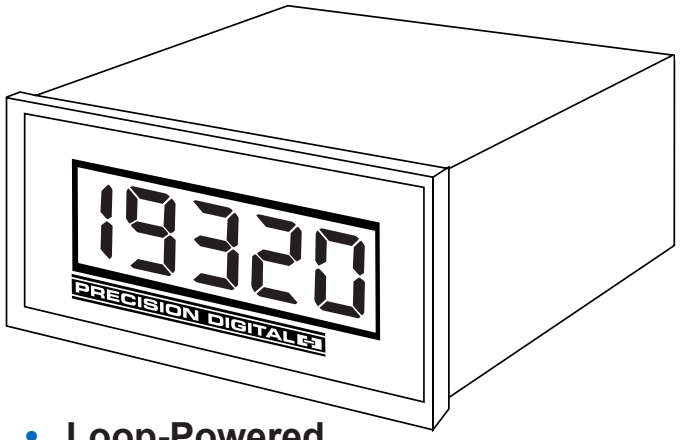
MODEL PD680 3½ DIGIT 1/8 DIN LOOP-POWERED METER

The PD680 control loop readout is a "go anywhere" meter. First, there is its freedom from the AC lines. You may power the PD680 directly from the 4-20 mA loop. Its 1 V drop makes the PD680 usable even in loops protected by safety barriers. Or you can power the PD680 from a low voltage DC source with transformer isolation between the DC power and the signal.

The PD680 can be installed almost anywhere because the large LCD display makes it easy to read in all kinds of lighting; from bright sunlight to dark shade. The PD680 fits in a standard 1/8 DIN panel cutout.



- **Loop-Powered**
- **1 Volt Drop**
- **Easy Two-Step Non-Interactive Calibration**

SPECIFICATIONS

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

General

Input: User selectable: 4-20 mA, 0-20 mA, 0-5 V, or 1-5 V
Display: 0.5" (12.7 mm) LCD, 3½ digits + extra zero; extra zero may be switched on to display up to 19,990
Accuracy: ±0.1% FS ±1 count
Decimal Point: User selectable
Calibration: Two-step; non-interacting zero and span
Calibration Range: 4 mA (1 V) input: -500(0) to +500(0); 20 mA (5 V) input: between 20(0) and 2000(0) > 4 mA (1 V)
Display Update Rate: 2.5/second
Maximum Input Current: 30 mA
Maximum Voltage Drop: 1 V @ 20 mA
Operating Temperature: -40° to 70°C
Storage Temperature: -40 to 80°C
Relative Humidity: 0 to 90% non-condensing
Enclosure: 1/8 DIN, high impact plastic, UL 94V-0, color: black
Weight: 5.9 oz (166 g)
Connections: Removable screw terminals accept 12 to 22 AWG
Power: Loop-powered, 1 V maximum voltage drop; or powered by separate 5 to 25 VDC @ 6 mA supply.
Isolation: 500 V between signal (S+, S-) and power (P+, P-), using separate supply
Warranty: 2 years parts & labor
Extended Warranty: 1 or 2 years, refer to Price List for details.

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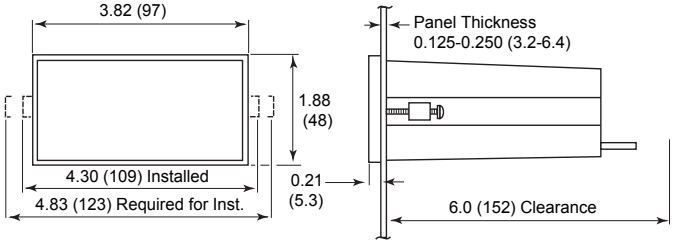
ORDERING INFORMATION

Model	Description
PD680	Loop-Powered Panel Meter
PDA2405	NEMA 4X Cover
PDA2407	NEMA 4X Enclosure for 1 Meter
PDA2408	NEMA 4X Enclosure for 2 Meters
PDA2409	NEMA 4X Enclosure for 3 Meters
PDA2410	NEMA 4X Enclosure for 4 Meters

Mounting Dimensions



Notes:
1. Dimensions are in inches and milimeters (mm)
2. Panel cutout required: 1.772″ x 3.622″ (45 mm x 92 mm) 1/8 DIN
3. Panel thickness: 0.125″ - 0.250″ (3.17 mm - 6.34 mm)
4. Clearance: allow 6 inches (152 mm) behind the panel

YOUR LOCAL DISTRIBUTOR IS:

MODEL PD680 3½ DIGIT 1/8 DIN LOOP-POWERED METER

Setup

The PD680 may be powered by either of two methods: directly from the 4-20 mA loop, or by a separate DC supply between 5 and 25 VDC at 6 mA. Transformer isolation between signal and power inputs is 500 V in the DC supply mode. Refer to diagrams at right for connections.

Decimal Point or Extra Zero

Decimal point or extra zero is activated by a pin array labeled Z 1 2 3 at the back of the instrument. Place the jumper over the "Z" pins to illuminate the extra zero, the "1" pins to illuminate a decimal point in the XXX.X position, etc.

Input Signal Selection

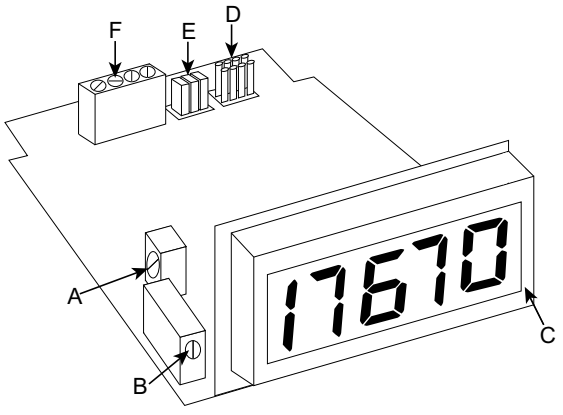
Input signal selection is made by a pin array labeled A B C at the back of the instrument.

Input Signal S+, S-	Power	Jumper Position	
		ON	OFF
4-20 mA	Loop-powered	A, B, C	None
4-20 mA	5-25 VDC (P+, P-)	B, C	A
0-20 mA	5-25 VDC (P+, P-)	B	A, C
0-5 V	5-25 VDC (P+, P-)	C	A, B
1-5 V	5-25 VDC (P+, P-)	None	A, B, C

Calibration

Calibration of the PD680 is a two step process involving two front panel controls located behind the faceplate. Remove the faceplate by inserting a stiff wire in the groove at the bottom edge of the bezel and prying off the faceplate. The LO control is located on the right and the HI control on the left.

Apply 4 mA (1 V) to the input and adjust the LO control for the desired reading. Then apply a signal between 16 and 20 mA (4 and 5 V) and adjust the HI control for the desired reading. Complete the calibration by making any minor adjustments to the LO and HI displays.

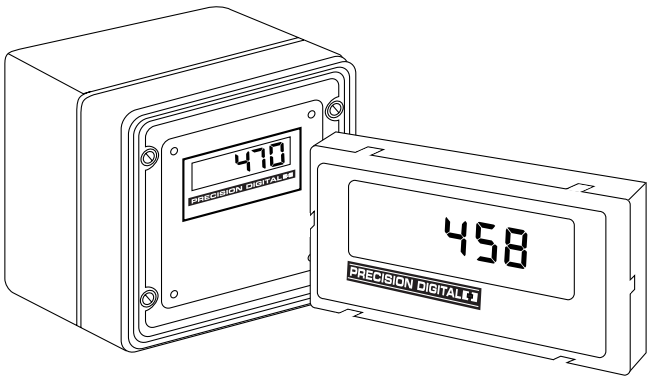


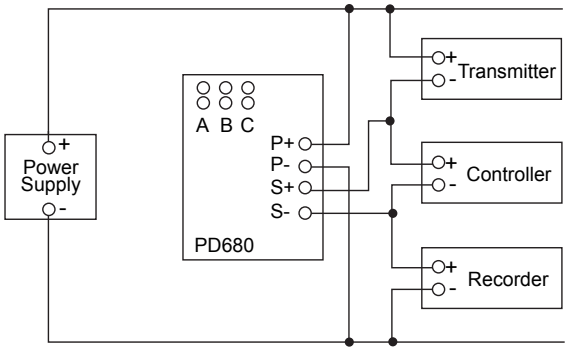
Location of Controls, Connectors, and Jumpers

A. Balance control (factory adjust only)
B. HI calibration control
C. LO calibration control (not visible in illustration)
D. Decimal point and extra zero pin array
E. Input selection pin array
F. Removable screw terminal block

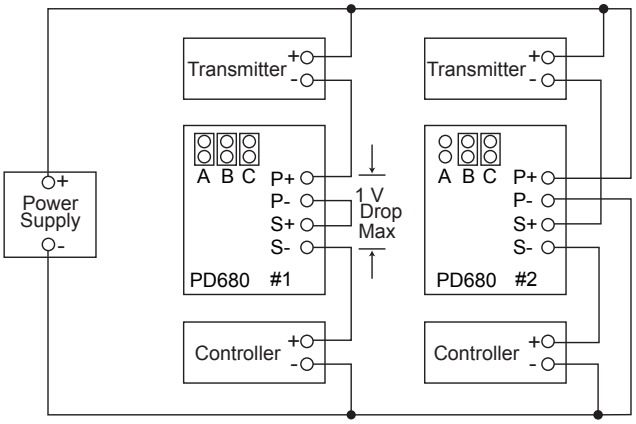
Environmental Protection

The PD680 is a control panel instrument and thus requires additional protection when mounted in harsh operating environments. Precision Digital offers a NEMA 4X cover and NEMA 4X boxes that will house 1, 2, 3, or 4 PD680s.





Circuit connections for PD680 monitoring 0-20 mA loop by measuring voltage across the controller input. PD680 is powered by the system power supply. Power supply circuit (terminals P+ and P-) completely isolated from signal circuit (terminals S+ and S-). Here the PD680 adds no voltage drop to the loop.



Circuit connections for PD680 #1 monitoring loop current and deriving its power from the loop. PD680 #2 is powered by the system power supply and is monitoring a 4-20 mA loop. Note the different arrangements of the A, B, and C jumpers.

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