5-DIGIT DUAL-LINE EXPLOSION-PROOF LOOP-POWERED PROCESS METER

ProtEX™ Pro

FM APPROVED

SAFE TOUCH® *Through-Glass Button Programming*

ProtEX-Pro • Model PD6800

- 4-20 mA Input Loop-Powered
- Modern, Sleek and Practical Enclosure
- 5-Digit, 0.7" (17.8 mm) Upper Display
- 7 Alphanumeric Character, 0.4" (10.2 mm) Lower Display
- SafeTouch® Through-Glass Button Programming
- Password Protection
- 32-Point , Square Root, or Exponential Linearization
- Loop or External DC-Powered Backlight Standard
- 3.0 V Drop (6.0 V with Backlight)
- Explosion-Proof, IP68, NEMA 4X Enclosure
- Flanges for Wall or Pipe Mounting
- HART® Protocol Transparent
- Operates from -40 to 75°C

90° *Rotatable Display*

ProtEX-Pro PD6800 LOOP-POWERED PROCESS METER

PD6800 Process Meter

Displays clear alphanumeric tag names

SAFE TOUCH® *Through-Glass Button Programming*

Process Displays

Gallons & Setpoint

Level in Feet

Pressure Indication

Easy to Setup

Programming

OVERVIEW

The new ProtEX-Pro PD6800 explosion-proof process meter brings modern design, easy readability, and enhanced functionality to hazardous areas around the world in a way never seen before. Competitors have lost sight of the fact that the primary thing customers want to do with meters such as these is to look at them. Customers want a meter that looks nice so they can be proud to install it in their facility. And they want a meter with a display that provides the important information about their process, can be seen under varied lighting conditions, from wide angles, and from a distance. The PD6800 delivers all these and more. Spend a few minutes reviewing the features described in the graphic above and you will see how!

KEY FEATURES

Informative & Easy to Read Display

The high contrast, backlight LCD display is easy to read from far away and under various lighting conditions. The upper display is 0.7" high and shows 5 digits of flow rate. The lower display is 0.4" high and shows either flow total or a tag with 7 alphanumeric characters. And best of all, the display is mounted right up against the glass so it can be seen from a wide viewing angle.

Through-Glass SafeTouch® Buttons

The PD6800 is equipped with four sensors that operate as through-glass buttons so that it can be programmed and operated without removing the cover (and exposing the electronics) in a hazardous area. These buttons can be disabled for security by selecting the LOCK setting on the switch located on the connector board in the base of the enclosure. To actuate a button, press one finger to the glass directly over the marked button area. When the cover is removed, four mechanical buttons located next to the sensors are used.

Modern, Sleek and Practical Enclosure

The first thing customers notice about a product is its enclosure and the ProtEX-Pro really shines here. The copper-free (0.30%), smooth, die-cast aluminum NEMA 4X (IP68) enclosure is finished with a corrosion resistant epoxy coating that literally does make the ProtEX-Pro shine. The built-in mounting flanges make for convenient wall or pipe mounting and there is even a slot on the back of the enclosure for centering on the pipe. There are two ¾" NPT conduit holes for wiring.

Wide Viewing Angle

Customers can't always look at the display from straight on, so the window and display module have been optimized to provide a wide viewing angle of approximately +/- 40°; nearly twice the competition! Remember, the PD6830 is designed to be looked at.

Environmentally Tough

The ProtEX™ Series not only looks great with their modern, smooth die cast aluminum enclosures, but they can be installed virtually anywhere. The NEMA 4X / IP68 enclosure provides serious protection from the elements, high impact, corrosion and electrical interference and the extensive, worldwide agency approvals means they can be installed virtually anywhere.

Perfect & Secure Fit Every Time

The internal cast rails ensure the ProtEX assembles together perfectly, quickly and securely; and everything lines up for optimal viewing every time. There are no standoffs to worry about breaking or getting out of alignment. Two spring-loaded, self-retaining, thumbscrews make the assembly a snap, while pressing the LCD as close to the glass as possible to improve wide angle viewing.

INPUT SIGNAL CONDITIONING

Live Input Calibration

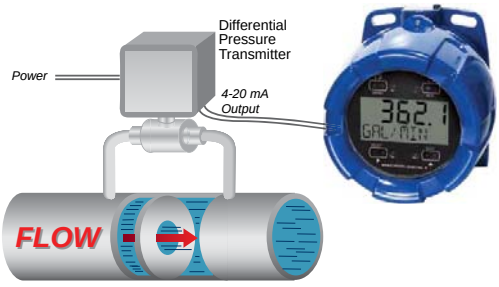
In lieu of meter scaling, the meter can be calibrated with a precision signal source. While applying a precision signal, the relative scale value is entered via the front panel. This is done at any two points along the scale. Using this method, the operator can set a "best fit straight line" for non-linear input spans.

Multi-Point Linearizer

Up to 32 linearization points can be selected under the Linear function. The multi-point linearization can be used to linearize the display for non-linear signals such as those from level transmitters used to measure volume in odd-shaped tanks or to convert level to flow using weirs and flumes that require a complex exponent. These points are established via direct entry (SCALE) or with an external calibration signal (CAL).

Square Root Extraction

The square root extraction function displays flow rate by extracting the square root from a differential pressure transmitter signal. The user selectable low-flow cutoff feature gives a reading of zero when the flow rate drops below a user selectable value.



Programmable Exponent

The programmable exponent function is used to linearize the level signal in open channel flow applications using weirs and flumes and display flow rate and units of measure.

ADDITIONAL FEATURES

Password Protection

A 5-digit password prevents unauthorized changes to the programmed parameter settings. The lock symbol is displayed to show that settings are protected. If the meter is password protected, the meter will display the message LOCKED when the Menu button is pressed.

Alarm Indication

The PD6800 has high or low alarm indication. When in alarm, the display will flash, and a HI or LO symbol is displayed. The alarm has an adjustable deadband (the difference between the set and reset points). The alarm is acknowledged by pressing the ENTER/ACK button.

INSTALLATION

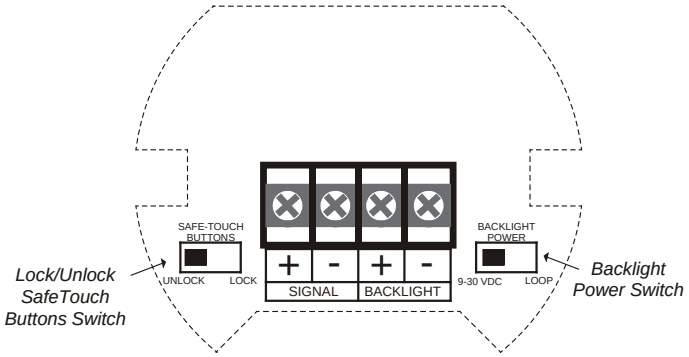
Installation Flexibility

The PD6800's rotatable display/meter module along with two available conduit connections provide for numerous installation options. The display can be rotated in 90° increments. Rotate it 90° for horizontal mounting. Wiring can then be routed to either the top conduit connection, or from below to the opposite conduit connection (metal conduit plug supplied). Use both conduit connections for through-wiring in any plane.

Easy Wiring & Service

Unscrew the two captured thumb screws and unplug a connecting cable and the display/meter module is simply and completely removed. A heavy duty terminal block is then easily accessed and wired. It is clearly marked to prevent wiring errors. The display/meter module can be removed *without breaking the loop.* As such, it can be serviced without the need to uninstall the entire product.

CONNECTIONS



See LIM6800 manual for wiring instructions

ProtEX-Pro PD6800 LOOP-POWERED PROCESS METER

SPECIFICATIONS

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

General

Display: Upper: Five digits (-9999 to 99999) 0.70" (17.8 mm) high, 7-segment, automatic lead zero blanking. Lower: Seven characters 0.4" (10.2 mm) high, 14 segment alphanumeric. Symbols: for high & low alarm, Password Lock. Backlight: White
Decimal Point: Upper process display has up to four decimal places or none: d.dddd d.ddd, d.dd, d.d, or ddddd
Display Update Rate: Ambient > -25°C: 2 Updates/Second. Ambient < -25°C: 1 Update/5 Seconds
Display Orientation: Display may be mounted at 90° increments up to 270° from default orientation.
Overrange: Display flashes 99999
Underrange: Display flashes -9999
Programming Method: Four SafeTouch® through-glass buttons when cover is installed. Four internal pushbuttons when cover is removed.
Noise Filter: Programmable - Lo, Med, Hi, or Off
Recalibration: Recalibration is recommended at least every 12 months.
Max/Min Display: Max/Min readings reached by the process are stored until reset by the user or until power to the meter is turned off.
Password: Programmable password restricts modification of programmed settings.
Advanced Functions: Live input calibration, linearization, square root, or programmable exponent
Alarm Indication: Flashing display plus HI/LO indicators
Non-Volatile Memory: All programmed settings are stored in non-volatile memory for a minimum of ten years if power is lost.
Normal Mode Rejection: 64 dB at 50/60 Hz
Operating Temperature Range: -40 to 75°C.
Storage Temperature Range: -40 to 85°C.
Relative Humidity: 0 to 90% non-condensing
Connections: Screw terminals accept 12 to 22 AWG wire
Enclosure: Explosion-proof die-cast aluminum with glass window, corrosion resistant epoxy coating, color: blue. NEMA 4X, 7, & 9, IP68. Copper-free (0.3%). Two ¾" NPT threaded conduit openings. One ¾" NPT metal conduit plug with 12 mm hex key fitting installed.
Mounting: May be mounted directly to conduit. Two slotted flanges for wall mounting or NPS 1½" to 2½" or DN 40 to 65 mm pipe mounting.
Overall Dimensions: 5.65" x 5.25" x 4.86" (W x H x D) (144 mm x 133 mm x 124 mm)
Weight: 5.00 lbs (80 oz, 2.27 kg)
Warranty: 3 years parts and labor

Input

Input range: 4-20 mA
Accuracy: ±0.03% of calibrated span ±1 count, square root & programmable exponent accuracy range: 10-100% of calibrated span.
Temperature Drift: 50 PPM/°C
Decimal Point: User selectable decimal point
Calibration Range: An error message will appear if input 1 and input 2 signals are too close together. Input Range: 4-20 mA. Minimum Span Input 1 & Input 2: 0.10 mA
Maximum Voltage Drop: 3.0 VDC @ 20 mA without loop-powered backlight. 6.0 VDC @ 20 mA with loop-powered backlight
Equivalent Resistance: 150 Ω @ 20 mA without loop-powered backlight. 300 Ω @ 20 mA with loop-powered backlight
Input Overload: Over current protection to 2 A max.
Externally Powered Backlight:

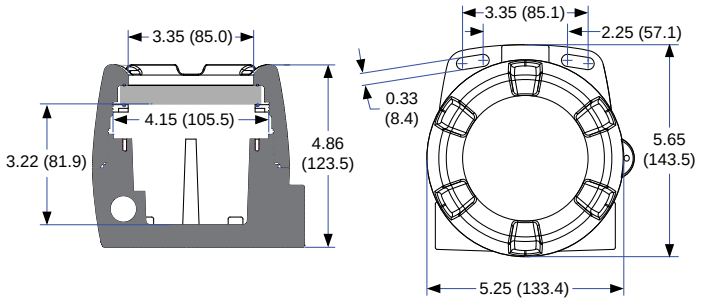
Voltage Range	Maximum Power			
9-30 VDC	9 VDC	12 VDC	24 VDC	30 VDC
	0.2 W	0.25 W	0.5 W	0.75 W

Product Ratings & Approvals

FM: Explosion-proof for use in Class I, Division 1, Groups B, C, D. Class II, Division 1, Groups E, F, G. Class III, Division 1; T6. Class I, Zone 1, AEx d IIC T6 Gb. Zone 21, AEx tb IIIC T85°C. Ta = -40 to 75°C. Enclosure: Type 4X & IP66. Certificate number: 3040391
ATEX: II 2 G D. Ex d IIC T6 Gb. Ex tb IIIC T85°C Db IP68. Ta = -40 to 75°C. Certificate number: Sira 10ATEX1116X
IECEx: IECEx SIR 10.0056X. Ex d IIC T6 Gb. Ex tb IIIC T85°C Db IP68. Ta = -40 to 75°C
CSA: Class I, Division 1, Groups B, C, D. Class II, Division 1, Groups E, F, G. Class III, Division 1; T6. Class I, Zone 1, Ex d IIC T6. Ta = -40 to 75°C. Enclosure: Type 4X & IP66. Certificate number: 11 2325749

DIMENSIONS

Units: Inch (mm)



ORDERING INFORMATION

ProtEX-Pro PD6800 • Process Meter	
Model	**Options Installed**
PD6800-0K0	Backlight

ProtEX™ Pro

Your Local Distributor is:

Disclaimer

Looking for a Rate/Totalizer?
Please consider Precision Digital's
ProtEX-RTA PD6820 & ***ProtEX-RTP PD6830***.

LDS6800_C 04/11

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