Mid-West® Instrument

"Diaphragm Type"

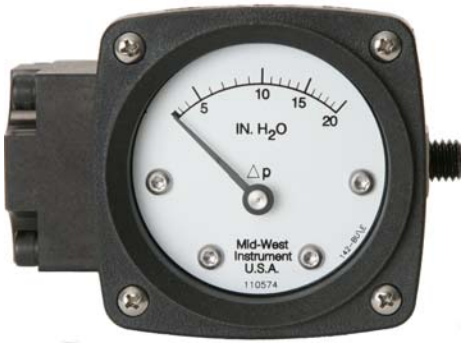
Differential Pressure Gauges
Switches & Transmitters

Model 142

Model 142 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

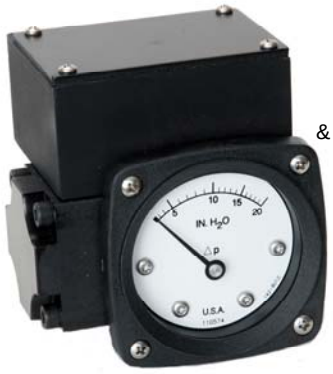
Ideally suited for use on dissimilar fluids and wet gas or fluids with a high concentration of solids, etc.



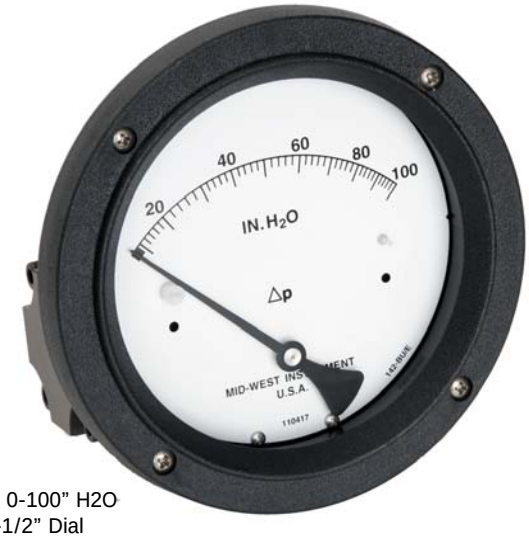
Model 142 0-20" H2O with 2-1/2" Dial

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 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 142 with 2-1/2" Dial & 4-20mA Transmitter



Model 142 0-100" H2O with 4-1/2" Dial

Model	Accuracy	Min. ΔP Range	Max. ΔP Range	Max. Line Pressure PSIG (bar)	Optional Switches
142	±3/2/3%	0-20" H_20 (0-50 mbar)	0-25 PSID (0-1.7 bar)	3000 (200)**	1 or 2 Switches or 4-20 mA Transmitter

**** Brass Body Working Pressure rated @ 1500 PSIG (100 bar)**

“Diaphragm Type”

Differential Pressure Gauge Switch & Transmitter Options

Model 142

Model 142 shown with “EA” switch option
(1) Reed switches located inside General Purpose Enclosure, Division 2 Hazardous location with 7 position terminal strip. An opening at rear of enclosure accepts ½” flexible weather-proof or conduit connector (supplied by customer).

Model 142 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 142 “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.
Switch can be set to activate/deactivate on rising or falling pressure. CE Marked & ROHS Compliant

Model 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. Also available 3rd party Certified switches rated Class I, Division 2, Groups A, B, C & D, Class II, Division 2, Groups F, & G are.

Model 142 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	15-95%	15-95%	20-100%
Hysterisis (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

Mid-West® Instrument

Standard Dial Ranges: Model's 140 & 142

Range Type				
IN H_2O	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	0-50" H2O (0-125 mbar)	0-100 PSID (0-7 bar)
142	0-20" H2O (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.

Standard Model Number: 142-AA-00-OO

3000 PSIG (200 bar) max. Working Pressure, Aluminum body, 316L Stainless Steel Internal Metal Parts, Ceramic Magnets, Buna-N Diaphragm and Seals, Teflon Guide Bushings, ¼" FNPT Back Connections, 2.5" Round Dial, Engineered Plastic Dial Case with Shatter Resistant Acrylic Lens
Accuracy ±3/2/3% Full Scale (Ascending)

Range 0-20" H_2O to 0-25 PSID (0-50 mbar to 0-1.7 bar)

Gauge Body and Internal components are considered wetted parts.

1	2	3	4	5	6	7	8
1	4	2					

Basic Model

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 Dial w/Engineered Plastic Dial Case
C	4-1/2" Round Dial w/Engineered Plastic Dial Case
E	3-1/2" Round Dial w/Anodized Aluminum Dial Case
G	4-1/2" Round Dial w/Anodized Aluminum Dial Case
J	6" Round Dial w/Engineered Plastic 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
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. & Aluminum Gauge Body)*
8	1/4" FNPT End Connections *(2000 PSIG SWP for S.S. & Aluminum Gauge Body)*
9	Special ***(Un-coded Options)***

Model 142 - continued

6	Additional Options
O	NONE
A	Reversed High / Low Process Connections. *(Not available with T or W transmitter options)*
E	Two (2) 1/4-20 Mounting Holes
F	Carbon Steel 2" Pipe Mounting Kit *(Not available with reverse port switch option)*
G	Stainless Steel 2" Pipe Mounting Kit *(Not available with reverse port switch option)*
K	1/2" FNPT Stainless Steel Adapters *(Not available with end connections)*
L	Liquid Fill *(Glycerin Fill Standard) (2) (Not available with shatterproof glass lens)*
M	Maximum Indicator Follower Pointer *(Not available w/3-1/2", 6" Dial or Liquid fill options) (Not available with shatterproof glass lens)*
N	NACE Available for Aluminum & Stainless Steel Gauge Bodies only. *(1,500 PSIG SWP)*
Q	CRN (Canadian Registration Number) *(1)*
R	Special 54 mm Port Spacing for direct mount manifolds.
S	Shatter Proof Glass Lens *(4-1/2" available with "G" option Aluminum Dial Case only)(Not available with liquid fill option)*
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 *(Not available with back connections)*
X	Chemical Seals
Z	Special ***(Un-coded Options)***
	(1) 1375 PSIG (95 bar) max. Working Pressure for Aluminum , Brass and Stainless steel Bodies for CRN Option
	(2) Silicone Fill available - please contact factory
	NOTE: Not All Options Available in Combination with other Options

7	Electrical Configurations (CE and ROHS marked, except T & W)
O	None
A	One (1) Reed Switch in NEMA 4X/IP66 Enclosure
B	Two (2) Reed Switches in NEMA 4X/IP66 Enclosure
E	One (1) Reed Switch in NEMA 4X/IP66 Aluminum Enclosure, Division 2 Hazardous Locations **(1)(2)**
F	Two (2) Reed Switches in NEMA 4X/IP66 Aluminum Enclosure, Division 2 Hazardous Locations **(1)(2)**
T	4-20 mA Transmitter in NEMA-4X/IP66 aluminum enclosure **(3)**
W	4-20 mA Transmitter in general purpose enclosure, Division 2 Hazardous Locations **(1)(2)(3)**
Z	Special ***(Un-coded Options)***
	(1) Complete assembly 3rd Party Certified Class I, Div.2,Groups A, B, C, & D; Class II, Div.2, Groups F and G.
	(2) 1375 PSIG (95 bar) max. Working Pressure for E, F & W Hazardous locations electrical configurations
	(3) 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 *(Switch adjustable range of 15-95%)*
B	SPST, 25W, 0.5 Amp., 230 VAC/VDC *(Normally Open) (Switch adjustable range of 15-95%)*
T	4-20 mA Transmitter (8-28 VDC Loop Power) *(± 2% Accuracy from 20-100% of scale, Ascending)*

Standards: Model 140-142 gauges either conform to and/or are designed to the requirements of the following standards:

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