

# 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.

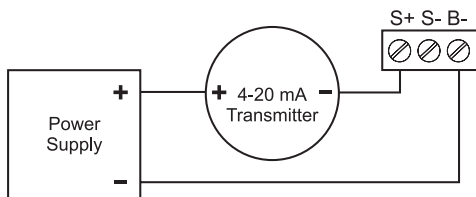
The PD663 is housed in a rugged, explosion-proof, cast aluminum, NEMA 4X enclosure and is provided with two threaded conduit holes and integrated pipe or wall mounting flanges.

## QUICKSTART

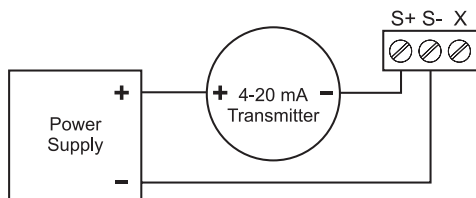
The PD663 is designed to be easily wired into your current loop and quickly programmed.

## 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

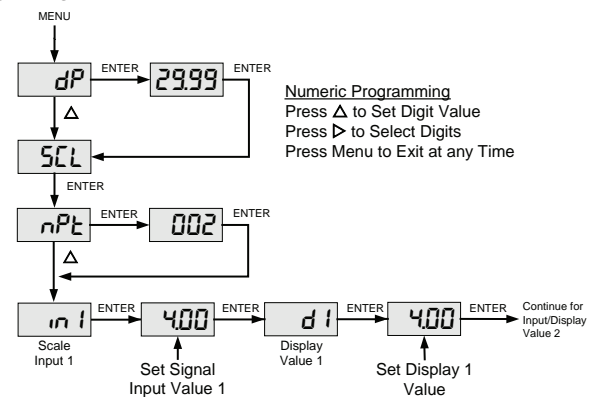
- 4-20 mA Input
- Modern, Sleek and Practical Enclosure
- 3½+ Digits, 0.6" (15.24 mm) Display
- Display Mountable at 0°, 90°, 180°, & 270° Degrees.
- Easy Four-Button Programming
- Programmable Noise Filter
- Max/Min Display
- Loop-Powered Backlight Option
- 1.7 V Drop (4.7 V with Backlight)
- Explosion-Proof, 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

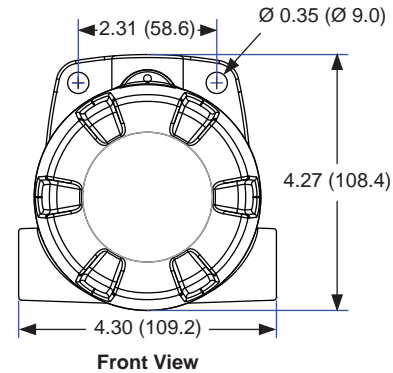
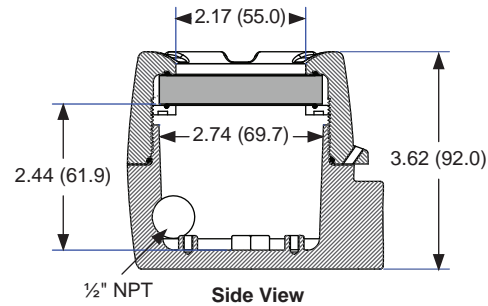
### Disclaimer

The information contained in this document is subject to change without notice. Precision Digital Corporation makes no representations or warranties with respect to the contents hereof, and specifically disclaims any implied warranties of merchantability or fitness for a particular purpose.

©2011-2016 Precision Digital Corporation. All rights reserved.

## 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\_G 01/16