

# Mid-West<sup>®</sup> Instrument

## MODEL 115/116

### Level Gauges & Switches for Tank Level Applications



*Audited & Approved  
Oxygen Cleaning  
Available....*



#### Switch Units

*Switch **Flags** can be precisely  
adjusted to switch set point for  
highly visible alarm indication*

*“Dry Gauge Design  
No Internal Liquid Fill”*

*Ability to create and  
design custom dials.*

*Mid-West can deliver tank level  
gauges in 4-6 weeks ARO.*

**INSTRUMENTS • CONTROLS • VALVES**

**ARCO**  
Engineering, Inc.  
SINCE 1954  
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Louisville, KY 40213

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**50 YEARS** experience in the field of supplying quality Differential Pressure Gauges.

Tank Level Indication applications are for stationary, over the road, and portable tanks.

Models 115/116 multiple diaphragm/bellows design provides a simple, compact, accurate, direct-acting, low range differential pressure indicator. Models 115/116 are equipped with a Bi-directional Over Pressure Relief Valve (OPV).

When the Differential Pressure exceeds 130% of the range the OPV equalizes the pressure between the Hi and Lo sides. 1/4" FNPT Dual top and bottom connections are provided as standard.

Models 115/116 is also equipped with a Micro adjust pointer, If necessary the pointer can be re-zeroed. Body is made of brass with 316 Stainless Steel internals. Viton Seals are standard with other elastomers available.



## **BENEFITS:**

- “Engineered Plastic” gauge front and stainless steel body bolts provide corrosion resistance in “over the road” trailers, outdoor or salt air environments.
- Up to a 30 lb. weight savings over competitive Liquid Helium range gauges
  - Allows more product to be transported in mobile trailers
  - Easier and less labor to panel mount
- Dry gauge design with no internal liquid fill
  - Eliminates costly clean up from liquid fill leaking and fouling the tank and system
  - No gauge damage/accuracy loss caused by liquid fill expansion/contraction when exposed to temperature shocks in cryogenic applications
- Low & High range capabilities
  - Ideal for He, Ar, O<sub>2</sub>, N<sub>2</sub>, and CO<sub>2</sub> tank level applications
  - For use on Stationary, Over the Road, and Portable tanks
- Industry best lead time reduces inventory requirements
- Adaptable to wide variety of mounting configurations
- Private Brand and Custom Dials available: *Single Scale, Dual Scale, and Tri-Scale*

**0-100" H<sub>2</sub>O / Single Scale  
White on Black Dial**



**0-10" H<sub>2</sub>O / Single Scale  
Black on White Dial**



**Ar, O<sub>2</sub>, N<sub>2</sub>  
Tri-Scale Dial**

## GAUGE SPECIFICATIONS

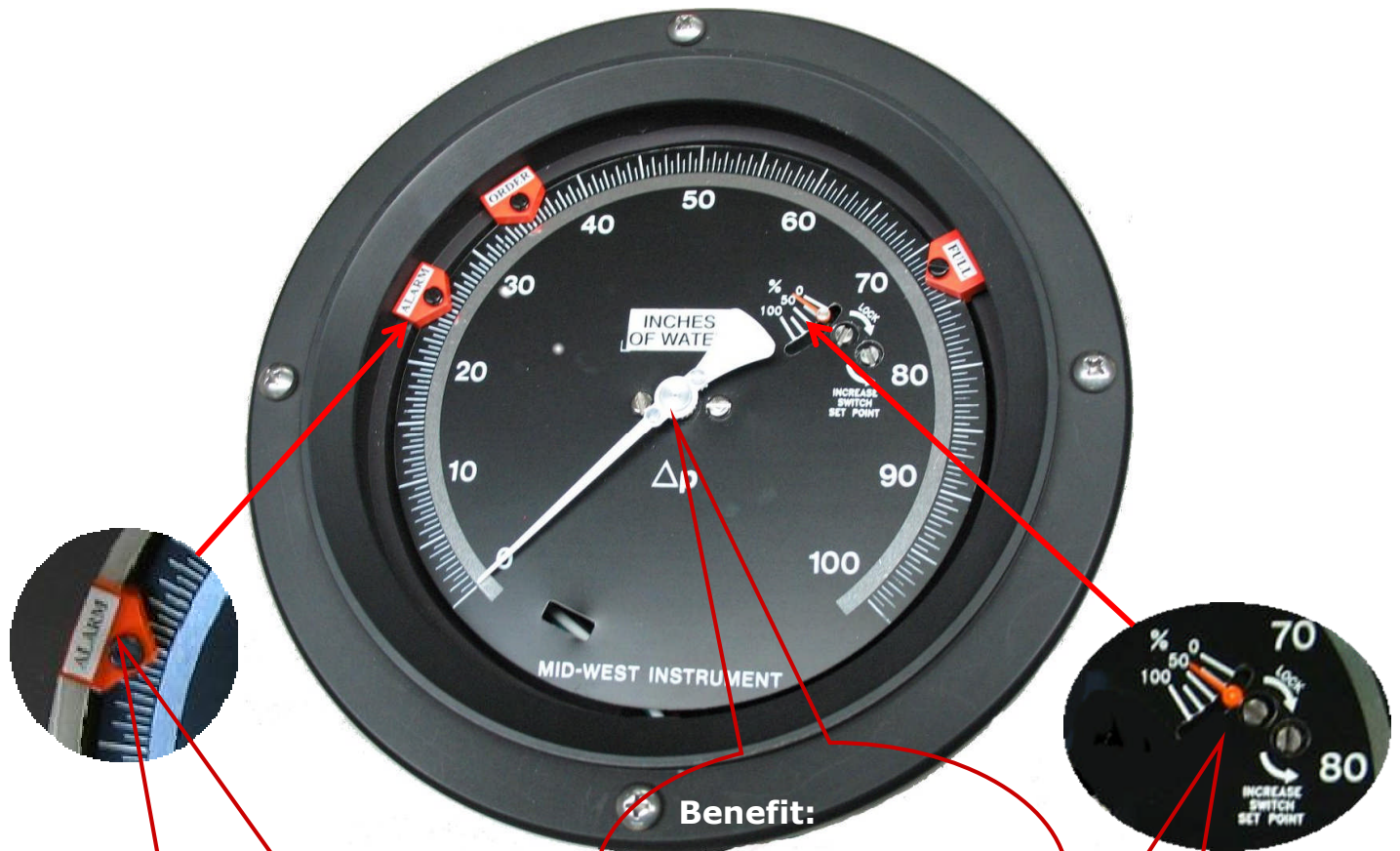
	<b>115</b>	<b>**116</b>
Accuracy	±1% of Full Scale	
DP Range	0-10" H <sub>2</sub> O to 0-50" H <sub>2</sub> O (25 mbar to 125 mbar)	0-50" H <sub>2</sub> O to 0-600" H <sub>2</sub> O (125 mbar to 1.5 bar)
Safe Working Pressure	1500 PSIG	500 PSIG (Standard) 1000 PSIG (Optional)
Body Material	Brass	Brass
Internals	316 S.S. Welded Multiple Diaphragm	316 S.S. Convuluted Bellows
Port	Dual Top and Bottom, 1/4" FNPT connections with optional snubbers	
Seals	Viton® Standard, other elastomers available	
Dial	6" Black dial with White lettering (White dial with Black lettering optional)	
Warranty	One Year	

**\*\*Model 116 Snap Acting Micro-Switch for Alarm (optional) 0-80" H<sub>2</sub>O & above.**

**Aluminum, Carbon Steel, & Stainless Steel Body Materials Available...  
Ask about Model's 105, and 106 ( SWP of 1,500 & 3,000 PSIG)**



# Tank Level / Industrial Gas Differential Pressure Micro-Switch



## Benefit:

**Switch Flags** - Can be precisely adjusted to switch set point for highly visible alarm indication.

## Benefit:

**Tamper Proof** - All adjustments require removal of the bezel access.

## Benefit:

1. **Switch Adjust** - Adjustable set point from 3% to 100 % of Full Scale on decreasing pressure.
2. **Switch Set Feedback** - Provides feedback of the approximate switch set point during adjustment of the switch.
3. **Switch Lock** - Locks Switch Set to prevent shift in set point due to vibration.

**1. Remove Bezel**



**2. Unlock Switch Adjust**

**3. Adjust switch to approximate alarm point using the switch set feedback.**

**4. Using the appropriate equipment & pressure source, precisely set the switch using the dial indicator.**



**5. Once the switch is adjusted to the desired alarm point, tighten the lock screw.**

**6. Loosen the screw on the switch flag and adjust to the precise alarm point.**



**7. Lock Switch Flag to provide a Highly Visible Alarm Point Indication.**



**8. Replace the Bezel**



## MICRO - SWITCH SPECIFICATION

### Model 116 Electrical 0-80" H<sub>2</sub>O and above

<b>Input Voltage:</b>	None Required		
<b>Set Pointers:</b>	Quantity Adjustment:	1 3% to 100% of Full Scale	With visual set point set on decreasing pressure
<b>Output(s)</b>	Contact(s) Contact Rating:	1 SPDT 4 Amps Maximum 3 Amps Maximum 5 Amps	@ 30 VDC @ 240 VAC @ 120 VAC
<b>Temperature:</b>	Operating:	-20°F to +185°F	
<b>Environment:</b>	Standard:	Weather-Proof Housing	NEMA 4
<b>Electrical Interface:</b>	Standard:	1/2", 18 Awg., 600 V 105C Color Coded Wire Leads	1/2" FNPT
<b>Gauge Accuracy:</b>	2%	Including Effects of the switch	
<b>Switch Repeatability:</b>	2%	Maximum	

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

**Temperature Limits:** -40°F (-40°C) to 200°F (93°F)

**Standards:**

ASME B1.20.1  
ASME B40.100

CSA-C22.2 No.14  
UL Std. No. 50

NEMA Std. No. 250  
SAE J514

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