

## Standard Model Specifications: 116-BB-10-(AP)O

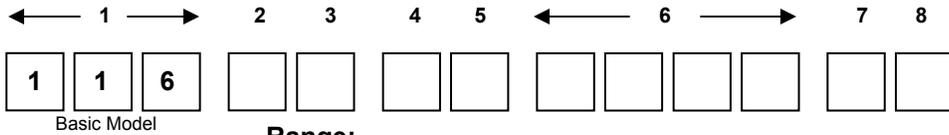
500 PSIG Working Pressure, Brass Body, Stainless Steel Bellows, Stainless Steel Internals  
 Viton Seals, 1/4" FNPT Dual Top & Bottom Process Connections, 6" Uni-Directional Round Dial,  
 Brass snubber fittings mounted in bottom process connections, Panel mount gauge front  
 Weather Resistant Engineered Plastic Case with Shatter Resistant Acrylic Lens,  
 Accuracy ±1% Full Scale (Ascending)

**Mid-West Instrument**

**1-800-648-5778**

**Range 115: 0-10" H<sub>2</sub>O to 0-69.9" H<sub>2</sub>O (0-125 mbar to 0-2.5 PSID)**

**Range 116: 0-70" H<sub>2</sub>O to 0-800" H<sub>2</sub>O (0-2.5 PSID to 0-30 PSID)**



2	Material
B	500 PSIG, Brass Body, Stainless Steel Internals
Z	Special ( <i>Un-coded Options</i> )
3	Dial Size Type
B	Accuracy ±1% Full Scale Uni-Directional, White on Black Dial
W	Accuracy ±1% Full Scale Uni-Directional, Black on White Dial
Z	Special ( <i>Un-coded Options</i> )
4	Seal Materials
0	Buna-N
1	Viton®-A Registered Trademark of Dupont ( <b>Standard</b> )
5	Ethylene Propylene
9	Special ( <i>Un-coded Options</i> )
5	Process Connections / Orientation
0	1/4" FNPT Dual Top & Bottom (Hi port on the right side when facing the dial) ( <b>Standard</b> )
1	1/4" FNPT Dual Top & Bottom (Hi port on the left side when facing the dial)
9	Special ( <i>Un-coded Options</i> )
6	Additional Options
O	None
A	Brass snubber fittings mounted in bottom process connections ( <b>Standard</b> )
B	Brass snubber fittings mounted in top process connections
D	3/4" NPT S.S. Stub Mount Bracket
F	Carbon Steel 2" Pipe Mounting Kit
J	3-Valve S.S. Mini-Manifold #113343 mounted to bottom process connections ( <b>1/4" FNPT Connections</b> )
K	3-Valve S.S. Manifold #107470 mounted to bottom process connections ( <b>1/2" FNPT Connections</b> )
P	Panel Mount Kit
Q	CRN ( <b>Canadian Registration Number</b> )
S	Shatter Proof Glass Lens
T	Oxygen Cleaning
U	Stainless Steel Tag with S.S. Wire
Z	Special ( <i>Un-coded Options</i> )

## Standard Model Specifications – continued Model 115/116

7	Electrical Configurations
<b>O</b>	None
<b>A</b>	One (1) Switch in Weather Resistant Enclosure <b>Accuracy ±2% (Descending Pressure)</b>
<b>B</b>	Two (2) Switches in Weather Resistant Enclosure <b>Accuracy ±4%</b> 0-80" – 199" H2O only. (Descending Pressure) <b>Accuracy ±2%</b> 0-200" H2O and above.. (Descending Pressure)
<b>C</b>	One (1) Switch in Weather Resistant Housing with Condulet Enclosure <b>Accuracy ±2% (Descending Pressure)</b>
<b>D</b>	Two (2) Switches in Weather Resistant Housing with Condulet Enclosure <b>Accuracy ±4%</b> 0-80" – 199" H2O only. (Descending Pressure) <b>Accuracy ±2%</b> 0-200" H2O and above.. (Descending Pressure)
<b>Z</b>	Special ( <b>Un-coded Options</b> )
<b>Accuracies and repeatability values for 2 switch units are based upon one switch set low (approximately 25% for FSR) and one switch set High approx. 75% FSR).</b>	
8	Electrical Specifications
<b>A</b>	SPDT Micro Switch High Current Contact Ratings.(MAX): 4 Amps Maximum @ 30 VDC 3 Amps maximum @ 240 VAC 5 Amps @ 120 VAC
<b>Z</b>	Special ( <b>Un-coded Options</b> )
<b>Electrical Interface:</b> 18", 18 Awg, 600 V, 105°C / Color coded wire leads from 1/2" FNPT Connection Operating Temperature: -20° F to +185° F	
<b>Factory preset switches at no charge (specify setting)</b>	

### The Mid-West Instrument Advantage:

- “Engineered Plastic” gauge front and optional stainless steel body bolts provide superior corrosion resistance.
- Up to a 30 lb. weight savings over competitive range gauges
- Easier and less labor to panel mount
- Dry gauge design with no internal liquid fill
- No gauge damage/accuracy loss caused by liquid fill expansion/contraction when exposed to temperature shocks.
- Low range capability
- Industry best lead time reduces inventory requirements



**MADE IN USA**



# Mid-West<sup>®</sup> Instrument

## “Diaphragm Style Tank Level” Differential Pressure Gauge & Switch Model 117

### Features:

- Total separation of high and low pressures by use of a Convuluted Elastomer Diaphragm.
- Over range protection to full rated working pressure.
- Body Materials: Cast Brass
- Stainless steel torque tube and internal metal parts
- ¼” FNPT Dual Top & Bottom Process Connections (Std)
- Elastomers: Buna-N, Viton and Ethylene Propylene
- Weather-resistant construction standard.
- Shatter resistant acrylic lens.
- Dial type and Size: 6” Black on White Dial (Std)
- Temperature Limits: -15°F (-26°C) to +185°F (+85°C)



Model 117  
0-100” H<sub>2</sub>O

The “**NEW**” Mid-West Instrument Model 117 combines the field proven torque tube from our Models 105, 106 & 116, with the elastomer diaphragm technology of our Models 130, 140 & 142.

### Range: 0-70” H<sub>2</sub>O to 0-800” H<sub>2</sub>O (2.5 PSID to 30 PSID)

Model 117 elastomer diaphragm design provides a high over low and low over high over-range protection to the full rated working pressure of 500 PSIG. The Mid-West torque tube & movement provides a full 270° pointer rotation.

Model 117 has a cast brass gauge body 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 117 ideal for Tank Level measurement and everyday differential pressure applications.

Model 117 comes standard with ¼” FNPT Dual top and bottom connections with additional options available. The dial size is 6” diameter with black lettering on a white dial. (black dial with white lettering optional)



### SNAP ACTING MICRO-SWITCH MODEL117 Range: 0-80” to 0-800” H<sub>2</sub>O

Model 117 can also be equipped with one or 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.

Model	Accuracy	Min. ΔP Range	Max. ΔP Range	Max. Line Pressure	Optional Switches
117	±2%	0-70” H <sub>2</sub> O (0-2.5 PSID)	0-800” H <sub>2</sub> O (0-30 PSID)	500 PSIG	1 or 2 Snap Acting Switches

# Mid-West<sup>®</sup> Instrument

## Standard Dial Ranges: Model 117

Range Type					
PSID	H2O	Kpa	Bar	Dual Scale IN/CM	CM & MMH2O
0-3	0-70"	0-20	0-.35	0-80 IN H2O/0-200 CM H2O	0-200 CM H2O
0-5	0-80"	0-35	0-.7	0-100 IN H2O/0-250 CM H2O	0-380 CM H2O
0-10	0-100"	0-70	0-1.0	0-150 IN H2O/0-380 CM H2O	0-500 CM H2O
0-15	0-120"	0-100	0-1.4	0-200 IN H2O/0-500 CM H2O	0-1000 CM H2O
0-20	0-150"	0-140	0-1.75	0-300 IN H2O/0-750 CM H2O	0-1024 CM H2O
0-25	0-200"	0-172	0-2.0	0-400 IN H2O/0-1000 CM H2O	0-1250 CM H2O
0-30	0-250"	0-200		0-500 IN H2O/0-1270 CM H2O	0-1500 CM H2O
	0-300"			0-600 IN H2O/0-1500 CM H2O	0-1524 CM H2O
	0-400"			0-700 IN H2O/0-1800 CM H2O	0-2500 MM H2O
	0-450"			0-800 IN H2O/0-2050 CM H2O	0-3,000 MM H2O
	0-500"				0-5,000 MM H2O
	0-600"				0-7,600 MM H2O
	0-700"				0-10,000 MM H2O
	0-800"				0-12,700 MM H2O
					0-15,000 MM H2O

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 117 Range Conversions						
" H2O	CM H2O	MM H2O	PSID	Bar	mBar	Kpa
0-70	0-180	0-1775	0-2.5	0-.17	0-174	0-17.3
0-80	0-200	0-2032	0-2.9	0-.20	0-200	0-20
0-100	0-250	0-2540	0-3.6	0-.25	0-250	0-25
0-150	0-380	0-3810	0-5.4	0-.37	0-373	0-37
0-200	0-500	0-5080	0-7.2	0-.50	0-498	0-50
0-300	0-760	0-7620	0-10.8	0-.75	0-747	0-75
0-400	0-1000	0-10,200	0-14.5	0-.99	0-996	0-100
0-500	0-1270	0-12,700	0-18.0	0-1.2	0-1245	0-124
0-600	0-1500	0-15,240	0-21.6	0-1.5	0-1494	0-150
0-700	0-1800	0-17,750	0-25.3	0-1.74	0-1740	0-174
0-800	0-2000	0-20,300	0-28.9	0-2.00	0-2000	0-200

**Proof Pressure:** Two times working pressure at ambient temperatures

**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 117 Series gauges either conform to and/or are designed to the requirements of the following standards:

ASME B1.20.1    CSA-C22.2 No.14    NEMA Std. No. 250  
 ASME B40.100    UL Std. No. 50    SAE J514

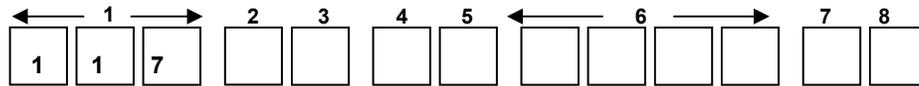
## Standard Model Specifications: 117-BB-10-(AP)O

500 PSIG Working Pressure, Brass Body,  
 Viton Seals & Diaphragm, Stainless Steel Internals  
 1/4" FNPT Dual Top & Bottom Process Connections, 6" Round Black on White Dial  
 Panel Mountable, Weather Resistant Engineered Plastic Dial Case  
 Shatter Resistant Acrylic Lens, Accuracy ±2% Full Scale (Ascending)

**Mid-West Instrument**

1-800-648-5778

Range: 0-70" H2O to 0-800" H2O (0-2.5 PSID to 0-30 PSID)



Basic Model

Range: \_\_\_\_\_



Model 117  
Single switch unit



Model 117  
w/optional white dial

<b>2</b>	<b>Material NOTE: (Not All Options Available in Combination with other Options)</b>
<b>B</b>	500 PSIG, Brass Body, Stainless Steel Internals
<b>Z</b>	Special ( <i>Un-coded Options</i> )
<b>3</b>	<b>Dial Size Type</b>
<b>B</b>	6" Engineered Plastic White on Black Dial ( <b>Standard</b> )
<b>W</b>	6" Engineered Plastic Black on White Dial
<b>Z</b>	Special ( <i>Un-coded Options</i> )
<b>4</b>	<b>Seal Materials</b>
<b>0</b>	Buna-N
<b>1</b>	Viton®-A Registered Trademark of Dupont ( <b>Standard</b> )
<b>5</b>	Ethylene Propylene
<b>9</b>	Special ( <i>Un-coded Options</i> )
<b>5</b>	<b>Process Connections / Orientation</b>
<b>0</b>	1/4" FNPT Dual Top & Bottom (Hi port on the right side when facing the dial) ( <b>Standard</b> )
<b>1</b>	1/4" FNPT Dual Top & Bottom (Hi port on the left side when facing the dial)
<b>9</b>	Special ( <i>Un-coded Options</i> )
<b>6</b>	<b>Additional Options</b>
<b>O</b>	None
<b>A</b>	Brass snubber fittings mounted in bottom process connections ( <b>Standard</b> )
<b>B</b>	Brass snubber fittings mounted in top process connections
<b>D</b>	3/4" NPT S.S. Stub Mount Bracket
<b>F</b>	Carbon Steel 2" Pipe Mounting Kit
<b>J</b>	3-Valve S.S. Model 113343 Mini-Manifold mounted to Gauge Body ( <b>1/4" FNPT Connections</b> )
<b>K</b>	3-Valve S.S. Model 107470 Manifold mounted to Gauge Body ( <b>1/2" FNPT Connections</b> )
<b>P</b>	Panel Mount Kit
<b>S</b>	Shatter Proof Glass Lens
<b>T</b>	Oxygen Cleaning
<b>U</b>	Stainless Steel Tag with S.S. Wire
<b>Z</b>	Special ( <i>Un-coded Options</i> )