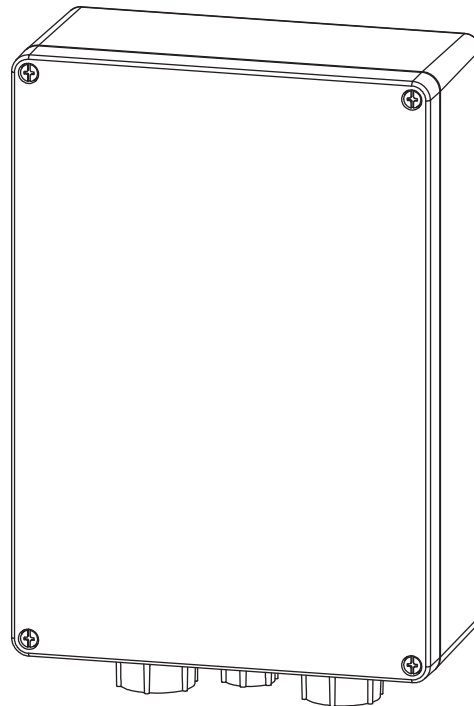


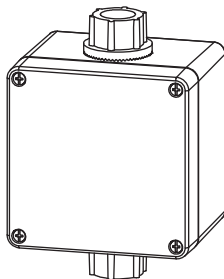
MODELS PD230 AND PD1230

Installation Instructions

Model PD1230 3x12 Channel Lightning Surge Protector



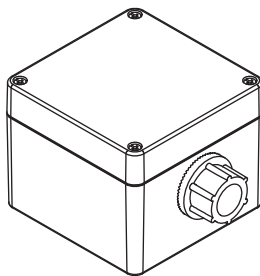
Model PD230 3x2 Channel Lightning Surge Protector



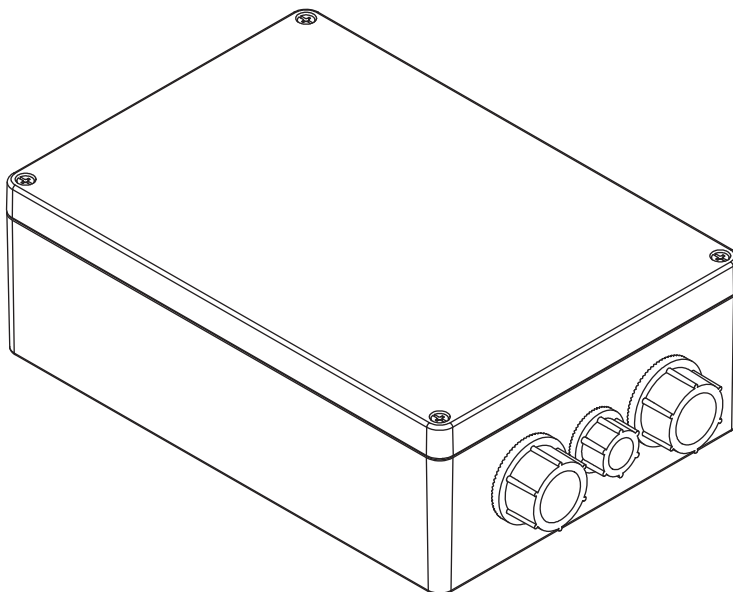
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1 (800) 209-7858

PD230 - 3x2 CHANNEL LIGHTNING SURGE PROTECTOR: Model PD230 provides protection for up to (6) circuits when (2) PM305 or PM324 modules are installed. PD230s are generally installed as close as practical to probes and/or sensors.



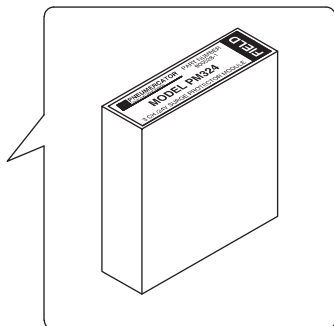
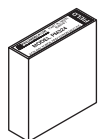
PD1230 - 3x12 CHANNEL LIGHTNING SURGE PROTECTOR: Model PD1230 provides protection for up to (36) circuits when (12) PM305 or PM324 modules are installed. PD1230s are generally installed as close as practical to a tank monitoring console such as Pneumercator E, LDE or TMS series.



PM305 OR PM324 - LIGHTNING SURGE PROTECTOR MODULE: Each module consists of (3) independent circuits. The modules are polarized and must be installed as shown on page 8. Modules are sold (3) per pack separately from the PD230 and PD1230 consoles, see table below.

ENLARGED FOR CLARITY

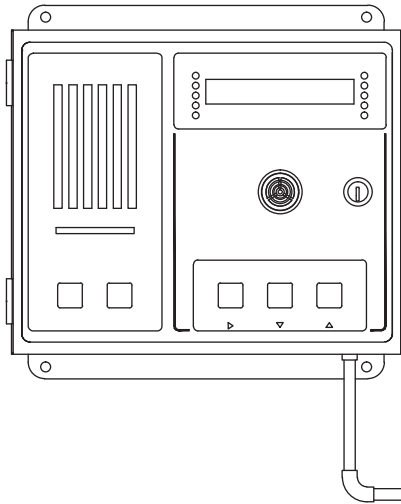
PM324
MODULE SHOWN



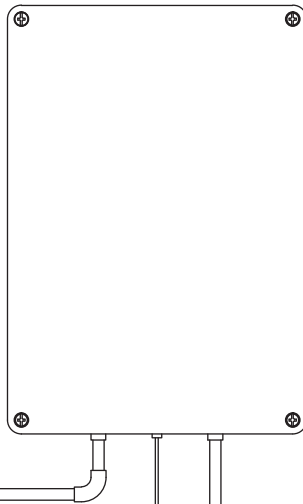
MODULE	DESCRIPTION	TANK MONITORING CONSOLE
PM305-3 (3-PACK)	5V SURGE PROTECTOR MODULE	PNEUMERCATOR E OR LDE SERIES
PM324-3 (3-PACK)	24V SURGE PROTECTOR MODULE	PNEUMERCATOR TMS SERIES

GENERAL OVERVIEW EXAMPLE

TANK MONITORING CONSOLE (TMS SERIES SHOWN)



PD1230



⚠ WARNING

Refer to TMS installation manual for WARNINGS and CAUTIONS before proceeding. FAILURE TO COMPLY MAY RESULT IN PERSONAL INJURY, PROPERTY LOSS AND EQUIPMENT DAMAGE.

TYPICAL PNEUMERCATOR PROBE MODELS

2-WIRE	3-WIRE *
MP461SC	MP450S
MP461SV	MP451S
MP462SV	MP452S
MP463SV	

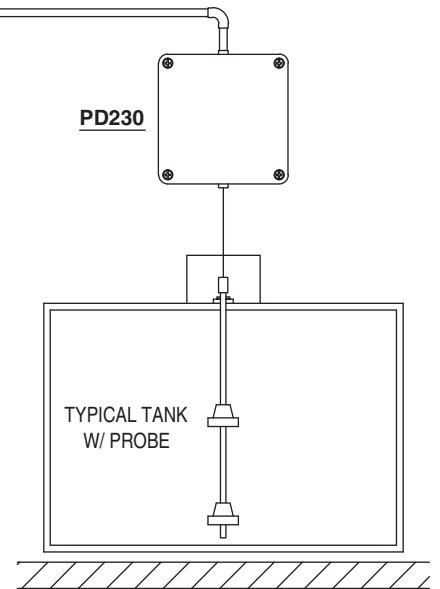
* (1) CONDUCTOR IS PROBE GROUND WIRE. SEE WIRING ON PAGE 6.

TYPICAL PNEUMERCATOR SENSOR MODELS

2-WIRE	3-WIRE
HS100-ND	ES825-100 SERIES
LS600	ES825-200 SERIES
LS600LD SERIES	HS100D
LS610	
RSU801	RSU800 (DISCRIMINATING)
RSU800 (NON-DISCRIMINATING)	

TO EARTH
GROUND

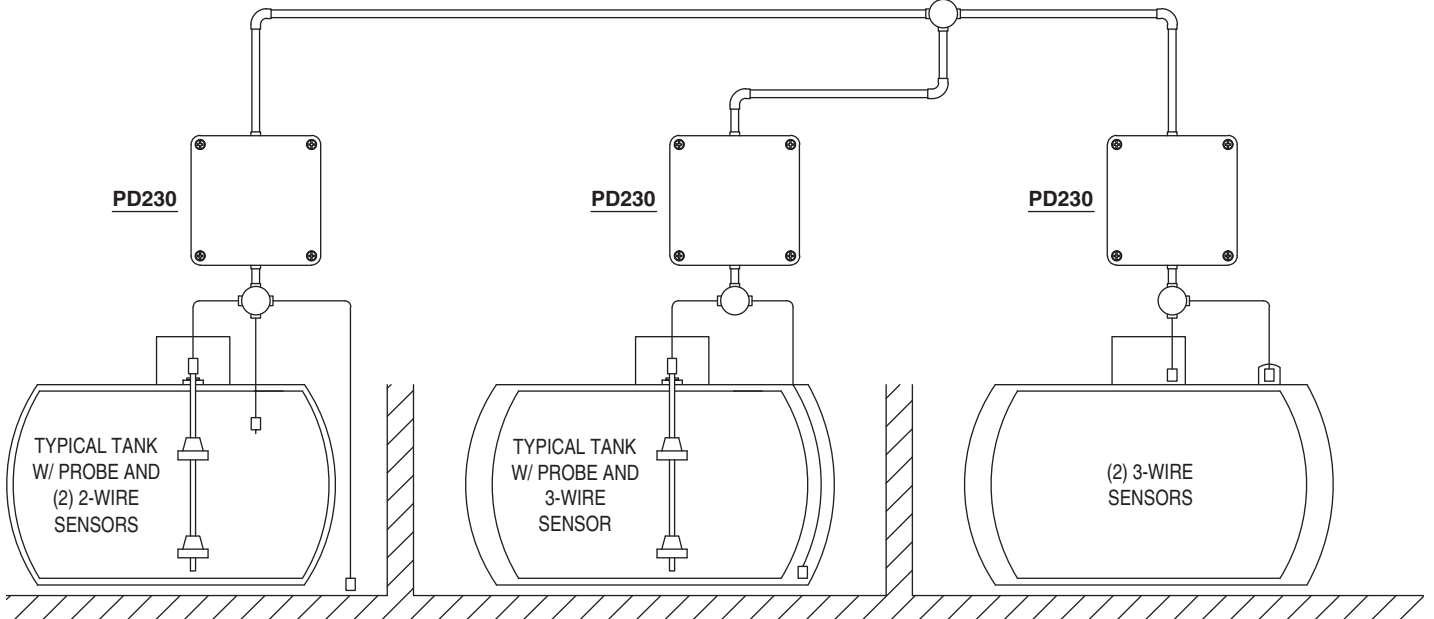
PD230



PD230

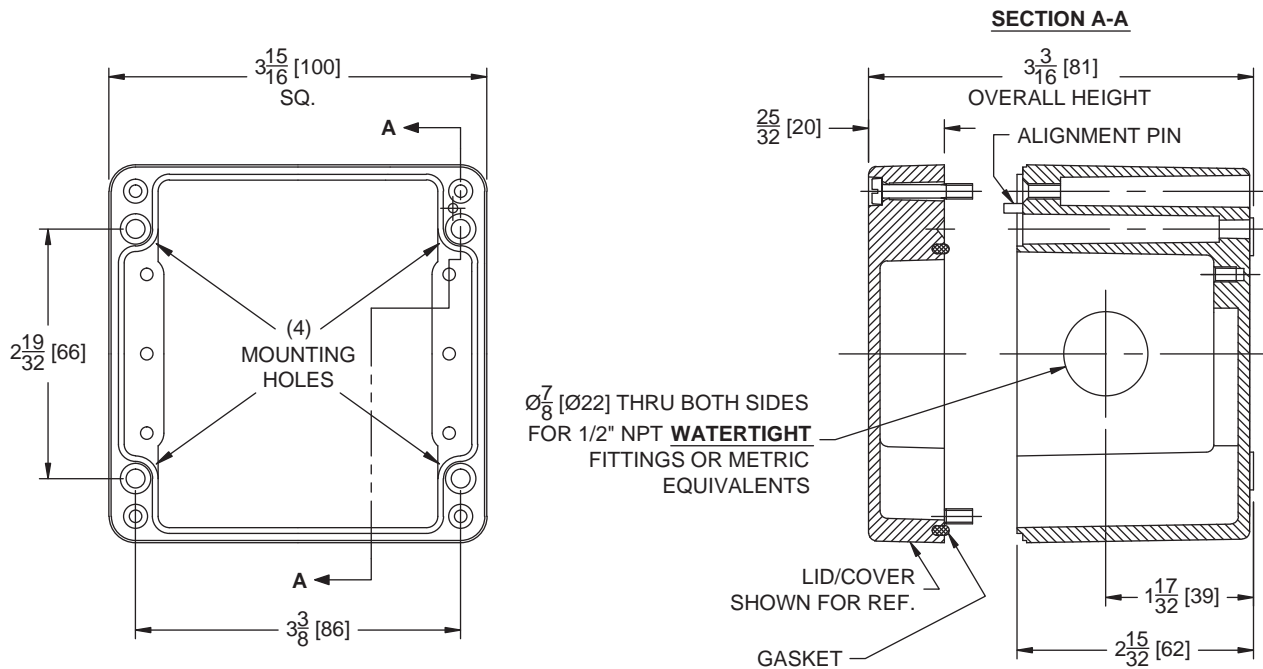
PD230

PD230



PD230 ENCLOSURE

OUTLINE DRAWING

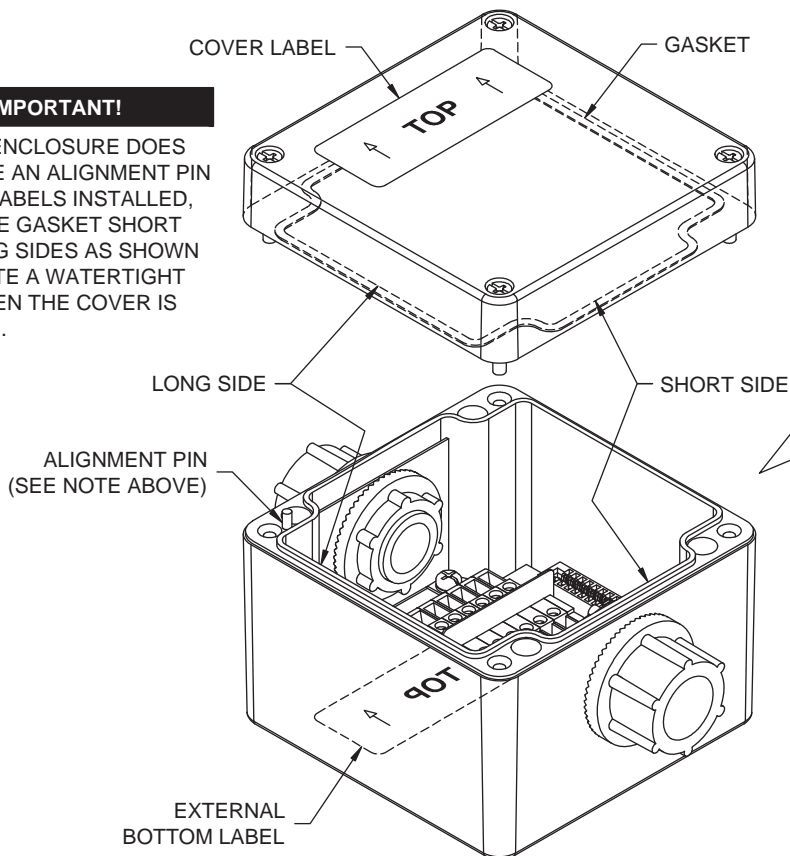


- NOTES:
- ENCLOSURE RATING: UP TO NEMA 4X; IP 66, DIN 40053.
 - DIMENSIONS: INCHES [MM].
 - DRAWING SCALE: 1/2.

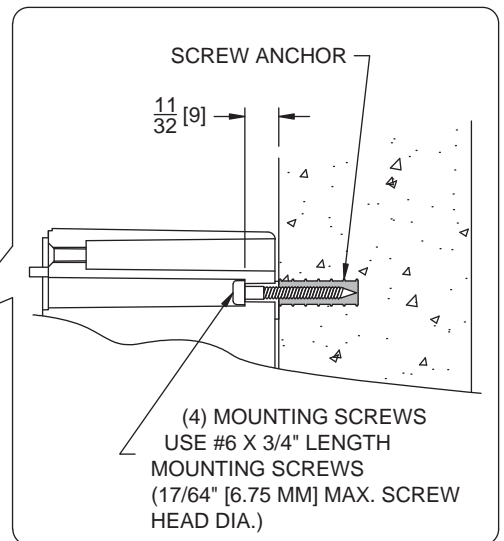
COVER INSTALLATION

IMPORTANT!

IF YOUR ENCLOSURE DOES NOT HAVE AN ALIGNMENT PIN AND/OR LABELS INSTALLED, ALIGN THE GASKET SHORT AND LONG SIDES AS SHOWN TO CREATE A WATERTIGHT SEAL WHEN THE COVER IS SECURED.

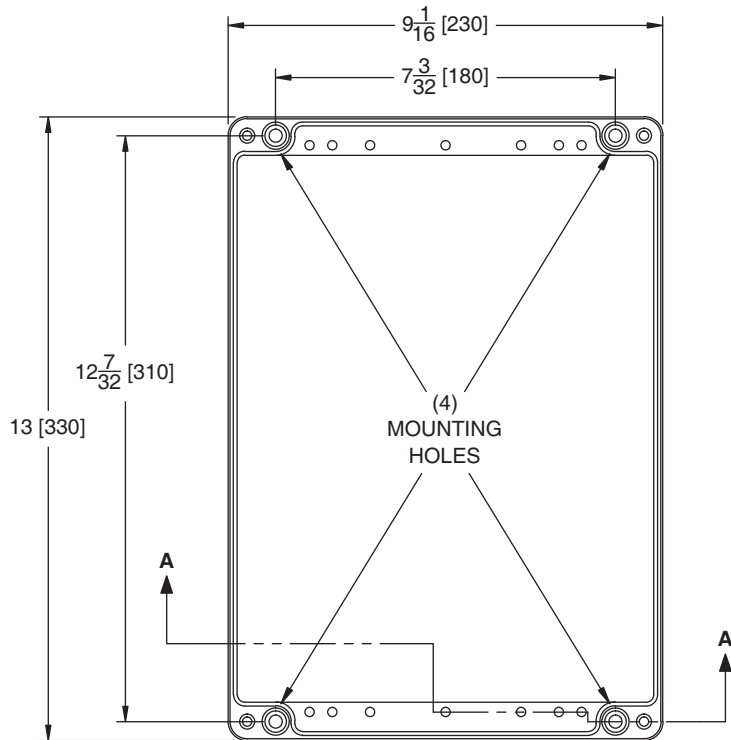


WALL MOUNT EXAMPLE

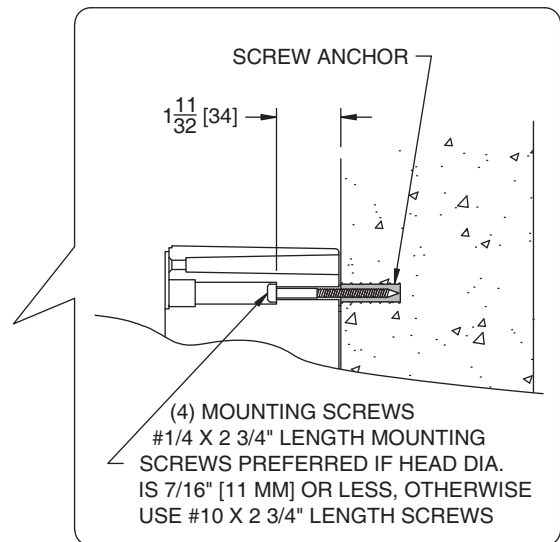


PD1230 ENCLOSURE

OUTLINE DRAWING

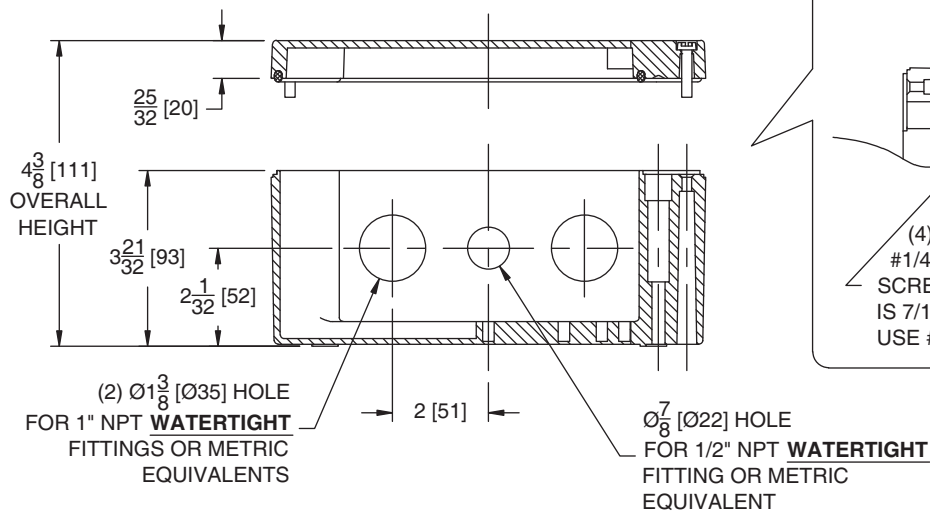


WALL MOUNT EXAMPLE



(4) MOUNTING SCREWS
 #1/4 X 2 3/4" LENGTH MOUNTING SCREWS PREFERRED IF HEAD DIA. IS 7/16" [11 MM] OR LESS, OTHERWISE USE #10 X 2 3/4" LENGTH SCREWS

SECTION A-A

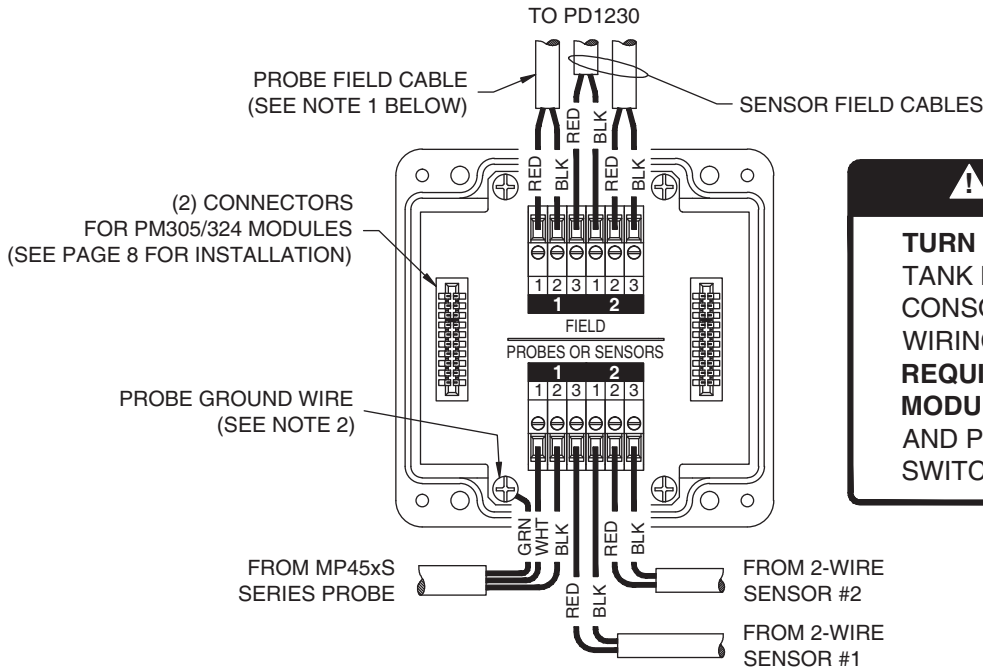


NOTES:

- ENCLOSURE RATING: UP TO NEMA 4X; IP 66, DIN 40053.
- DIMENSIONS: INCHES [MM].
- DRAWING SCALE: 1/4.

TYPICAL PD230 WIRING

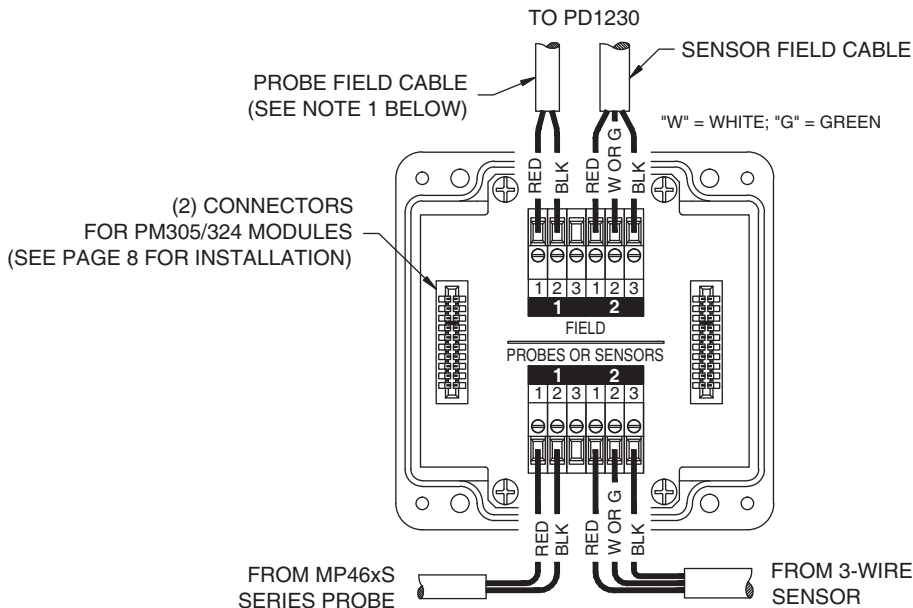
EXAMPLE #1: WIRING FOR MP45xS SERIES PROBE AND (2) 2-WIRE SENSORS



⚠ WARNING

TURN OFF POWER TO TANK MONITORING CONSOLE(S) BEFORE WIRING. INSTALL THE REQUIRED PM305/324 MODULES IN THE PD230 AND PD1230 BEFORE SWITCHING ON POWER.

EXAMPLE #2: WIRING FOR MP46xS SERIES PROBE AND 3-WIRE SENSOR



IMPORTANT!

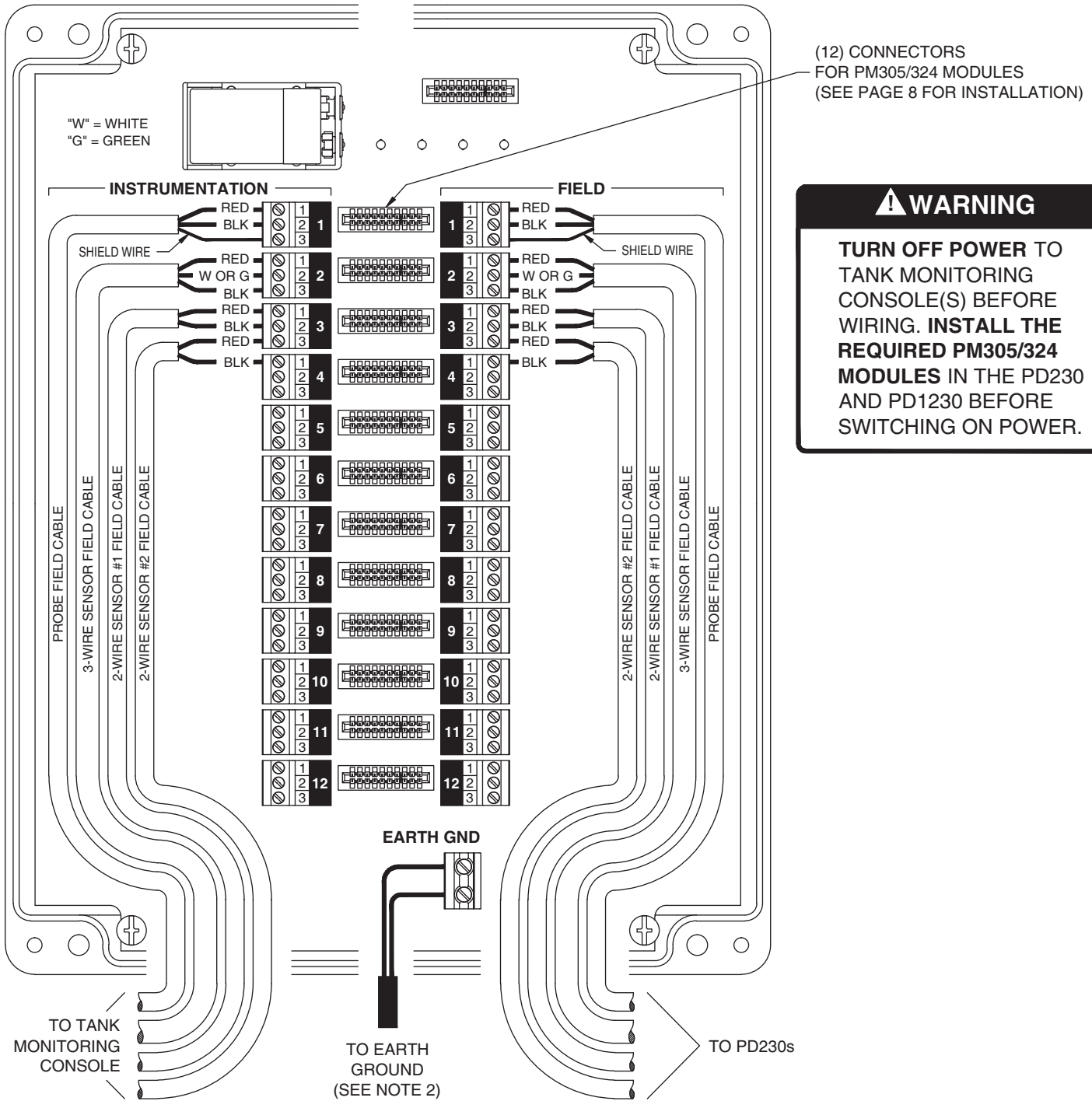
WIRED CIRCUITS ARE NOT FUNCTIONAL UNTIL THE REQUIRED MODULES ARE INSTALLED (SEE PAGE 8 FOR INSTALLATION). THE PM305/324 LEFT SIDE MODULE PROTECTS THE (3) "GROUP 1" CIRCUITS ON BOTH SIDES WHILE THE RIGHT SIDE MODULE PROTECTS THE (3) "GROUP 2" CIRCUITS ON BOTH SIDES.

NOTES:

1. THE PROBE FIELD CABLE SHIELD WIRE MUST BE CONNECTED IN THE PD1230 CONSOLE AND SHOULD BE CUT BACK AND LEFT UNTERMINATED AT THE PD230.
2. FOR THE MP45xS SERIES PROBE GROUND WIRE TO BE EFFECTIVE, THE PD230 ENCLOSURE MUST BE PROPERLY GROUNDED BY A QUALIFIED INSTALLER USING RIGID METAL CONDUIT OR OTHER APPROVED METHODS.

TYPICAL PD1230 WIRING

EXAMPLE: WIRING FOR PROBE, 2-WIRE SENSORS AND 3-WIRE SENSOR



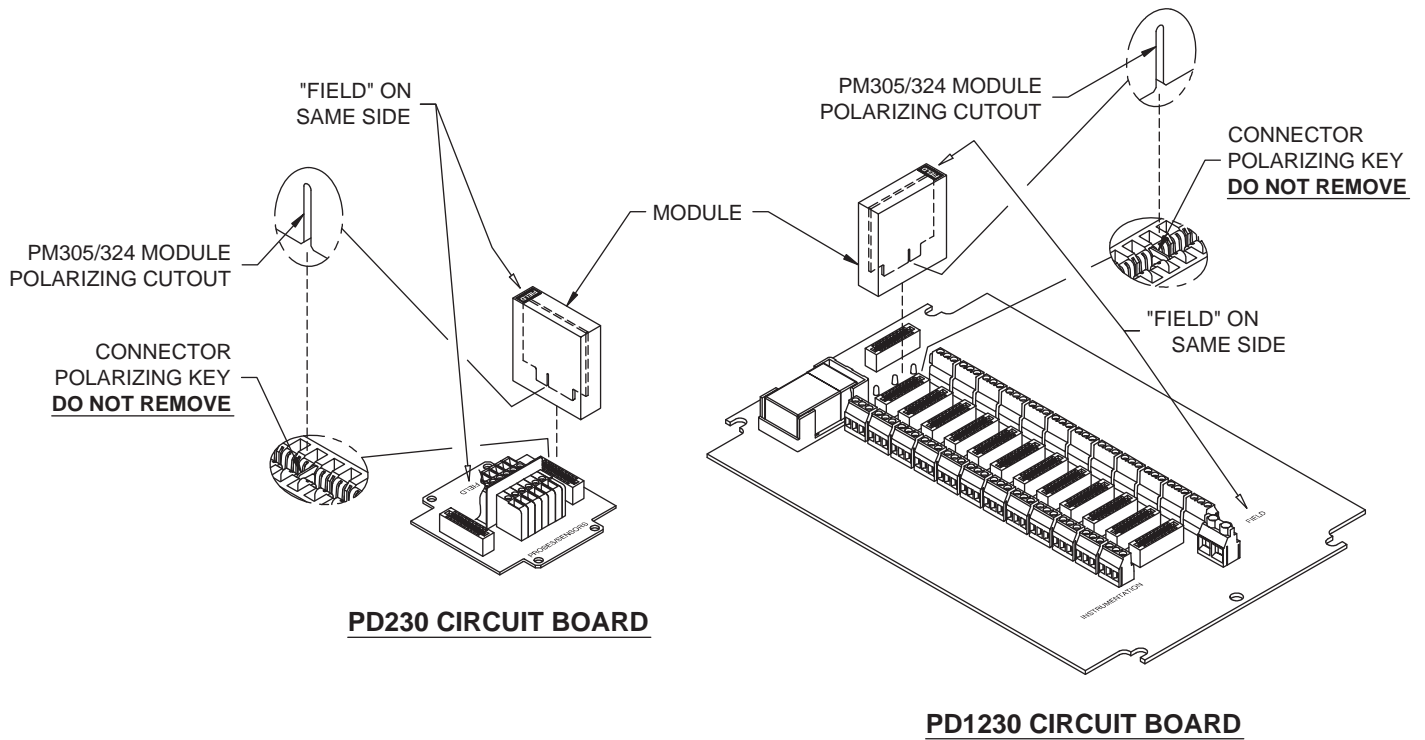
IMPORTANT!

WIRED CIRCUITS ARE NOT FUNCTIONAL UNTIL THE REQUIRED MODULES ARE INSTALLED (SEE PAGE 8 FOR INSTALLATION). EACH PM305/324 MODULE PROTECTS (3) CIRCUITS ON BOTH SIDES FOR GROUPS 1 TO 12.

NOTES:

1. THE PROBE FIELD CABLE SHIELD WIRE MUST BE CONNECTED IN THE PD1230 CONSOLE AND SHOULD BE CUT BACK AND LEFT UNTERMINATED AT THE PD230.
2. **WARNING:** TO INSURE INTRINSIC SAFETY, A 12 AWG WIRE MUST BE CONNECTED TO EACH TERMINAL. EACH WIRE MUST THEN BE CONNECTED TO THE SYSTEM EARTH GROUND (GROUND BUSS BAR) AT THE SERVICE PANEL. THE RESISTANCE BETWEEN THE EARTH GROUND TERMINAL BLOCK AND EARTH GROUND SHALL BE LESS THAN 1 OHM.

MODULE INSTALLATION: Align cutout with polarizing key for correct installation of module as shown below. In addition, the "FIELD" side of the module must be on the same side as the "FIELD" wording on the circuit boards for PD230 and PD1230.



MODULE TESTING: Modules can only be tested in the PD1230. Insert module into test connector and observe the LEDs. LEDs #1 to #3 (F1 - F3) indicate good circuits. LED #4 indicates a good battery. If LED #4 does not indicate, replace the standard 9V battery and continue the test. The (3) module circuits are independent, therefore if (1) circuit fails the other (2) will continue to protect wiring. However, If the failed circuit is protecting wiring, the module must be replaced as soon as possible. See page 2 for Pneumercator module order numbers.

