

# 3½+ DIGITS EXPLOSION-PROOF PROCESS METER

## ProtEX-Lite • MODEL PD663



### INTRODUCTION

The PD663 is a rugged, explosion-proof NEMA 4X loop-powered meter perfect for applications where a simple, inexpensive display is required in a hazardous area.

The PD663 derives all its power from the 4-20 mA loop. The PD663 is scaled using four push buttons and can be done without applying an actual calibration signal, and through the explosion-proof enclosure with optional magnetic reed switches and a magnet key. The PD663's display will read up to 2999; we call this 3½+ digits! The loop-powered backlighting option lets you see the display under any lighting condition and is powered completely from the 4-20 mA loop. This means there is no need for additional wiring and never any batteries to change.

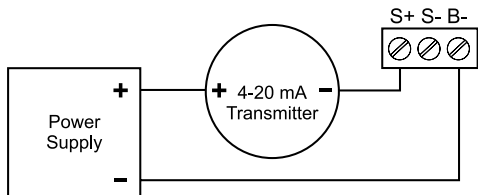
The PD663 is housed in a rugged, explosion-proof, cast aluminum, NEMA 4X enclosure and is provided with two threaded conduit holes and integrated pipe or wall mounting flanges.

### QUICKSTART

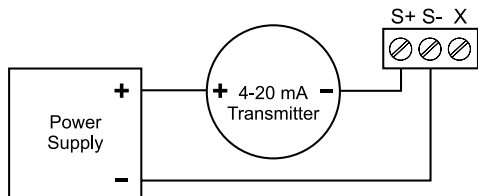
The PD663 is designed to be easily wired into your current loop and quickly programmed.

### Wiring

The two wire power/signal connection is made on the back of the PD663 on the three position removable terminal block. Follow instructions printed on the unit for two wire loop-powered connections with or without backlight.



PD663 Input Connections with Backlight



PD663 Input Connections without Backlight

### FEATURES

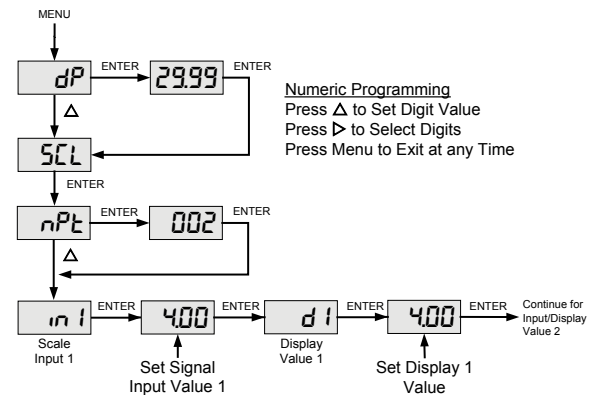
- 4-20 mA Input
- Modern, Sleek and Practical Enclosure
- 3½+ Digits, 0.6" (15.24 mm) Display
- Display Mountable at 0°, 90°, 180°, & 270° Degrees.
- Easy Four-Button Programming
- Programmable Noise Filter
- Max/Min Display
- Loop-Powered Backlight Option
- 1.7 V Drop (4.7 V with Backlight)
- Explosion-Proof, IP68, NEMA 4X Enclosure
- Flanges for Wall or Pipe Mounting
- HART® Protocol Transparent
- Operates from -40 to 75°C
- 32-Point and Square Root Linearization Functions



Actual Size Digits

### Programming

The PD663 comes calibrated and scaled at the factory to display a 4.00 to 20.00 mA signal on startup. To change the scaling, follow along using the 4 button interface.



PD663 Menu Progression



Menu

Enter

Reset

Max

## SPECIFICATIONS

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

### General

**Display:** 0.6" (15.24 mm) LCD, 3½+ digits; -1999 to 2999

**Display Update Rate:** 2 Updates/Second

**Display Orientation:** Display may be mounted at 90° increments up to 270° from default orientation.

**Over-Range:** Display Flashes 2999

**Under-Range:** Display Flashes -1999

**Programming Method:** 4 Internal Pushbuttons (behind glass). Magnet may also be used for programming; P/N PDA-MAG.

**Noise Filter:** Programmable HI, LOW, 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.

**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:** -40 to 75°C

**Storage Temperature:** -40 to 75°C

**Relative Humidity:** 0 to 90% non-condensing

**Connections:** Removable screw terminals accept 12 to 22 AWG

**Tightening Torque:** Screw terminal connectors: 4.5 lb-in (0.5 Nm)

**Enclosure:** Explosion-proof cast aluminum with glass window, 0.30% max copper content, corrosion resistant powder coating, color: blue. NEMA 4X, IP68. Two ½" NPT threaded conduit openings. One ½" NPT nickel plated brass conduit plug with 10 mm hex key fitting installed.

**Mounting:** May be mounted directly to conduit. Two mounting holes for 1.5" pipe or wall mounting.

**Weight:** 40 oz (1.13 kg)

**Overall Dimensions:** 4.30" x 4.27" x 3.62" (109 mm x 108 mm x 92 mm) (W x H x D)

**Warranty:** 3 years parts & labor

### Input

**Input:** 4-20 mA

**Accuracy:** ±1 count

**Function:** Linear (2 to 32 points) or square root

**Temperature Drift:** 50 PPM/°C from -40 to 75°C ambient

**Decimal Point:** User selectable decimal point

**Minimum Span:** Input 1 & Input 2: 0.40 mA

**Maximum Voltage Drop:** 1.7 VDC @ 20 mA; 4.7 VDC @ 20 mA with backlight option.

**Equivalent Resistance:** 85 Ω @ 20 mA without backlight; 245 Ω @ 20 mA with backlight

**Loop-Powered Backlight Option:** Factory installed only. Powered directly from the 4-20 mA loop, no batteries required. Backlight can be enabled or disabled via alternative wiring of terminal block. The display brightness will increase as the input signal current increases.

### 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°C 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

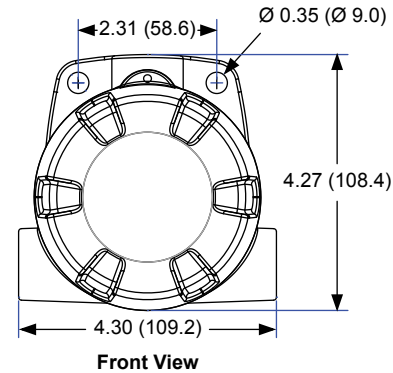
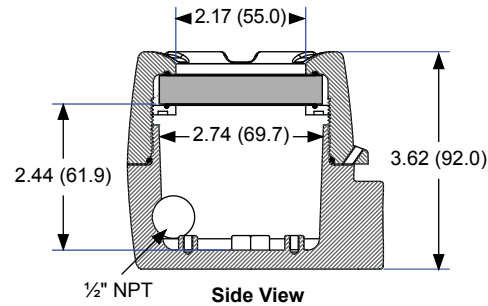
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## DIMENSIONS

Units: Inch (mm)



## ORDERING INFORMATION

ProtEX-Lite PD663 • Explosion-Proof Process Meter	
Model	Options Installed
PD663-0L0-00	None
PD663-0K0-00	Backlight
PD663-0LA-00	Reed Switches
PD663-0KA-00	Backlight + Reed Switches

Accessories	
Model	Description
PDA6631	1.5" U-Bolt Pipe Mounting Kit
PDA6631-SS	1.5" U-Bolt Pipe Mounting Kit, Stainless Steel
PDA6863	2" Pipe Mounting Kit, 2 Holes & 2 Slots
PDA6863-SS	2" Pipe Mounting Kit, 2 Holes & 2 Slots, Stainless Steel
PDA-MAG	Magnet Assembly for Reed Switches



**Your Local Distributor is:**

LDS663\_F 03/13



[www.predig.com](http://www.predig.com)