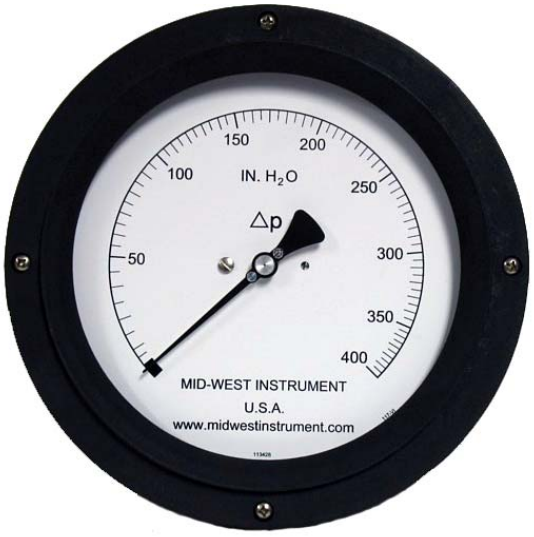
Mid-West® Instrument

"Diaphragm Type"
Differential Pressure Gauge & Switch
Model 107



Features:

- Total separation of high and low pressures by use of a Convoluted Elastomer Diaphragm.
- Over range protection to full rated working pressure.
- Body Materials: Aluminum, Cast Brass, Plated Carbon Steel, 316L Stainless Steel or Engineered Plastic
- Stainless steel torque tube and internal metal parts
- ¼" FNPT Dual Top & Bottom Process Connections Standard
- Elastomers: Buna-N, Viton and Ethylene Propylene
- Weather-resistant construction standard.
- Shatter resistant acrylic lens.
- Dial type and Sizes: Black on White 6" Std, 4-1/2" Optional
- DP Ranges available in: Inches H2O, PSID, bar, and Kpa
- Available with Square Root dials for flow measurement
- Multiple mounting options available
- Temperature Limits: -15°F (-26°C) to +185°F (+85°C)

The **"NEW"** Mid-West Instrument Model 107 combines the field proven torque tube from our Models 105, 106 & 116, with the elastomer diaphragm technology or our Models 130, 140 & 142.

Model 107 elastomer diaphragm design provides a high over low and low over high over-range protection to the full rated working pressure of the instrument. Rated working pressures are dependant on body materials chosen and will range from 300 PSIG to 1,000 PSIG. The Mid-West torque tube & movement provides a full 270° pointer rotation.

Model 107 is available in a wide variety of body materials and is available with Buna-N, Viton or Ethylene Propylene elastomer options consisting of 316 stainless steel and engineered plastic internal wetted parts, making our new Model 107 ideal for many applications including tank Level measurement, flow measurement as well as everyday differential pressure applications.

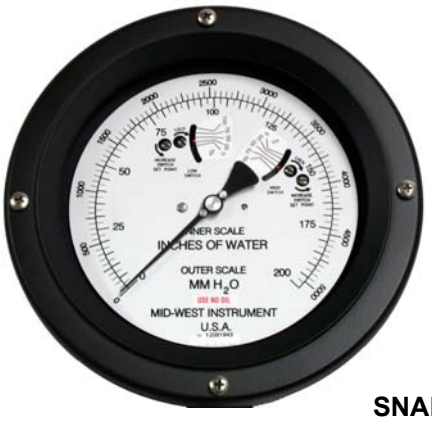
Common Applications: Filter/Strainer Monitoring, Compressed Air, Hydraulic, Refrigerant, Pump Performance Testing, Heat Exchanger Pressure Drop Monitoring, Water Treatment Applications, Tank Level Monitoring Horizontal or Vertical, Flow Monitoring & Balancing. Ideally suited for use on dissimilar fluids and wet gas or fluids with a high concentration of solids, etc.

"A World Leader
in Differential Pressure Gauges,
Switches & Transmitters

Back Shot
Cast Brass Body

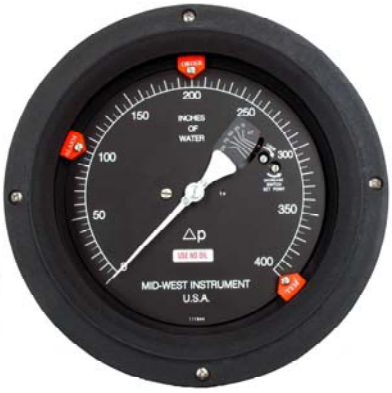
Model	Accuracy	Min. ΔP Range	Max. ΔP Range	Max. Line Pressure PSIG	Optional Switches
107	±2%	0-70" H2O (0-3.0 PSID)	0-800" H2O (0-30 PSID)	ALM., C.S., S.S. = 1000 Brass = 500 Engineered Plastic = 300	1 or 2 Snap Acting Switches

“Diaphragm Type”
Differential Pressure Gauge
Switch Options
Model 107



Model 107
Dual Switch Unit

Model 107
Single Switch
Shown w/optional
Black Dial



SNAP ACTING MICRO-SWITCH for MODEL107
Range: 0-80”H2O(0-3.0 PSID) to 0-800”H2O(0-30 PSID)

Model 107 can also be equipped with one ore two independently adjustable SPDT snap acting Micro-Switches which can be set on decreasing or on increasing pressure. A switch adjustment screw and a switch lock screw is accessible after removal of the lens and bezel (removal of 4 screws). Interface to the snap acting micro-switch is via color coded 18 AWG flying leads and a ½’ FNPT conduit connection. Snap acting Micro switches do not require input power to operate. **Switches available with 6” Diameter dial only.**

NOTE: Snap Acting Micro-Switch Requests for Bi-Directional Range Gauges must contact factory

NOTE: It is strongly recommended that a 3-Valve differential pressure manifold be used in plumbing your model 107 to your system. Properly used it should insure that your instrument is not over-ranged or damaged by pressure shocks during pressurization. It will later zeroing, ranging and calibration checking. It is a good practice to purge or flush the instrument loop prior to connecting the instrument.

Electrical Switch Configurations
One (1) Micro-Switch in Weather Resistant Enclosure (0-80" to 0-800” H2O only) Accuracy ±2% Full Scale
Two (2) Micro-Switches in Weather Resistant Enclosure (0-80" to 0-800” H2O only) Accuracy ±4% Full Scale 0-80" - 199" H2O / 0-200" - 800" H2O Accuracy ±2% Full Scale
One (1) Micro-Switch in Weather Resistant Condulet Enclosure (0-80" to 0-800” H2O only) Accuracy ±2% Full Scale Ascending
Two (2) Micro-Switches in Weather Resistant Condulet Enclosure Accuracy ±4% Full Scale Ascending 0-80" - 199" H2O / 0-200" - 800" H2O Accuracy ±2% Full Scale Ascending
"Output Option" (Resistive Load)
Micro Switch Electrical Interface:
18", 18 Awg, 600 V, 105°C Color coded wire leads from 1/2" FNPT Connection
SPDT Micro-Switch Contact Ratings:**(MAX)** 4 Amps @ 30 VDC / 3 Amps @ 240VAC / 5 Amps @ 12 VAC

Proof Pressure: Two times rated working pressure at ambient temperature

Temperature Limits: -15°F (-26°C) to +185°F (+85°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 107 gauge either conforms to and/or is designed to the requirements of the following standards:

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

Mid-West® Instrument

Standard Dial Ranges: Model 107

Range Type				
IN H_2O	PSID	Kpa	bar	Flow Dials
0-70”	0-5	0-35	0-0.35	Please Contact Factory
0-100"	0-10	0-70	0-0.7	
0-135"	0-15	0-100	0-1.0	
0-150"	0-20	0-140	0-1.4	
0-200"	0-25	0-172	0-1.75	
0-300"	0-30	0-200	0-2.0	
0-400"				
0-600”				
0-800”				
Available Multipliers for Flow Dials: X10, X100, X1000, and X10,000				

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
107	0-70” H2O (0-1.0 PSID)	0-800” H2O (0-30 PSID)

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SAE J514
UL Std. No. 50,508 and 1203

6500 Dobry Dr. • Sterling Heights, MI 48314 USA • Tel: 800-648-5778 Tel: 586-254-6500 Fax: 586-254-6509
Web Site: www.midwestinstrument.com • Email: sales@midwestinstrument.com

Standard Model Specifications: 107-AJ-00-OO

1000 PSIG Working Pressure, Aluminum body, 316L Stainless Steel Internal Metal Parts,
Buna-N Diaphragm and Seals, ¼" FNPT Dual Top & Bottom Connections,
6" Round dial, Engineered Plastic Case with Shatter Resistant Acrylic Lens
Accuracy ±2% Full Scale (Ascending)

Mid-West Instrument
1-800-648-5778

Range 0-70" H2O to 0-800" H2O (0-3.0 PSID to 0-30 PSID)

1			2	3	4	5	6				7	8
1	0	7										

Basic Model

Range:_____

Model 107 w/sgl switch & optional black dial

Model 107 dual switch

2	Material (Not All Options Available in Combination with other Options)
A	1000 PSIG, Aluminum Body / Stainless Steel Internals
B	500 PSIG, Cast Brass Body / Stainless Steel Internals
C	1000 PSIG, Plated Carbon Steel Body / Stainless Steel Internals
P	300 PSIG, Engineered Plastic Body / Stainless Steel Internals
S	1000 PSIG, 316 Stainless Steel Body / Stainless Steel Internals
Z	Special ***(Un-coded Options)***
3	**Dial Size**
C	4-1/2" Round, Black on White Dial w/Engineered Plastic Dial case **(not available with switches)**
J	6" Round, Black on White Dial w/Engineered Plastic Dial case **(Standard)**
Z	Special ***(Un-coded Options)***
4	**Seal & Diaphragm Materials**
0	Buna-N
1	Viton
5	Ethylene Propylene
9	Special ***(Un-coded Options)***
5	**Process Connections**
0	1/4" FNPT Dual Top & Bottom Connections **(Standard)**
9	Special ***(Un-coded Options)***
6	**Additional Options**
O	NONE
F	Carbon Steel 2" Pipe Mounting Kit **(not available with "P" body option)**
H	1/4" Carbon Steel Compression Tube Fittings
I	1/4" Stainless Steel Compression Tube Fittings
K	1/2" FNPT Stainless Steel Adapters
N	NACE **(Available for Aluminum & Stainless Steel Gauge Bodies only)**
S	Shatter Proof Glass Lens
T	Oxygen Cleaning
U	Stainless Steel Tag with S.S. Wire
V	Stainless Steel Tag and S.S. Screw **(not available with "P" body option)**
W	Wall Mount Kit
Z	Special ***(Un-coded Options)***

Standard Model Specifications – continued Model 107

7	Electrical Configurations (Available with 6" Dial Only)
G	One (1) Micro-Switch in Weather Resistant Enclosure (0-80" to 0-800" H2O only) Accuracy ±2%
H	Two (2) Micro-Switches in Weather Resistant Enclosure (0-80" to 0-800" H2O only) 0-80" - 199" H2O Accuracy ±4% / 0-200" H2O and above Accuracy ±2% **(1)**
J	One (1) Micro-Switch in Weather Resistant Condulet Enclosure (0-80" to 0-800" H2O only) Accuracy ±2%
K	Two (2) Micro-Switches in Weather Resistant Condulet Enclosure 0-80" - 199" H2O Accuracy ±4% / 0-200" H2O and above Accuracy ±2% **(1)**
Z	Special ***(Un-coded Options)***
	(1) Accuracies & repeatability values for two switch units are based upon one switch set low (approximately 25% for FSR) and one switch set high
8	**"Input Options" Electrical Specifications (Select (1) input and (1) output option)**
N	No Input Required for Snap Acting Micro-Switch
Z	Special ***(Un-coded Options)***
	"Output Options" (Resistive Load)
	Micro Switch Electrical Interface: 18", 18 Awg, 600 V, 105°C / Color coded wire leads from 1/2" FNPT Connection
M	SPDT Micro-Switch Contact Ratings: **(MAX)** 4 Amps @ 30 VDC / 3 Amps @ 240 VAC / 5 Amps @ 120 VAC
Z	Special ***(Un-coded Options)***
	Factory preset switches at no charge (specify setting)

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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.

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