

# 4½ DIGIT LOOP-POWERED METERS

## Model PD675 NEMA 4X



### PD675

- 4½ Digit 0.7" (17.8 mm) LCD, 19999
- FM Approved & CSA Certified
- Impact-resistant polycarbonate body
- Operates from -20 to 65°C
- Easy to Calibrate



## Model PD677 Explosion-Proof

### PD677

- 4½ Digit 0.7" (17.8 mm) LCD, 19999
- PD677-N-EX is FM Approved & CSA Certified
- Ex-proof, cast aluminum with glass window
- Operates from -20 to 65°C
- Easy to Calibrate



**WARNING:** If any of the following operations are performed in hazardous areas, all appropriate hazardous area procedures must be followed.

**WARNING:** Disconnect from supply before opening. Keep cover tight while circuits are alive. Conduit seals must be installed within 18" of the enclosure (PD677).

**AVERTISSEMENT:** Ouvrir le circuit avant D'enlever le couvercle garder le couvercle bien fermé tant que les circuits sont sous tension. Un scellement doit être installé à moins de 450 mm du boîtier (PD677).

**WARNING:** Calibration of the Loop-Powered Display should be performed in a non-hazardous area prior to installing it in its enclosure.

**CAUTION:** Care should be taken to avoid static electricity damaging the electronic circuitry.

## SETUP

The only tools needed for calibration are a calibrated current source, a flat head screwdriver & a phillips head screwdriver. Please note that the meter must be disassembled in order to perform the setup functions.

## Disassembly

The calibration controls are located behind the display faceplate. To access these controls, you must first remove the enclosure cover and faceplate by doing the following:

PD675: Loosen the four screws on the enclosure cover and remove.

Unscrew the two fasteners that hold the faceplate, then remove.

PD677: Turn the enclosure cover counterclockwise to remove. Unscrew the two fasteners that hold the faceplate, then remove.

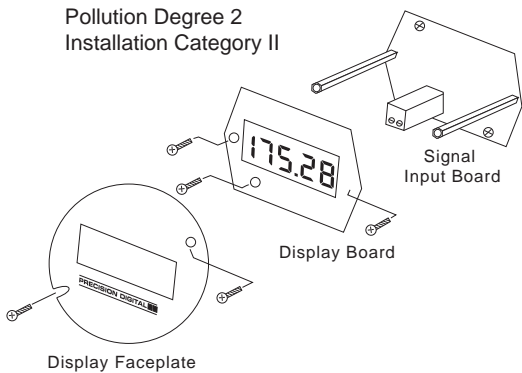


Figure 1. PD677 Assembly

**Note:** When reassembling boards DO NOT over-tighten screws.

## Connections

Field connections are made to the screw terminals located on the Signal Input Board. To access these screw terminals it is necessary to remove the Display Board from the Signal Input Board. First, disconnect the ribbon cable connector from the Display Board. Next, remove the two screws located to the left and right of the LCD that hold the Display Board in place. Finally, remove the Display Board carefully to avoid contact with any rough surfaces.

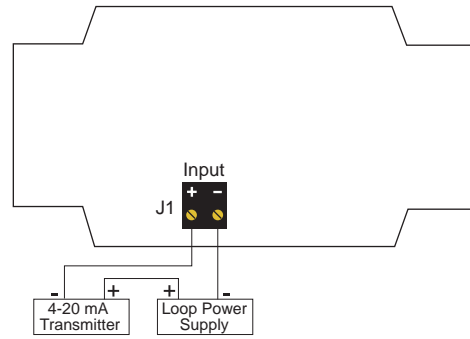


Figure 2. Signal Input Connections

## Calibration Controls

Calibration of these meters is a two-step process involving four controls. These controls are located on the Display Board. The LO controls are on the right and the HI controls on the left. The pre-configured jumper array JP2 and JP3 are also located on the Display Board.

## Calibration Procedure

Connect the 4-20 mA input signal. Apply 4 mA to the input and adjust the coarse and fine LO controls for the desired reading. Next apply a signal between 16 and 20 mA and adjust the coarse and fine HI controls for the desired reading. Complete the calibration by making any minor adjustments to the LO and HI displays.

## Jumper Positions

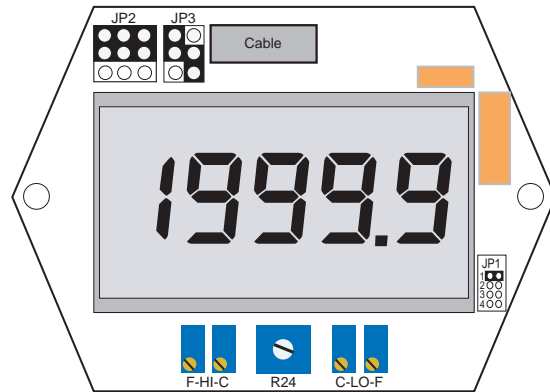


Figure 3. Display Board  
Balance Potentiometer (R24) is preset at the factory

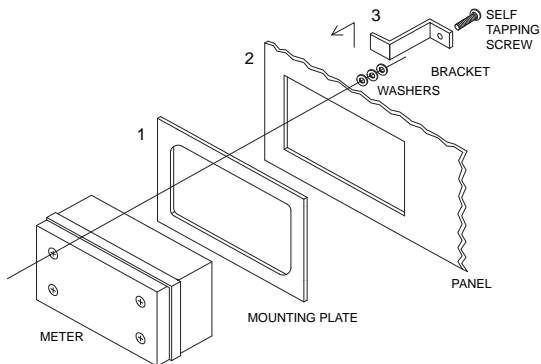
## Decimal Point Selection

Decimal point selection is accomplished using JP1 located behind the faceplate to the right of the display. Leave jumper on one pin only for a display of 19999 (default), place the jumper over both pins of #1 for a display of 1999.9, #2 for 199.99, #3 for 19.999, #4 for 1.9999



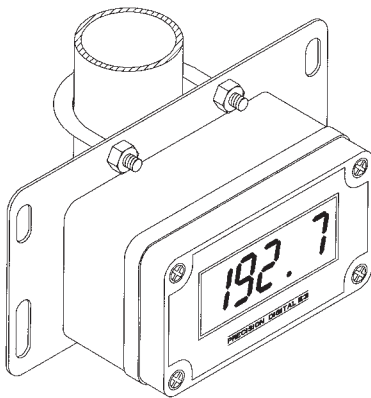
## MOUNTING KIT OPTIONS

### PD675 Panel Mount

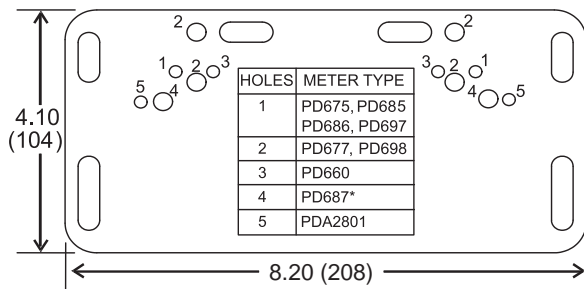


PDA6844 Panel Mounting Kit

### PD675 & PD677 Pipe Mount



PDA6845 Pipe Mounting Kit



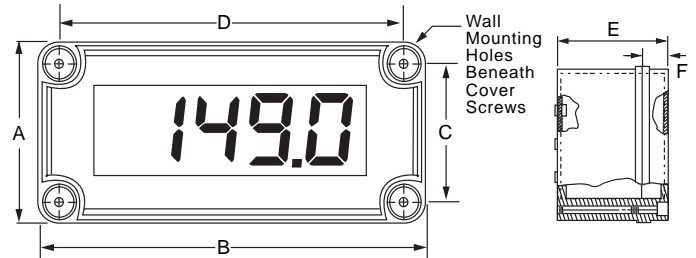
Units: Inch (mm)

Mounting Plate Hole Pattern

## DIMENSIONS

Units: Inch (mm)

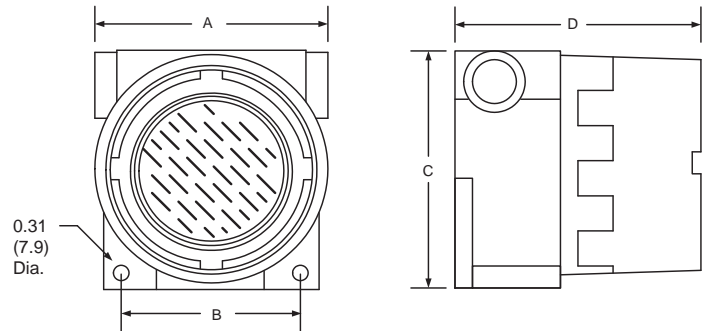
### PD675



- A: 3.15 (80)
- B: 5.51 (140)
- C: 2.36 (60)
- D: 4.72 (120)

- E: 2.56 (65)
- F: 0.79 (20)

### PD677



- A: 5.44 (138)
- B: 4.06 (103)

- C: 5.63 (143)
- D: 5.63 (143)

## ORDERING INFORMATION

Model	Description
PD675-N	NEMA 4X Loop-Powered Meter
PD677-N	Explosion-Proof Loop-Powered Meter
PD677-N-EX	FM Approved & CSA Certified Exp-Proof Meter

Accessories	
PDA6844	Panel Mounting Kit for PD675 <small>(PDA6844 does not provide NEMA 4X seal to the panel)</small>
PDA6845	2" Pipe Mounting Kit for PD675, PD677
PDA6845-SS	2" Pipe Mounting Kit SS for PD675, PD677
PDA-SSTAG	Stainless Steel Tag

## SERVICES ORDERING INFORMATION

Calibration	
PDN-CAL	Calibration with Certificate
PDN-CALDATA	Calibration with Certificate & Data
PDN-LTCAL	Lifetime Annual Recertification <small>(shipped back same day)</small>
PDN-LTCAL2	Lifetime Annual Recertification <small>(shipped back next day)</small>
PDN-LTCAL5	Lifetime Annual Recertification <small>(shipped back within 5 days)</small>
PDN-ONEDAYRTN	One-Day Turnaround Service

Certificate of Conformance	
PDN-CERTCON	Certificate of Conformance

Extended Warranty	
PDN-EXTWRNTY1-0	1 Year with a list price between: \$0-\$299
PDN-EXTWRNTY1-1	1 Year with a list price between: \$300-\$599
PDN-EXTWRNTY2-0	2 Years with a list price between: \$0-\$299
PDN-EXTWRNTY2-1	2 Years with a list price between: \$300-\$599

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## SPECIFICATIONS

Except where noted all specifications apply to operation at +25°C.

### General

**Input:** 4-20 mA @ 24 VDC maximum  
**Accuracy:** ±0.05% FS ±2 counts  
**Decimal Point:** User selectable  
**Calibration Range:** 4 mA input: -5000 to +5000;  
 20 mA input: between 200 and 20000 above 4 mA input  
**Maximum Voltage Drop:** 5.2 VDC @ 20 mA  
**Display Update Rate:** 2.5/second  
**Operating Temperature:** -20 to 65°C  
**Storage Temperature:** -40 to 80°C  
**Relative Humidity:** 0 to 90% non-condensing  
**Connections:** Removable screw terminals accept 12 to 22 AWG  
**Warranty:** 2 years parts & labor  
**Extended Warranty:** 1 or 2 years, refer to Price List for details.

### PD675

**Display:** 0.7" (17.8 mm) LCD, 4½ digits; 19999  
**Approvals:** FM Approved & CSA Certified as non-incendive for Class I, Division 2, Groups A, B, C, & D; suitable for Class II, Division 2, Groups F & G; suitable for Class III, Division 2, indoor and outdoor, hazardous (classified) NEMA 4X locations.  
**Enclosure:** Impact-resistant polycarbonate body, color: gray; clear polycarbonate cover; NEMA 4X, IP67. ½" conduit hole provided at base.  
**Weight:** 12 oz (340 g)

### PD677

**Display:** 0.7" (17.8 mm) LCD, 4½ digits; 19999  
**Approvals:** The PD677-N-EX is FM Approved & CSA Certified as explosion-proof for Class I, Division 1, Groups B, C, & D; dust-ignition proof for Class II, Division 1, Groups E, F, & G, Class III hazardous (classified) locations.  
**Enclosure:** Explosion-proof, cast aluminum with glass window, 0.3% max copper content, corrosion resistant polyester powder coating, color: safety blue. NEMA 4X, 7, & 9, IP66; FM Approved & UL/C-UL Certified: Class I, Division 1, Groups B, C, & D, Class II, Groups E, F, & G, Class III; Class I, Zone 1 AEx d IIC hazardous outdoor (Type 4X) locations. IEC rating: Ex d IIC IEC 60529 IP66. Two ¾" NPT holes provided.  
**Weight:** 5.7 lb (2.6 kg)

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