

# 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 500,000 piston 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 configurations can be customized and modified to suit a customer's need for easy installation or retrofit.

Differential pressure is sensed by the movement of a precisely ground floating piston/magnet in a precision bore against a calibrated spring. Any variation in pressure on either side of the piston/magnet will cause the magnet to move proportionally to the change in differential pressure. A rotary pointer magnet located close to the internal magnet but outside the pressure housing, follows the movement of the piston magnet and indicates differential pressure on the dial.

Piston-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 or normally closed 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.

The model 120 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](http://www.midwestinstrument.com) or contact us at 1-800-648-5778 for specific information and ratings on all available models.

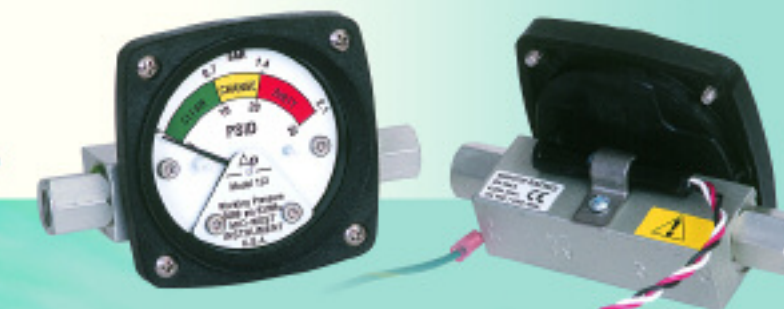


## MODEL 120 Standard Range Gauge

- ASME B40.100 Accuracy Grade B ( $\pm 3-2-3\%$  Ascending)
- Ranges from 0-5 PSID to 0-110 PSID (0-0.35 bar to 0-7 bar)
- Wide Material Selection (Aluminum, Brass, 316/316L SS, Aluminum-Bronze and Monel)
- Center Zero (Bi-Directional) Available
- Wide Selection of Switching Options

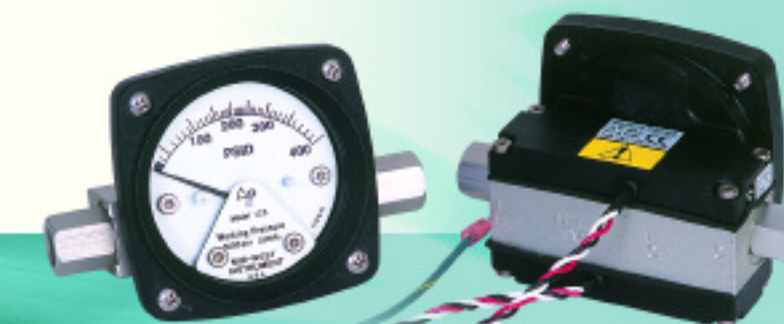


## MODEL 122 Standard Range Indicator



- ASME B40.100 Accuracy Grade D ( $\pm 5\%$  Ascending)
- Ranges from 0-5 PSID to 0-110 PSID (0-0.35 bar to 0-7 bar)
- Aluminum Construction
- Switch Options Available

## MODEL 123 High Range Gauge



- ASME B40.100 Accuracy Grade B ( $\pm 3-2-3\%$  Ascending)
- Ranges from 0-150 PSID to 0-400 PSID (0-10 bar to 0-27 bar)
- Aluminum or 316/316L SS End Connected Construction
- Switch Options Available

**Mid-West<sup>®</sup> Instrument** Toll Free: 1-800-648-5778  
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[www.midwestinstrument.com](http://www.midwestinstrument.com)

**A World Leader in Differential Pressure Gauges & Switches**

### COMMON TO ALL PISTON GAUGES:

Simple Rugged Compact Design • Full Overrange Protection to Maximum Working Pressure • Private Label Products - Custom Dials  
No Pressure Under The Lens • 2½" and 4½" Plastic Dial Assemblies • 3½" and 4½" Anodized Aluminum Dial Assemblies  
Shatter Resistant Lens • Fully Gasketed Gauge Face Weather/Rust Resistant Construction Standard (Conforms to NEMA-4X/IP65)

## PISTON GAUGE SPECIFICATIONS

	120	122	123
<b>Differential Pressure Range</b>	0-5 P.S.I.D. to 0-110 P.S.I.D.	0-5 P.S.I.D. to 0-110 P.S.I.D.	0-150 P.S.I.D. to 0-400 P.S.I.D.
	Available in a variety of equivalent ranges		
<b>Accuracy</b>	± 3-2-3% of Full Scale	± 5% of Full Scale	± 3-2-3% of Full Scale
	All Accuracies are Based on Ascending Readings (Without Maximum Follower Pointer)		
<b>Dial Size</b>	2 1/2" Round (Standard), 3 1/2" Round (Optional), 4 1/2" Round (Optional)		
<b>Working Pressure</b>	6000 P.S.I.G. (400 BAR) Aluminum and 316/316L SS 5000 P.S.I.G. (340 BAR) Aluminum-Bronze and Monel	5000 P.S.I.G. (340 BAR)	5000 P.S.I.G. (340 BAR)
<b>Proof Pressure</b>	12,000 PSI (120A, 120S) 10,000 PSI (120M and 120N)	10,000 PSI	10,000 PSI
<b>Materials of Construction Body</b>	Aluminum, 316/316L Stainless Steel, Aluminum-Bronze and Monel	Aluminum	Aluminum, 316/316L Stainless Steel, Aluminum-Bronze and Monel
<b>Materials of Construction Internals</b>	316 Stainless Steel (Standard) Monel (Aluminum-Bronze and Monel bodies)		
<b>Switch Options</b>	SPDT 3W, 125 VAC/VDC, 0.25 Amps SPST 60 W, 240 VAC/VDC, 3 Amps		
<b>Electrical Enclosures</b>	Weather-resistant NEMA 4X/IP65 or NEMA 7	None	Weather-resistant NEMA 4X/IP65 or NEMA 7

### SWITCHING INFORMATION

#### STANDARD HERMETICALLY SEALED REED SWITCH RATINGS (RESISTIVE LOAD)

Type	SPDT	SPST NO	SPDT
<b>Option</b>	A	E	H
<b>Power*</b>	3 W	60 W	60 W
<b>Max. Current</b>	0.25 Amps	3.0 Amps	1.0 Amps
<b>Max. Voltage</b>	125 VAC/VDC	240 VAC/240 VDC	240 VAC/VDC
<b>Setting** (F.S.)</b>	10% to 90%	25% to 100%	25% to 100%
<b>Hysteresis (Max/Nom)</b>	10% / 5% Full Scale (F.S.)	15% / 8% Full Scale (F.S.)	25% / 13% Full Scale (F.S.)
<b>Repeatability</b>	1% F.S.	1% F.S.	1% F.S.
<b>Leads</b>	(3) 22 Awg, 24"	(2) 22 Awg, 24"	(3) 22 Awg, 24"

\*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 Model 120 Series differential pressure gauges/switches 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

### 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.

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

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## YOUR QUALITY CHOICE FOR PISTON TYPE DIFFERENTIAL PRESSURE GAUGES & SWITCHES

