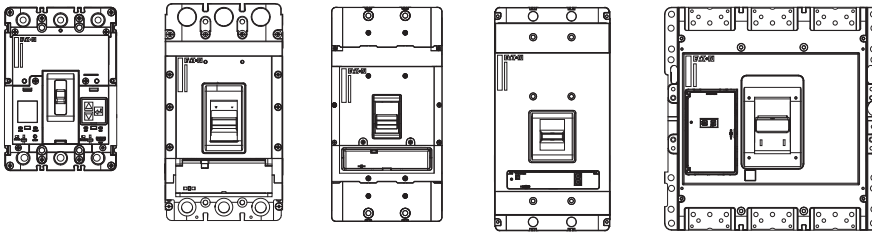


# Neutral Current Sensors - PXR Trip Units, Frames 2, 3, 4, 5 & 6

Instructions apply to:




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## WARNING

- (1) ONLY QUALIFIED ELECTRICAL PERSONNEL SHOULD BE PERMITTED TO WORK ON THE EQUIPMENT.
- (2) ALWAYS DE-ENERGIZE PRIMARY AND SECONDARY CIRCUITS IF A CIRCUIT BREAKER CANNOT BE REMOVED TO A SAFE WORK LOCATION.
- (3) DRAWOUT CIRCUIT BREAKERS SHOULD BE LEVERED (RACKED) OUT TO THE DISCONNECT POSITION.
- (4) ALL CIRCUIT BREAKERS SHOULD BE SWITCHED TO THE OFF POSITION AND MECHANISM SPRINGS DISCHARGED.

FAILURE TO FOLLOW THESE STEPS FOR ALL PROCEDURES DESCRIBED IN THIS INSTRUCTION LEAFLET COULD RESULT IN DEATH, BODILY INJURY, OR PROPERTY DAMAGE.

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## WARNING

THE INSTRUCTIONS CONTAINED IN THIS IL AND ON PRODUCT LABELS HAVE TO BE FOLLOWED. OBSERVE THE FIVE SAFETY RULES:

- DISCONNECTING;
- ENSURE THAT DEVICES CANNOT BE ACCIDENTALLY RESTARTED;
- VERIFY ISOLATION FROM THE SUPPLY;
- EARTHING AND SHORT-CIRCUITING; AND
- COVERING OR PROVIDING BARRIERS TO ADJACENT LIVE PARTS.

DISCONNECT THE EQUIPMENT FROM THE SUPPLY. USE ONLY AUTHORIZED SPARE PARTS IN THE REPAIR OF THE EQUIPMENT. THE SPECIFIED MAINTENANCE INTERVALS AS WELL AS THE INSTRUCTIONS FOR REPAIR AND EXCHANGE MUST BE STRICTLY ADHERED TO PREVENT INJURY TO PERSONNEL AND DAMAGE TO THE SWITCHBOARD.

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**Section 1: Neutral Current Sensor Installation**

Ground Fault Trip Units detect ground fault currents through Residual Sensing. If the system neutral is grounded and residual ground fault is desired, but no phase to neutral loads are used, a neutral current sensor is not necessary. In that case, a jumper is required between the circuit breaker's gray and white wires.

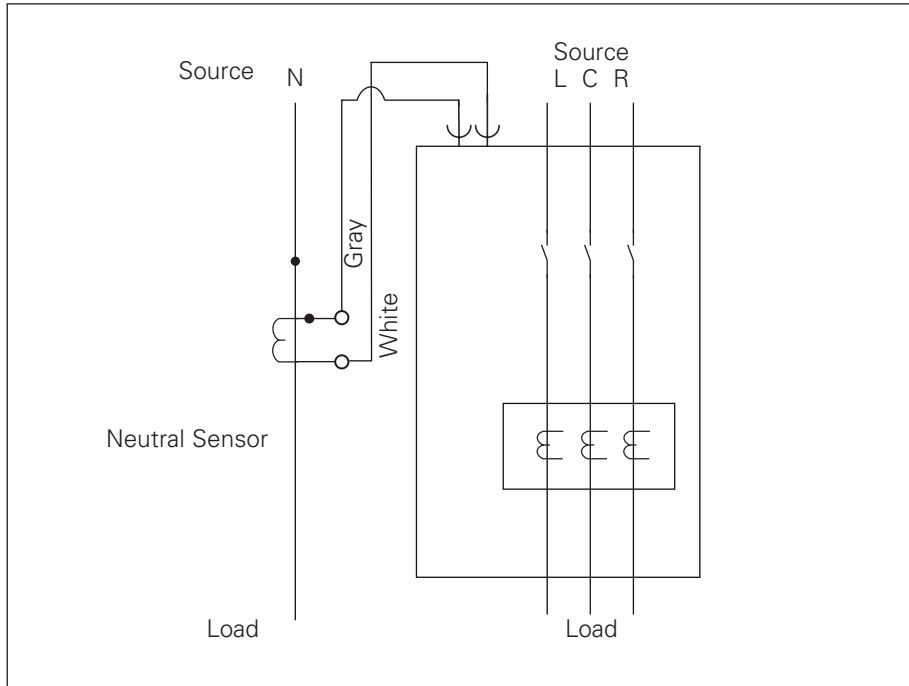
If the system neutral is grounded and phase to neutral loads are used, then the neutral current sensor (see Figure 1) must be used to account for this load in the residual ground fault sensing. It has the same turns ratio as the phase current sensors in the circuit breaker.

**The factory installed jumper wire must be removed before installing the neutral current sensor.**

For all neutral sensors, primary connections should be made by routing or connecting the source neutral connection on the side or terminal where the dot is placed. Note: the dot must face the current source. Secondary connections are made by terminating the gray and white colored wires from the trip unit to the terminals labeled with those colors. Refer to Figure 2, 3, 4, or 5 for dimensional and labeling details.

Frame	Application	Catalog#	Trip Unit Rating Where Used	Details
PD2	Cable Type	PDG2XNCTD0100	60A, 63A, 100A	Figure 2
PD2	Cable Type	PDG2XNCTD0225	150A, 160A, 225A, 250A	Figure 2
PD2	Busbar Type	PDG2XNCTB0100	60A, 63A, 100A	Figure 3
PD2	Busbar Type	PDG2XNCTB0225	150A, 160A, 225A, 250A	Figure 3
PD3	Busbar Type	PDG3XNCTB0600	125A, 250A, 400A, 600A, 630A	Figure 3
PD4	Busbar Type	PDG4XNCTB0800	800A, 1000A	Figure 3
PD5	Busbar Type	PDG5XNCTB1200	800A, 1200A, 1600A	Figure 4
PD6	Busbar Type	PDG6XNCTB2500	1600A, 2000A, 2500A	Figure 5

**Table 1. Catalog Number and Use Details**



**Figure 1. Neutral Current Sensor Application**

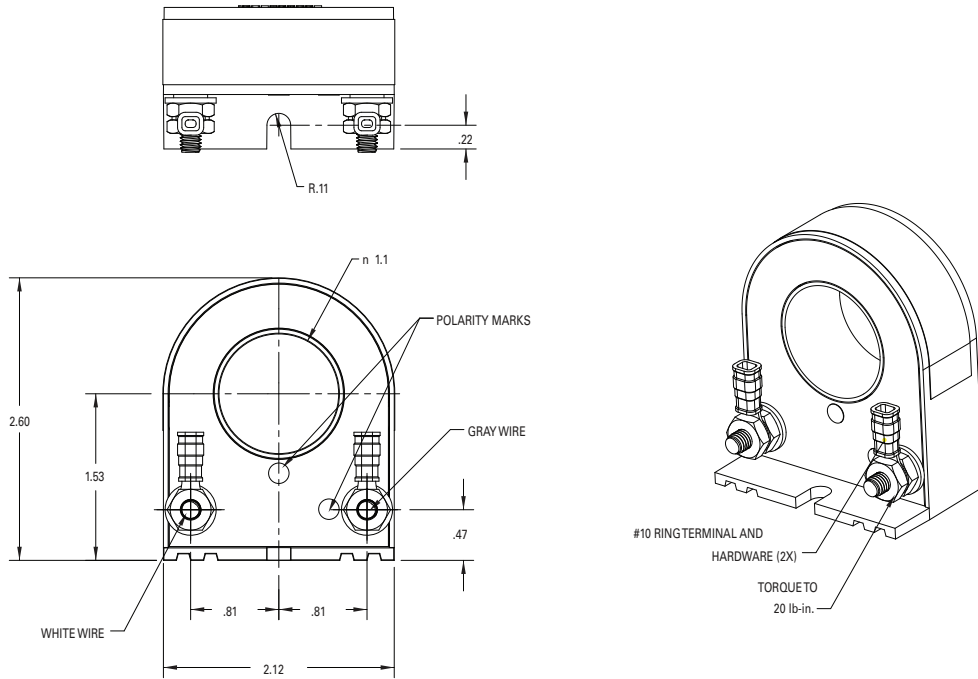


Figure 2. PD2-Cable type Dimensions

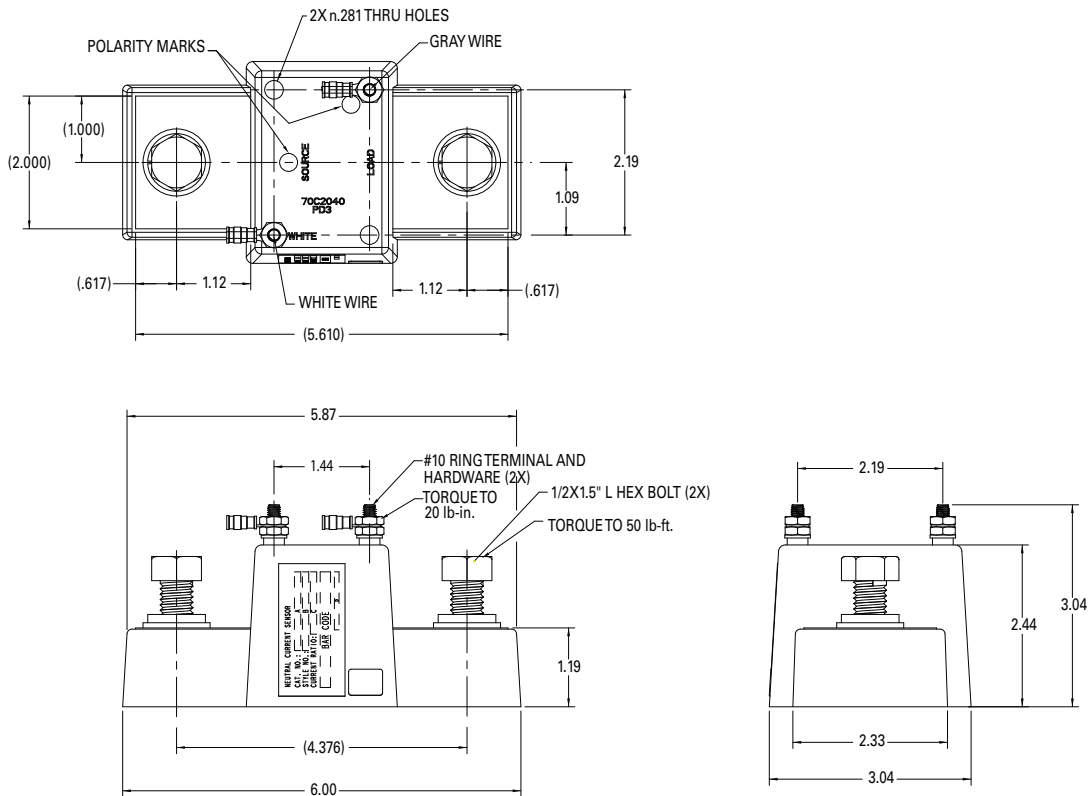


Figure 3. PD2, PD3 and PD4 Busbar Type Dimensions

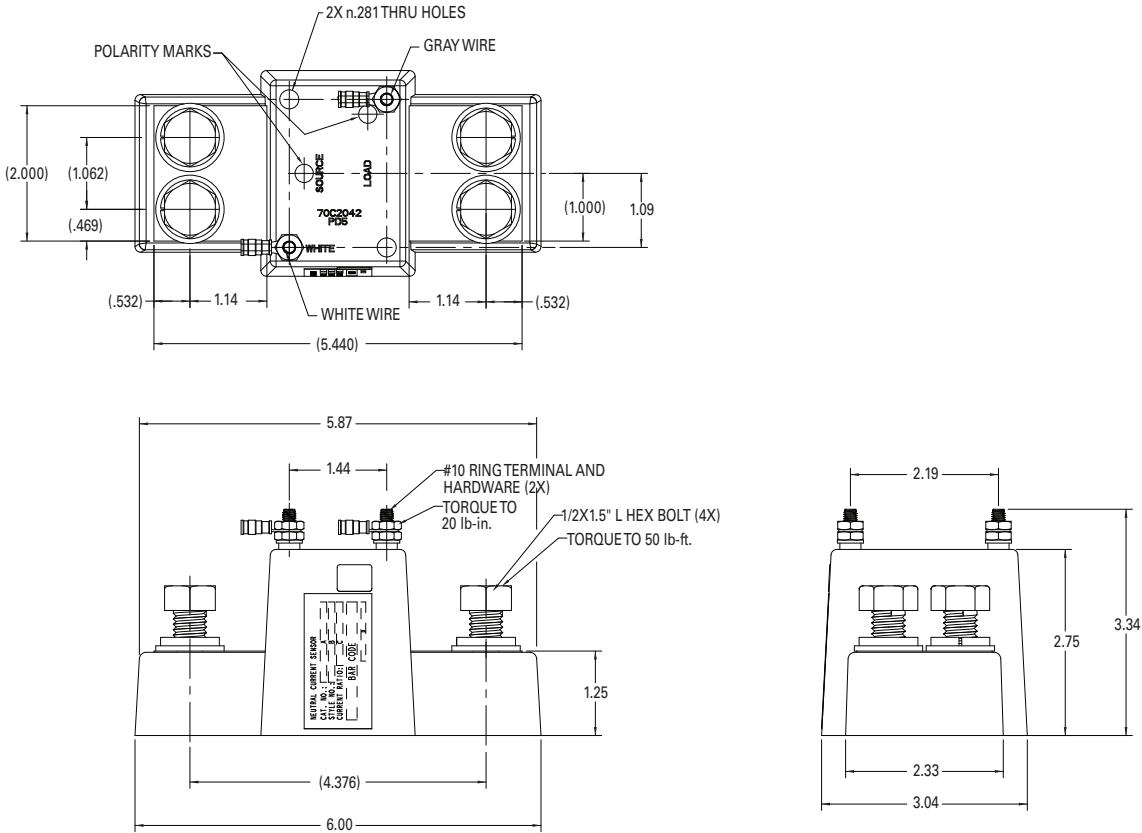


Figure 4. PD5 Busbar Type Dimensions

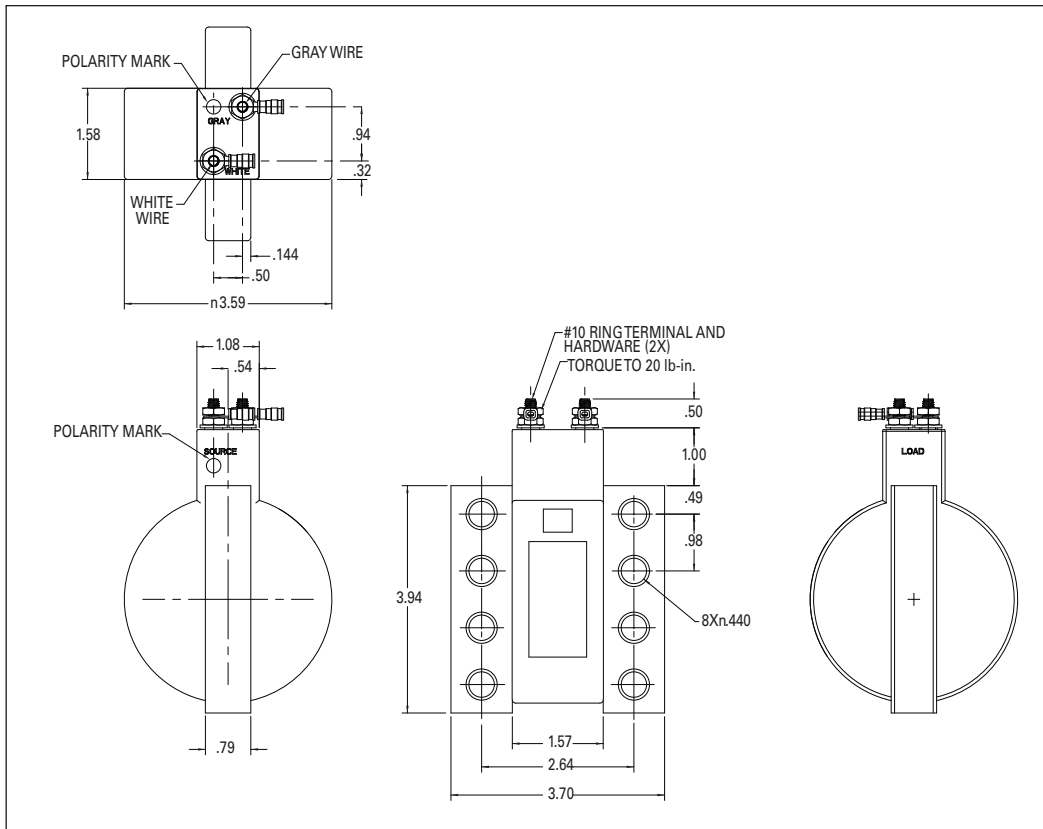


Figure 5. PD6 Busbar Type Dimensions

## Section 2: Performance Testing For Ground Fault Circuit Breakers

Please consult Instruction Leaflet number IL012125EN for general instructions to aid you in ground fault testing of Power Defense circuit breakers with PXR electronic trip units.

### General Test Instructions

The interconnect system shall be evaluated in accordance with the equipment assembler's detailed instruction by qualified personnel.

The polarity of the neutral sensor connection (if used) must agree with equipment assembler's detailed instructions to avoid improper operations following apparently correct simulated test operations. Where a question exists, consult the specifying engineer and/or equipment assembler.

The grounding points of the system shall be verified to determine that ground paths do not exist that would bypass the sensors. High-voltage testers and resistance bridges may be used.

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### IMPORTANT

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**THE POLARITY OF THE SENSOR CONNECTIONS IS CRITICAL. ALWAYS OBSERVE THE POLARITY MARKINGS ON THE INSTALLATION DRAWINGS. THE POLARITY MARKINGS ARE IDENTIFIED AS WHITE DOTS ON THE TRANSFORMERS. TO INSURE CORRECT GROUND FAULT EQUIPMENT PERFORMANCE, CONDUCT FIELD TESTS TO COMPLY WITH NATIONAL ELECTRIC CODE REQUIREMENTS UNDER ARTICLE 230-95-C. SEE PERFORMANCE TESTING INSTRUCTIONS ON IL012125EN.**

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**Note:** Since the ground fault circuit breakers derive their operating power from the phase current and not from the neutral current, passing current through the neutral sensor only will not properly test the ground fault feature.

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