

# INDUSTRIAL DIGITAL PRESSURE GAUGES MODELS PD213, PD214, & PD224



- Digital gauge, pressure switch, & transmitter
- Vacuum, compound pressure, 15 to 20,000 psi
- 0.25% FS Terminal Point Accuracy (0.13% BFSI)
- 5 digit LCD, % bargraph & battery level indication
- Large 0.6" (15.2 mm) or 0.88" (22.4 mm) LCD
- 4-20 mA output & 2 Form C relays
- Three case options: stainless steel, aluminum, or fiberglass reinforced thermoplastic
- NEMA 4, IP65 case
- Battery, loop, or 12-36 VDC powered
- Intrinsically safe, Class I, Div 1
- Password protected menus
- Easy-to-use menu options
  - Five backlight settings
  - Twelve engineering units
  - Menu configure feature
  - Update rate
  - Dampen mode
  - Auto off

## KEYPAD FUNCTIONS

**On/Off:** Manually turns unit on and off (auto off options in menu)

**Zero/Clear:** Zeros display or clears max & min values when values are displayed.

**Max/Min ▼ (down) Arrow Key:** Displays max & min values, arrow key allows for scrolling through menu items.

**Menu Key:** Provides access to menu options.

**Backlight ▲ (up) Arrow Key (backlight optional):** Manually turns backlight on and off (auto off options in menu), arrow key allows for five menu options. ▲ (up) arrow key allows for scrolling through menu options.

**Enter:** Selects items in the menu.

## MENU MODE

**Engineering Units:** psi, inHg, mmHg, inH<sub>2</sub>O (temperature options: 4°C, 20°C, 60°F), mBar, ftH<sub>2</sub>O, MPa, kPa, kg/cm<sup>2</sup>, Bar

**Configuration Mode:** Allows for changes to default settings of gauge including zero disable feature.

**Bargraph:** Allows for adjustment of bargraph and 4-20 mA output (optional feature).

**Backlight:** 5 settings: never, 10 sec, 30 sec, 1 min, 5 min

**Auto Off:** Allows changes to auto off function of pressure gauge, 5 settings: never, 2, 5, 15, 30 minutes.

**Display Update Rate:** 4 settings: 100 ms, 200 ms, 500 ms, 1 sec

**Dampening:** 6 settings: none, average, (2, 4, 6, or 8) x 100 ms

**Password:** Restricts modification of programmed settings.

**Field Calibration:** Allows for calibration of zero, mid-point, and span (password protected).

## PRESSURE RANGES

The following engineering units can be configured to the digital pressure gauge (with legend). To determine proper Pressure Range Code convert engineering units to psi, then select optimum standard pressure range from Pressure Range Code Table.

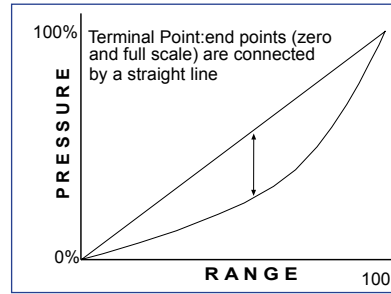
Conversion Chart	
Other Units	psi (multiplier)
inH <sub>2</sub> O (20°)	0.0360
ftH <sub>2</sub> O (with three temperature options: 20°F, 60°F, and 4°C)	0.4327
mmHg	0.0193
inHg	0.4911
kg/cm <sup>2</sup>	14.2233
mBar	0.0145
Bar	14.5038
kPa	0.1450
MPa	145.038

### Example

$$\begin{array}{ccccccc}
 \mathbf{35 \text{ Bar}} & \times & \mathbf{14.5038} & = & \mathbf{507.06 \text{ psi}} & = & \mathbf{10} \\
 \textit{Your Range} & & \textit{Multiplier} & & \textit{psi Range} & & \textit{psi Code}
 \end{array}$$

Your Part Number: PD213-BK0-4N-10

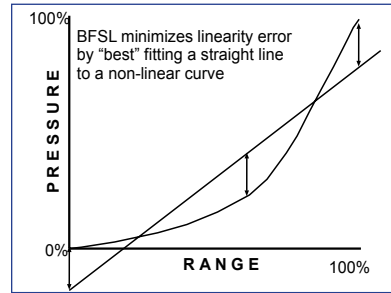
### Precision Digital Gauges with Terminal Point Accuracy



#### BENEFIT

- All points between zero and full scale will be within stated accuracy
- Allows zeroing of gauge at start-up to eliminate any sensor offset

### Competitive Digital Gauges with Best Fit Straight Line (BFSL) Accuracy



- Linearity error minimized by "best" fitting a straight line to a non-linear curve.
- BFSL gauges have a zero offset at calibration that must be maintained to ensure accuracy throughout range

**ORDERING INFORMATION**

Model PD213 • 3" Industrial Digital Pressure Gauge				Pressure Range Code (##)		
Model	Backlight Model	Options Installed	Power	##Code	Range	Units
PD213-0L0-4N-##		None	Loop-Pwr	C1	-15/15	Compound psi
PD213-2L0-4N-##	PD213-2K0-4N-##	None	12-36 VDC	C2	-15/30	
PD213-2L2-4N-##	PD213-2K2-4N-##	2 Relays		C3	-15/60	
PD213-2L3-4N-##	PD213-2K3-4N-##	4-20 mA Output		C4	-15/100	
PD213-2L5-4N-##	PD213-2K5-4N-##	2 Relays + 4-20 mA Output	Battery	00	-30/0	Compound inHg
PD213-BL0-4N-##	PD213-BK0-4N-##	None		01	5	Pressure psi
Model PD214 • 4½" Industrial Digital Pressure Gauge				02	10	
Model	Backlight Model	Options Installed	Power	03	15	
PD214-0L0-4N-##		None	Loop-Pwr	04	30	
PD214-2L0-4N-##	PD214-2K0-4N-##	None	12-36 VDC	05	60	
PD214-2L2-4N-##	PD214-2K2-4N-##	2 Relays		06	100	
PD214-2L3-4N-##	PD214-2K3-4N-##	4-20 mA Output		07	160	
PD214-2L5-4N-##	PD214-2K5-4N-##	2 Relays + 4-20 mA Output	Battery	08	200	
PD214-BL0-4N-##	PD214-BK0-4N-##	None		09	300	
Model PD224 • 4½" Industrial Digital Pressure Gauge				10	500	
Model	Backlight Model	Options Installed	Power	11	600	
PD224-0L0-4F-##		FM Approved & CSA Certified	Loop-Pwr	12	800	
PD224-0L0-4N-##		None	12-36 VDC	13	1,000	
PD224-2L0-4F-##		FM Approved & CSA Certified		15	2,000	
PD224-2L0-4N-##	PD224-2K0-4N-##	None		16	2,500	
PD224-2L2-4N-##	PD224-2K2-4N-##	2 Relays	Battery	17	3,000	
PD224-2L3-4F-##		4-20 mA Output + FM Approved & CSA Certified		18	5,000	
PD224-2L3-4N-##	PD224-2K3-4N-##	4-20 mA Output		19	7,000	
PD224-2L5-4N-##	PD224-2K5-4N-##	2 Relays + 4-20 mA Output	Battery	20	8,000	
PD224-BL0-4F-##		FM Approved & CSA Certified		21	10,000	
PD224-BL0-4N-##	PD224-BK0-4N-##	None		22	15,000	
				23**	20,000	

## represents pressure range code. See Pressure Range Codes Table for details  
 ½" NPT Connection available for PD214 & PD224 only: Replace -4 with -2 (Example: PD224-2K0-2N-10)

Note: Additional codes will be provided upon request for other ranges listed.  
 \*\* Not available with FM & CSA Approved Models.

Accessories	
Model	Description
PDA2000	ABS Carrying Case for PD213
PDA2001	Protective Rubber Boot for PD213
PDA2002	Protective Front Cover for PD213
PDA2003	Throttle Screw (Standard Orifice 0.031") for PD214 & PD224
PDA2004	Throttle Plug (Standard Orifice 0.013") for PD213
PDA2005	Panel Mounting Kit for PD214 & PD224

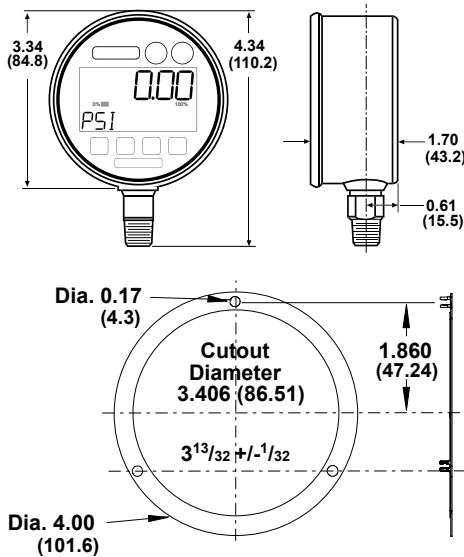
Options for Industrial & Test Gauges				
Code	Description	PD213	PD214	PD224
E	Electropolished	•		
G	Front Flange for Panel Mounting	•		
H	Electropolished & Front Flange	•		
X	Oxygen Service	•	•	•
Y	Accu-Seal Diaphragm		•	•
Z	Oxygen Service & Accu-Seal		•	•

Enter E, G, or H in place of N (Example: PD213-2L0-4G-08)  
 Enter X, Y, or Z before ## code in place of hyphen (-) (Example: PD213-2L0-2FX08)

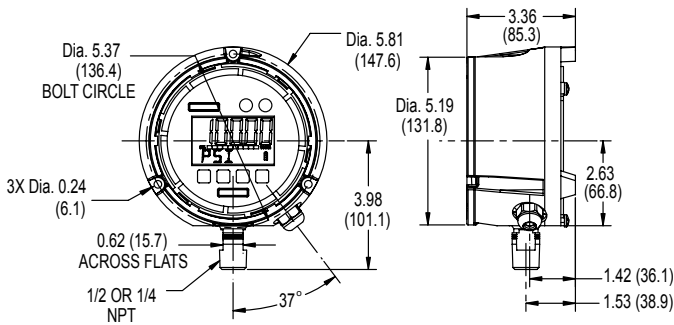
**DIMENSIONS**

Units: Inch (mm)

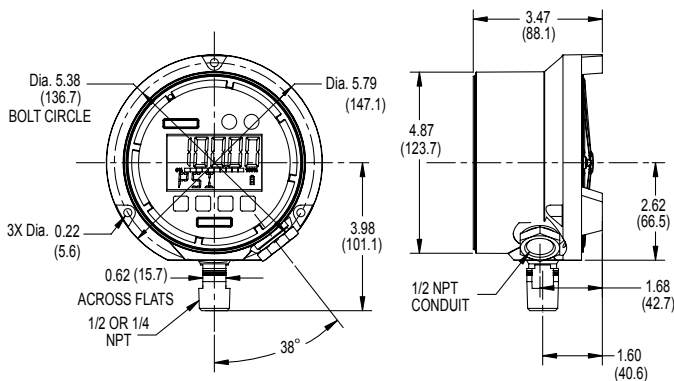
**PD213**



**PD214**



**PD224**



**SPECIFICATIONS**

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

**General**

**Type:** Industrial Digital Pressure Gauge

**Pressure Input:** Vacuum to 20,000 psi & compound; see other engineering units below

**Display:** 5 digit LCD 99,999; PD213 (3"): 0.60" (15.2 mm), PD214 & PD224 (4 1/2"): 0.88" (22.4 mm)

**Accuracy:** 0.25% FS, Terminal Point

**Temperature Drift:** 0.02%/°C zero & span (<0.01%/°C typical)

**Backlight:** Optional; manual or auto off

**Bargraph:** 10-segment %FS, programmable to indicate desired pressure range; and battery level indicator

**Case Size:** PD213: 3" diameter; PD214 & PD224: 4 1/2" diameter

**Case Material:** PD213: 300 Series stainless steel,  
PD214: Fiberglass reinforced thermoplastic,  
PD224: Black epoxy coated aluminum

**Case Rating:** NEMA 4, IP65

**Wetted Materials:** 17-4 PH stainless steel sensor;  
316 stainless steel socket

**Socket Size:** 1/4" or 1/2" NPT

*Note: 1/2" NPT only with PD214 & PD224*

**Socket Location:** Lower connection, 6 o'clock

**Mounting:** Stem (standard), panel (optional)

**Weight:** 3" case: 12.5 oz (354 g), 4 1/2" plastic case: 24.4 oz (692 g)

**Power Options:** Battery, loop-powered, or 12-36 VDC

**Battery Life:** PD213: >1000 hours, PD214 & PD224: >3600 hours

**Operating Temperature:** -10 to 60°C

**Storage Temperature:** -20 to 70°C

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

**Approvals:** FM, CSA, & ATEX available on certain versions of PD224 only.

FM Approved & CSA Certified as intrinsically safe with entity, for use in Class I, II, III, Division 1, Groups A, B, C, D, E, F, & G;

T-code = T4. Non-incendive for use in Class I, II, III, Division 2, Groups A, B, C, D, F, & G; Type 4 hazardous (Classified) locations.

**Relays**

**Ratings:** 2 Form C (SPDT); rated 1 A @ 30 VDC, 0.5 A @ 125 VAC

**Deadband:** 0-100% FS, user selectable

**High or Low Alarm:** User may program any alarm for high or low.

**4-20 mA Transmitter Output**

**Scaling Range:** 0-100% FS

**Transmitter Power Supply:** 12-36 VDC, 2 W max

(transmitter supply available with -2L and -2K models)

**Your Local Distributor is:**

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