ENVIROMENTAL SENSORS
INSTALLATION GUIDE

PD SERIES
Digital Pressure/Vacuum Gauge with Display and Voltage Output

Installer’s Specifications

Measurement Units: Selectable: PSI, Bar, kg/cm², ATM, in. Hg, in. H₂O
Accuracy** < ±0.5% of F.S., BFSL
Overrange Protection: 2x rated pressure
Burst Pressure: 5x rated pressure or 5000 PSI, whichever is less

Temperature Ranges:
Operating (Ambient) -10° to 70°C (15° to 158°F)
Storage -40° to 65°C (-40° to 150°F)

Thermal Limits:
Compensated Range 0° to 55°C (32° to 131°F)
IC Zero < ±1.5% of FS
IC Span < ±1.5% of FS
Connection: ¼” NPT, male
Power: 15 to 30 VDC
Housing: Polycarbonate
Environmental Protection: NEMA 4, IP65
Output: 0-5V/0-10V (selectable)

* in. H₂O units available on ≤250 psi range devices only
** Accuracy includes non-linearity, hysteresis and non-repeatability measured at 25°C/77°F

QUICK INSTALL

1. Plan for a 1/4” M-NPT connection or hose to a 1/4” fitting, in a location suitable for the gauge’s physical dimensions. Allow access to the display and keypad.

2. Thread the gauge onto the fitting provided in step 1. Apply tightening torque only to the metal wrench flats, not to the PD housing. Use a 5/8” wrench. Do not overtighten.

3. Wire the device. See the wiring diagram in this guide.

4. Remove the protective film from the gauge front.

5. Program the gauge.

NOTICE

- This product is not intended for life or safety applications.
- Do not install this product in hazardous or classified locations.
- Read and understand the instructions before installing this product.
- Turn off all power supplying equipment before working on it.
- The installer is responsible for conformance to all applicable codes.

PRODUCT IDENTIFICATION

Pressure Material Output
PD A V
50 = 0 to 50 psig = 17-4 SS = 0-5V/0-10V
100 = 0 to 100 psig
250 = 0 to 250 psig
500 = 0 to 500 psig
1000 = 0 to 1000 psig

DIMENSIONS

Front Side Rear
3.6” (90mm) 2.8” (72mm) 0.7” (17mm)
4.2” (106mm) 1.8” (46mm) 1.4” (36mm)
Wrench Flat
(Tighten with a 5/8” wrench at this spot. Do not tighten by twisting the plastic PD housing.)

Test Units Zero Calib
Digital Pressure Gauge

VERIS INDUSTRIES
http://www.veris.com
1-800-354-8556
1-503-598-4564
Digital Pressure Gauge
3.6” (90mm)
4.2” (106mm)
Test Units Zero Calib
Wrench Flat
(Tighten with a 5/8” wrench at this spot. Do not tighten by twisting the plastic PD housing.)
**DESCRIPTION**

PD Voltage Output digital pressure gauges are media isolated, so they can be used with any gas, liquid, or solid compatible with 17-4 PH stainless steel within the specified pressure range. The transducer consists of a one-piece, high-strength pressure sensor that uses no silicone oils, welds, O-rings, or seals. The sensor is coupled to a 0-5 V/0-10 V output (selectable) with internal display and keypad. The keypad controls setup and operation of the sensor as described below.

**INSTALLATION AND WIRING**

Allow space to turn the PD Analog onto the pipe or fitting during mounting. The PD is delivered with the connector attached to the device.

**NORMAL OPERATION**

Pressure reading appears in the selected units (PSI, bar, etc.)

To select/change display units:

![Units](image)

**Output signal:**

10 V/5 V

Note: The UNITS button does not affect the voltage output.

**Electrical**

Connection to the PD is made with 3 wires. Wire the (-) connection to the power supply ground. Wire the (+) connection to the supply voltage (15 to 30 VDC). The (out) terminal provides a voltage output that is proportional to the pressure read by the unit.

Reversing the connections will not harm the gauge, but the gauge will not operate with incorrect polarity.

When the voltage supply falls below 15 VDC, the unit will show the LOW LOOP icon. During this low voltage condition, all calibration functions are disabled.
**TEST**

To switch the PD into Test Mode, press and hold down the TEST button. The Test Mode allows setup and testing of the output voltage without altering the system pressure. To change the test output level, press and hold the TEST button, and press the CALIB button while holding TEST. Each time the CALIB button is pressed, the test level output increases by 1 volt. When the output voltage reaches its maximum value (10 or 5 volts), pressing CALIB again will set the output voltage to 0 volts.

![Digital Pressure Gauge](image)

**ZERO PRESSURE CALIBRATION**

Press ZERO then CALIB. Hold both for 3 seconds. Release when display reads zero pressure.

The PD can be re-zeroed without affecting the span calibration. The gauge port must be open with no pressure or vacuum applied.

Perform this step when pressure units show in the display (not Volt). Zero calibration is retained after unit is turned off.

**SPAN PRESSURE CALIBRATION**

1. Press to select pressure units.
2. Press and hold for 3 seconds, until display alternately reads “CAL” and the calibration pressure (e.g. “CAL” and “500” to calibrate at 500 psi).
3. Connect the gauge port to a pressure reference of known accuracy. Apply pressure level selected in Step 2.
4. Press and hold the CALIB button for 3 seconds until display reads “DONE.” Calibration is now complete.

Notes:
- Only attempt Span calibration if the user has access to a pressure reference of known accuracy.
- The calibration equipment should be at least four times the gauge accuracy. Perform Zero calibration before span calibration.
- If the user tries to calibrate the unit beyond ± 10% of the factory calibration, the display will read “ERR” indicating an erroneous calibration.
- To cancel calibration, press and release the CALIB button.
- To restore factory calibration, repeat steps 1 and 2, then hold the ZERO button for 3 seconds, until the display reads “FAC.”

**VOLTAGE SPAN AND OUTPUT CALIBRATION**

The voltage output on the PD Analog pressure gauge has been set at the factory. These setting should not normally need adjustment. Perform these steps only if necessary.

1. Press to select the Volt units.
2. Connect the leads to an accurate current measurement device.
3. Press and hold for 3 seconds, until the display flashes between “SPAN” and the current span (either 10.00 or 5.00 volts).
4. Press TEST to switch between 10 volts and 5 volts output. Press and hold CALIB for three seconds to choose the span displayed. The PD is now in voltage calibration.
5. Press TEST to decrease the output by 0.01 volt. Press UNITS to increase the output. While the output will change, the display will not.
6. Press and hold for 3 seconds to accept the calibration at 0.00 Volt. The display will change to “CAL” and 10.00 or 5.00 (based on the output selection made in step 3).
7. Repeat steps 4 through 7 to calibrate at 10.00 or 5.00 volts. Display will now read “DONE.”

Notes:
- To cancel calibration changes, briefly press and release the CALIB button.
- To restore factory calibration, repeat step 3 only, then hold the ZERO button for 3 seconds, until the display reads “FAC.”