

Mid-West[®] Instrument

Your Quality Choice For Diaphragm Type Differential Pressure Gauges & Switches



DIFFERENTIAL PRESSURE GAUGES & SWITCHES FOR EVERY NEED



Mid-West Instrument has been serving a variety of industries (power, chemical, petro chemical, HVAC, water, filtration) for over 45 years. Over 150,000 diaphragm type units have been produced bearing the Mid-West name or private branded for our OEM customers!

Mid-West's forte is flexibility and quick response. Standard configuration can be customized and modified to suit a customer's need for easy installation or retrofit.

Differential pressure is sensed by the movement of an elastomer diaphragm against a precision calibrated range spring. The change in position of the diaphragm in response to the change in Differential Pressure moves an internal magnet. This magnet, in turn, causes a rotary magnet external to the gauge body to rotate. This rotary magnet has a pointer attached which indicates the differential pressure on the dial.

Diaphragm type Differential Pressure gauges are available with one or two hermetically sealed reed switches. The switches are adjustable (see table for the adjustment range) within a defined percentage of the full scale range of the gauge and are available in SPDT and SPST, normally open configurations for various load/power ratings. The switches can be set to activate or deactivate on rising or falling pressure. Switches are "CE" marked per the EU low voltage directive.

All Mid-West diaphragm-type differential pressure gauges can be configured for use in hazardous locations. All hazardous location switches are both CSA and UL listed. The CSA & UL listings are for the entire assembly and not just the enclosure. See our website at www.midwestinstrument.com or contact us at 1-800-648-5778 for specific information and ratings on all available models.



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www.midwestinstrument.com

A World Leader in Differential Pressure Gauges & Switches

MODEL 130

Lowest Range Gauge



- 4-1/2" Dial
- ASME B40.100 Accuracy, Grade B ($\pm 3-2-3\%$ FS Ascending 0-5" H₂O through 0-15 PSID)
- Wide Material Selection (Aluminum, Brass, Hastelloy C, Glass Reinforced Engineered Plastic & 316/316L Stainless Steel)
- Wide Range of Elastomers
- Wide Selection of Switching Options €€

MODEL 140

High Range Gauge



- Ranges from 0-25 PSID through 0-100 PSID
- ASME B40.100 Accuracy, Grade B ($\pm 3-2-3\%$ FS Ascending 0-25 PSID through 0-100 PSID)
- Available with Aluminum, Brass or 316/316L Stainless Steel Bodies
- Wide Range of Elastomers
- Wide Selection of Switching Options €€

COMMON TO ALL DIAP

Simple Rugged Compact Design • Full Overrange Protection to Maximum

No Pressure Under The Lens • 2½" and 4½" Plastic Dial Assemblies

Shatter Resistant Lens • Fully Gasketed Gauge Face Weather/Rust Resistant

MODEL 141

Standard Range Gauge



- Ranges from 0-50" H₂O through 0-25 PSID
- ASME B40.100 Accuracy, Grade B ($\pm 3-2-3\%$ FS Ascending 0-15 PSID through 0-25 PSID)
- ASME B40.100 Accuracy, Grade D ($\pm 5\%$ FS Ascending 0-50" H₂O through 0-400" H₂O)
- Available with Aluminum, Brass or 316/316L Stainless Steel Bodies
- Wide Range of Elastomers
- Wide Selection of Switching Options $\text{C}\epsilon$

MODEL 142

Low Range Gauge



- Ranges from 0-20" H₂O through 0-25 PSID
- ASME B40.100 Accuracy, Grade B ($\pm 3-2-3\%$ FS Ascending 0-20" H₂O through 0-25 PSID)
- Available with Aluminum, Brass or 316/316L Stainless Steel Bodies
- Wide Range of Elastomers
- Wide Selection of Switching Options $\text{C}\epsilon$

DIAPHRAGM GAUGES:

Maximum Working Pressure • Private Label Products - Custom Dials
Materials • 3½" and 4½" Anodized Aluminum Dial Assemblies
Rugged Construction Standard (Conforms to NEMA-4X/IP65)

DIAPHRAGM GAUGE SPECIFICATIONS

	130	140	141	142
Differential Pressure Range	0-5" H ₂ O (0-12.4 mbar) to 0-400" H ₂ O (0-1 bar)	0-25 PSID (0-1.7 bar) thru 0-100 PSID (0-7 bar)	0-50" H ₂ O (0-125 mbar) thru 0-25 PSID (0-1.7 bar)	0-20" H ₂ O (0-50 mbar) thru 0-25 PSID (0-1.7 bar)
Accuracy	±3-2-3% of Full Scale	±3-2-3% of Full Scale Ascending (Except ±5% for model 141 from 0-50" H ₂ O through 0-399" H ₂ O Ascending)		
Dial Size	4-1/2"	2-1/2", 3-1/2", 4-1/2"		
Safe Working Pressure	300 PSI w/G.R. Engineered Plastic 500 PSI w/all other Body Materials	0-3000 PSI For Aluminum and Stainless Steel Bodies 0-1500 PSI for Brass Bodies		
Proof Pressure	Two Times Safe Working Pressure			
Materials of Construction Body	G.R. Engineered Plastic, Aluminum, Brass, 316/316L Stainless Steel	Aluminum, Brass, 316/316L Stainless Steel		
Materials of Construction Internals	316/316L Stainless, Teflon, Acetal			
Switch Options	Option A	Option A or B		
Electrical Enclosures	Weather-resistant NEMA 4X/IP65 or NEMA 7			

SWITCHING INFORMATION STANDARD HERMETICALLY SEALED REED SWITCH RATINGS (RESISTIVE LOAD)

Type	SPDT	SPST (Normally Open)
Option	A	B (Not Available on the Model 130)
Power*	3 W	25 W
Max. Current	0.25 Amps	0.5 Amps
Max. Voltage	125 VAC/VDC	240 VAC/VDC
Setting** (F.S.)	10% - 90% for 140/141; 15% - 95% for 142	10% - 90% for 140/141; 15% - 95% for 142
Hysteresis (Max/Nom)	10% / 5% Full Scale	15% / 8% Full Scale
Repeatability	1% F.S.	1% F.S.
Leads (Model 130 Only) Model 140, 141, 142 Has a terminal strip.	Three 26 Gauge 24" Long Color Coded per switch	Seven Position Terminal Strip Interface

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

REED SWITCH POWER RELAY FOR HIGH LOADS

For loads above the switch rating, Mid-West Power Relay 1000TR, or an equivalent relay should be used. It may be used to control loads to 10 amps. The 1000TR is mounted on a standard 4" square junction box cover.

STANDARDS: All diaphragm differential pressure gauges/switches either conform to and/or are designed to the requirements of the following standards:

ASME B1.20.1
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

TOTALLY INTEGRATED DESIGN, MANUFACTURING & TESTING FACILITY

Mid-West Instrument in Sterling Heights, MI has an experienced staff of engineers and technicians in many disciplines. The latest technology is used for integrating the design, engineering, testing, manufacturing and assembly of Mid-West's line of precision instruments.

CUSTOMER ORIENTED STAFF: Mid-West's staff of experienced engineers and technical personnel work with our customers to solve their most challenging custom gauge requirements.

ENGINEERING & CUSTOM DESIGN: The latest CAD system software is used to develop original as well as custom gauges for Mid-West's customers.

QUALITY SYSTEM CERTIFICATION: Mid-West's quality system is 3rd party certified by QMI in accordance with CSA B51-03 Category F. The result of this quality assurance program is a five (5) Year Product Warranty ... the best in the industry!

ASSEMBLY & TESTING: Mid-West utilizes a wide range of custom fixtures to meet its diverse range of standard and custom gauge assembly requirements.

MANUFACTURING: State-of-the-art manufacturing systems are used to reach the precision tolerances of Mid-West's full line of gauge products.

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