0-50"	0-25	0-100	0-6.0	0-5.0
0-60"	0-30	0-160	0-7.0	0-10
0-75"	0-50	0-250		
0-100"	0-60	0-400		
0-135"	0-75	0-600		
0-150"	0-100	0-700		
0-200"				
0-300"				
0-400"				
Available Multipliers for Flow Dials: X10, X100, X1000, and X10,000				
Note: Not all ranges available in all diaphragm materials				

The above mentioned ranges are some of the most popular requested today. Mid-West Instrument can provide special un-cataloged dial range requirements. As well as multiple scale dials, multiple color dials and special decals. Please consult factory for complete information.

Model	Min. ΔP Range	Max. ΔP Range
140	0-25 PSID (0-1.7 bar)	0-100 PSID (0-7 bar)
142	0-20" H ₂ O (0-50 mbar)	0-25 PSID (0-1.7 bar)

Proof Pressure: Two times rated working pressure at ambient temperature

Temperature Limits:

Gauge with or without switch: -40°F (-40°C) to +200°F (+93°C)

Gauge with transmitter: -20°F to +150°F (-20°C to +65°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: Model 140-142 gauges either conform to and/or are designed to the requirements of the following standards: ASME B1.20.1 NACE MR0175

ASME B40.100

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

Standard Model Specifications: 140-AA-00-00

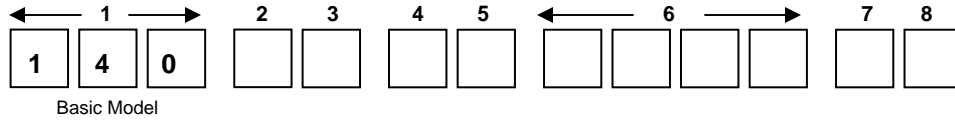
3000 PSIG Working Pressure, Aluminum body, 316L Stainless Steel Internal Metal Parts,
Ceramic Magnets, Buna-N Diaphragm and Seals, Teflon Guide Bushings, 1/4" FNPT Back Connections,
2-1/2" round dial, Engineered Plastic Case with Shatter Resistant Acrylic Lens

Mid-West Instrument

Accuracy $\pm 2\%$ Full Scale (Ascending)

1-800-648-5778

Range 0-25 PSID to 0-100 PSID (0-1.7 bar to 0-7.0 bar)



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 (Un-coded Options)
3	Dial Size & Type
A	2-1/2" Round Uni-Directional Dial w/Engineered Plastic Housing Assembly
C	4-1/2" Round Uni-Directional Dial w/Engineered Plastic Housing Assembly
E	3-1/2" Round Uni-Directional Dial w/Anodized Aluminum Housing Dial Case
G	4-1/2" Round Uni-Directional Dial w/Anodized Aluminum Housing Dial Case
T	Non-Indicating DP Switch Only
Z	Special (Un-coded Options)
4	Seal Materials
0	Buna-N (Standard)
1	Viton®-A Registered Trademark of Dupont
2	Silicone
5	Ethylene Propylene
9	Special (Un-coded Options)
5	Process Connections
0	1/4" FNPT Back Connections (Standard)
2	Dual 1/4" FNPT Top & Bottom Connections (Non-Electrical Option Units Only)
3	1/4" FNPT Bottom Connections
4	7/16"-20 straight thread O-Ring (Back Connections only)
7	1/2" FNPT End Connections (2000 PSIG SWP for S.S. & Alm. Gauge Body) (not available with C & D switch options)
8	1/4" FNPT End Connections (2000 PSIG SWP for S.S. & Alm. Gauge Body) (not available with C & D switch options)
9	Special (Un-coded Options)

Standard Model Specifications – continued Model 140

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

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 or contact us toll free at **1-800-648-5778** and one of our knowledgeable sales coordinators will be happy to assist you.