



## **NORTHSHORE SAFETY Installation, Testing, and Operating Procedures**

### **30 AMP PORTABLE AND PERMANENT SERIES GFCI**

### **SINGLE and MULTIPHASE**

#### **IMPORTANT!**

Please read all the information on this sheet.

#### **SAVE THESE INSTRUCTIONS!**

#### **NOTICE**

BEFORE USING READ INSTRUCTIONS COMPLETELY. TO BE INSTALLED BY A QUALIFIED ELECTRICIAN IN ACCORDANCE WITH NATIONAL AND LOCAL ELECTRICAL CODES AND THESE INSTRUCTIONS.

#### **CAUTION!**

RISK OF ELECTRIC SHOCK, BURN, OR EXPLOSION. DISCONNECT POWER BEFORE INSTALLING. NEVER WIRE ENERGIZED ELECTRICAL COMPONENTS. FAILURE TO DO SO MAY CAUSE SEVERE SHOCK, PERSONAL INJURY, OR DEATH.

#### **WARNING!**

- Ground Fault Circuit Interrupter (GFCI) is a safety device under normal use and is not intended to promote activity of elevated risk.
- Do not use this GFCI if it fails to function as instructed. Never attempt to tamper with this device.
- This GFCI should never be used as a switch to connect or disconnect power. (Power should be disconnected at main power feed or by a secondary switch located at the primary feed of GFCI).
- This GFCI is not an over current protection device. (An appropriate current breaker should be used in series at primary power feed)

#### **CAUTION!**

- Do not use this device to feed power to Life Support apparatus.
- To minimize nuisance tripping: do not use this device on swimming pool equipment installed prior to 1965 NEC code, limit load cable to 250 feet and do not use on electric dryers and ranges with frames grounded by Neutral conductor.

#### **NOTICE**

- A GFCI is a device designed to interrupt power when a ground fault exceeds a predetermined value. The interruption of power is fast in order to prevent injuries. The human body is conductive to electricity. Any electrical apparatus is a potential shock hazard when used near wet locations.
- The GFCI constantly monitors the current balance of the conductors supplying power to the load. When a ground fault occurs, by leakage or by shock, the imbalance of current is sensed and the GFCI trips when the ground fault exceeds 0.006 Amps. Consult NSS about higher trip threshold ELCIs. ELCIs follow same wiring instructions as GFCIs.

#### **WARNING!**

A GFCI CANNOT DO THE FOLLOWING:

- Will not protect line side
- Will not protect you when touching two current carrying conductors of opposite polarity (GFCI recognizes this as a load)
- Will not protect you when touching a line of another circuit
- Will not detect or interrupt overcurrent

### **NORTH SHORE SAFETY'S TWO-YEAR LIMITED MANUFACTURER'S WARRANTY**

North Shore Safety warrants to the consumer its offering of LineGard Ground Fault Circuit Interrupters (GFCIs) to be free from defects in materials and workmanship under normal use and service for a period of two years from the manufacture date. North Shore Safety, at its option will repair or replace the defective GFCIs without charge within a two year period from the date of manufacture, provided that the defect occurred during normal use and was installed according to all published instructions. All returns must be authorized by a North Shore Safety representative. In the event of product failure please contact a North Shore Safety representative at 1-440-205-9188 to obtain a Return Goods Authorization Number (RGA) prior to returning any product to North Shore Safety. North Shore Safety will refuse any item if prior Return Goods Authorization has not been granted. Defective units must be returned prepaid freight, with a description of the problem, and with an attached RGA number referenced to the Quality Assurance Dept., North Shore Safety, Ltd., 7335 Production Drive, Mentor, OH44060. Determination of Warranty compliance is solely at the discretion of North Shore Safety and North Shore Safety's disposition is final.

#### **Disclaimer**

North Shore Safety will not be liable, directly or indirectly, for any cost whatsoever associated with installation or removal of any device, or for any personal injury, property damages, or incidental, indirect, or consequential damages of any kind whatsoever as a result of any defective device. The exclusive remedy under this Warranty is the repair or replacement of the defective device. In no case shall North Shore Safety's liability exceed the net purchase price. This Warranty is void if the device is not properly installed, tampered with, opened, abused, or not used according to label instructions and ratings, and/or published specifications.



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#### SPECIFICATIONS

##### TECHNICAL:

Rated Voltage:	120VAC, 208VAC, 240VAC, 277VAC, 120/240VAC, 120/208VAC Dual Voltage, 120/208VAC 3Ø, 208VAC 3Ø, 240VAC 3Ø (277VAC non-U.L.)
Operating Voltage Range:	85% to 110% of rated
Current:	Up to 30 Amps or Wiring Device Rating
Frequency:	60 Hz, 50Hz (available non-U.L.)
Trip Level:	5 +/- 1mA (for ELCIs trip level +/- 1mA)
Phase:	Single, Dual Voltage, and Three-Phase
Response Time:	25 mS max @500 Ohm Fault.
Dielectric Withstand:	1500 VRMS across contact 4000 VRMS between conductors and enclosure
Surge Withstand:	6000V impulse, 0.5 microsecond rise time, 100KHZ ringing frequency with 40% decay per cycle
Operating Temperature range:	-35°C to +66°C
Leakage Current @ 93% Humidity:	Zero
Overload Current:	180 Amps, 50% Inductive (25 cycles)
RF Noise Susceptibility:	Normal Operation with 0.5 VRMS injected on power line with Frequencies up to 450 MHz.
Let go Line Voltage:	60% of Rated
Grounded Neutral Detection:	2 Ohms or less (on applicable models only)

##### GENERAL:

Construction:	Industrial Grade Design
Type:	Class A (ELCIs U.L. 1053 compliant)
Power-Up Type *:	Auto or Manual
Endurance:	5000 Operations Minimum at Rated Load
Open Neutral Protection:	Trip Upon Loss of Neutral (on applicable models only)
Grounded Neutral Protection:	Trips if Ground and Neutral touch at load side (on applicable models only)
Power ON Indication:	Lighted Green LED
Power FAULT Indication:	Blinking Red LED, plus Optional Annunciator or AC/DC Outputs (on applicable models only)
Enclosure	NEMA 4X/6P
Mounting Type:	Panel, Surface and Portable
Wiring Application:	3,4,5 Wire Single, Split, and 3-Phase
Wiring Connections:	Portable (in-line) and Permanent (fixed mount) (see wiring instructions)
Switch Interface	Double Insulated
Latching Mechanism:	Electromagnetic
False trip due to impact:	None
Agency Approval	U.L., cU.L., and cCSAus (U.L.942 and CSAC22.2 No. 144) (277VAC non-U.L.) (ELCI devices are U.L. 1053 compliant)

##### IMPORTANT NOTE:

\* Manual configuration should be specified when automatic power up would create an unsafe condition after restoration of circuit power.

\*\* ELCI devices follow same wiring instructions as GFCIs.



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**DANGER: HAZARD OF ELECTRICAL SHOCK, BURN OR EXPLOSION. Disconnect power before you start installation. Failure to do so will cause severe shock, personal injury or death.**

#### SINGLE PHASE



#### IMPORTANT:

1. Read all the instructions in this leaflet and on the device label.
2. Identify all the feature and wires (see drawing).
3. Identify LINE wires and LOAD wires.
4. Strip wires to 5/8", or as recommended for your connections.
5. Choose the right wiring application and connect wires according to the drawing on this page or attached supplemental pages and the instructions below.

#### 120VAC, 277VAC Applications:

- Connect GFCI Line-Hot wire (Solid Black) to primary plug Hot.
- Connect GFCI Line-Neutral wire (Solid White) to primary plug Neutral.
- Connect GFCI Line-Ground wire (Green) to primary plug Ground.
- Connect GFCI Load-Hot wire (Black) to secondary receptacle Hot (Load)
- Connect GFCI Load-Neutral wire (White) to secondary receptacle Neutral (Load)
- Connect GFCI Load-Ground wire (Green) to secondary receptacle Ground (Load)

#### 240VAC, 208VAC Applications:

- Connect GFCI Line-Line 1 wire (Solid Black) to primary plug Line 1.
- Connect GFCI Line-Line 2 wire (Solid White) to primary plug Line 2.
- Connect GFCI Line-Ground wire (Green) to primary plug Ground.
- Connect GFCI Load-Line 1 wire (Black) to secondary receptacle Hot (L1)
- Connect GFCI Load-Line 2 wire (White) to secondary receptacle Hot (L2)
- Connect GFCI Load-Ground wire (Green) to secondary receptacle Ground (G)

#### TESTING AND TROUBLESHOOTING

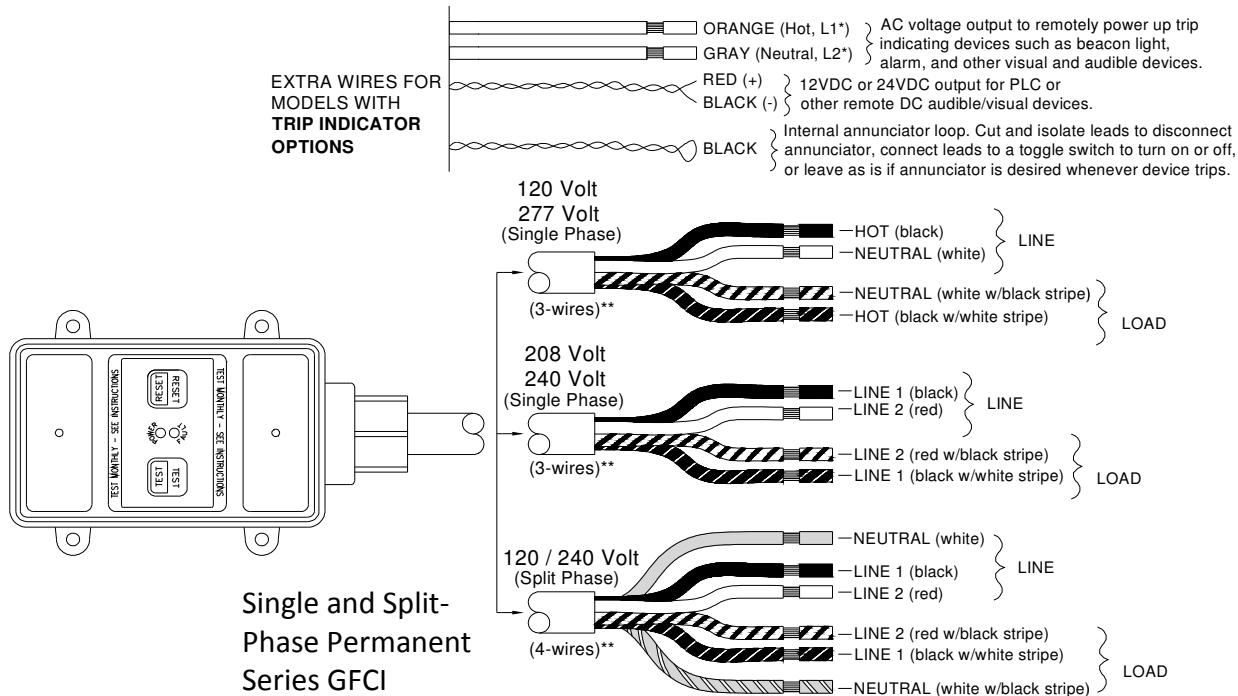
1. Apply rated power to GFCI.
2. Press and release RESET button, Green Light (Power) should turn ON.  
(For Auto Power-Up model, Green Light will automatically turn on when power is initiated or restored.)
3. Press Test Button. Green Light (Power) turns off and Red Blinking Light (Fault) turns on.
4. CHECKING FOR CORRECT WIRING:
  - If GFCI is wired to protect a receptacle, plug a lamp into the protected receptacle. Press and release the RESET button, lamp should turn on. Press the TEST button. Lamp should turn off. If lamp stays on when pressing the TEST button, or if lamp does not Light when pressing RESET button, turn main power off, check and correct your wiring connections. Repeat steps 1-4. If problem persists, DO NOT USE THIS GFCI. Consult a qualified electrician for assistance or replacement.
  - If GFCI is wired to protect equipment, press and release RESET button. Verify that the equipment power is on. Press TEST button. Equipment power should turn off. If equipment power does not come on when pressing and releasing RESET button, or if power stays on when pressing TEST button, turn main power off, check and correct your wiring connections. Repeat steps 1-4. If problem persist, DO NOT USE THIS GFCI. Consult a qualified electrician for assistance or replacement.



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### SINGLE and MULTIPHASE



\* 240V MODELS

\*\* Ground wire is connected externally. Ground wire does not enter or exit the GFCI box. Although GFCI does not require Ground to operate, Ground connection is recommended and should be made at junction box.

#### IMPORTANT:

1. Read all the instructions in this leaflet and on the device label.
2. Identify all the features and wires (see above drawing).
3. Identify Line wires (solid color) and Load wires (with stripes).
4. Verify that the ratings on the device match your field line ratings.
5. Disconnect power at main panel.
6. Determine GFCI location and drill mounting holes using template provided.
7. Strip wires to 5/8".
8. Feed wires into junction box through appropriate hole and secure cable or conduit end of GFCI to junction box.
9. Choose the right wiring application and connect wires according to the above drawing.
10. Secure GFCI box to mounting panel.

**NOTE: ALL WIRE CONNECTIONS SHOULD BE MADE WITH APPROPRIATE RATED WIRE CONNECTORS.**

#### 3-Wires, 120VAC application:

- Connect Field-Hot wire to GFCI Line-Hot wire (Solid Black) using a wire connector.
- Connect Field-Neutral wire to GFCI Line-Neutral wire (Solid White) using a wire connector.
- Connect GFCI Load-Hot wire (Black W/White Stripe) to protected equipment or receptacle Hot.
- Connect GFCI Load-Neutral wire (White W/Black Stripe) to protected equipment or receptacle Neutral.

#### 3-Wires, 240VAC application:

- Connect Field-Line 1 wire to GFCI Line-Line1 wire (Solid Black) using a wire connector.
- Connect Field-Line2 wire to GFCI Line-Line2 wire (Solid Red) using a wire connector.
- Connect GFCI Load-Line1 wire (Black W/White Stripe) to protected equipment or receptacle Line 1.
- Connect GFCI Load-Line2 wire (Red W/Black Stripe) to protected equipment or receptacle Line 2.

#### 4-Wires, 120/240VAC application:

- Connect Field-Line 1 wire to GFCI Line-Line1 wire (Solid Black) using a wire connector.
- Connect Field-Line2 wire to GFCI Line-Line2 wire (Solid Red) using a wire connector.
- Connect Field-Neutral wire to GFCI Line-Neutral wire (Solid White) using a wire connector.
- Connect GFCI Load-Line1 wire (Black W/White Stripe) to protected equipment or receptacle Line 1.
- Connect GFCI Load-Line2 wire (Red W/Black Stripe) to protected equipment or receptacle Line 2.
- Connect GFCI Load-Neutral wire (White W/Black Stripe) to protected equipment or receptacle Neutral.

#### TESTING AND TROUBLESHOOTING

1. Restore the power to the GFCI.
2. Press and release RESET button, Green Light (Power) should turn ON. (For Auto Power-Up model, Green Light will automatically turn on when power is initiated or restored.)
3. Press Test button, Green Light (Power) turns off and Red Blinking Light (Fault) turns on.
4. CHECKING FOR CORRECT WIRING:
  - If GFCI is wired to protect a receptacle, plug a lamp into the protected receptacle. Press and release the RESET button, lamp should turn on. Press the TEST button. Lamp should turn off. If lamp stays on when pressing TEST button, or if lamp does not Light when pressing RESET button, turn main power off, check and correct your wiring connections. Repeat steps 1-4, if problem persists, **do not use this GFCI**. Consult a qualified electrician for assistance or replacement.
  - If GFCI is wired to protect equipment, press and release RESET button. Verify that equipment power is on. Press TEST button. Equipment power should turn off. If equipment power does not come on when pressing and releasing RESET button, or if power stays on when pressing TEST button, turn main power off, check and correct your wiring connections. Repeat steps 1-4. If problem persists, **do not use this GFCI**. Consult a qualified electrician for assistance or replacement.

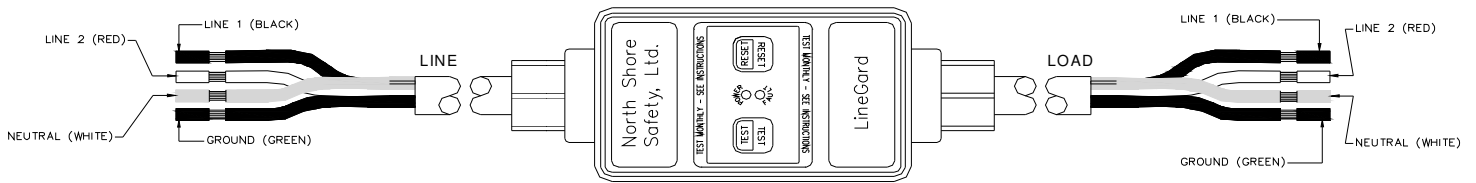


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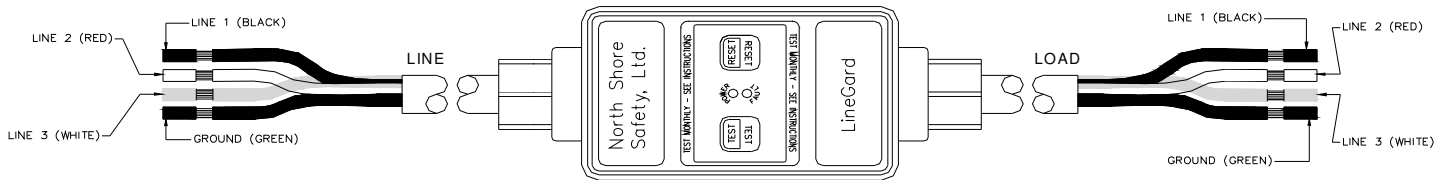
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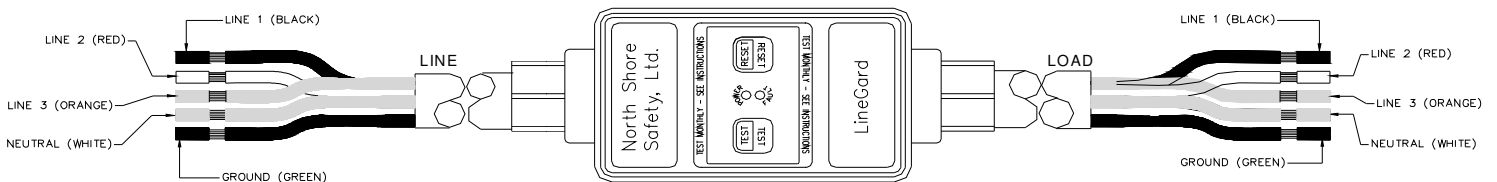
### PORTABLE MULTIPHASE SERIES GFCI



120 / 208 Volt  
120 / 240 Volt  
(Split Phase)  
(4-wires)\*\*



208 / 240 Volt  
(Three Phase) (No Neutral)  
(4-wires)\*\*



120 / 208 Volt  
(Three Phase) (With Neutral)  
(5-wires)\*\*

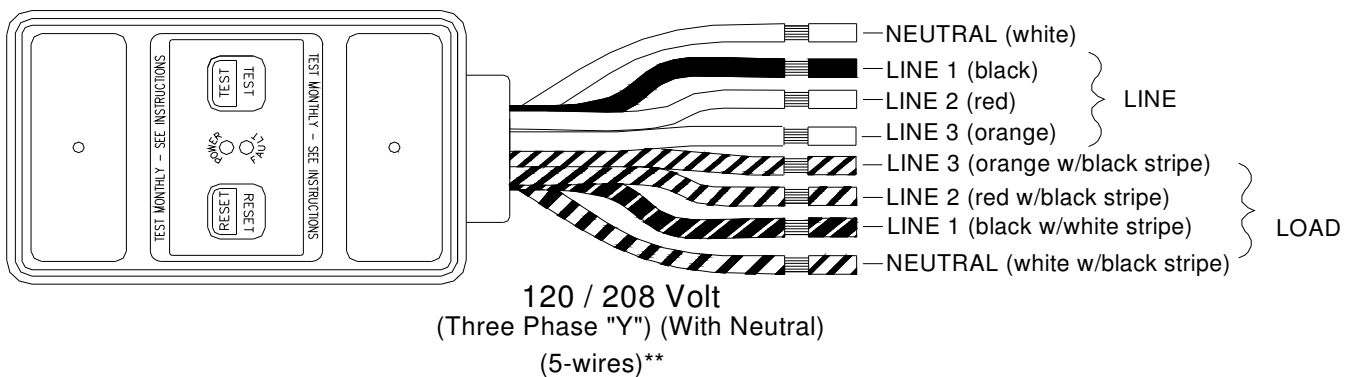
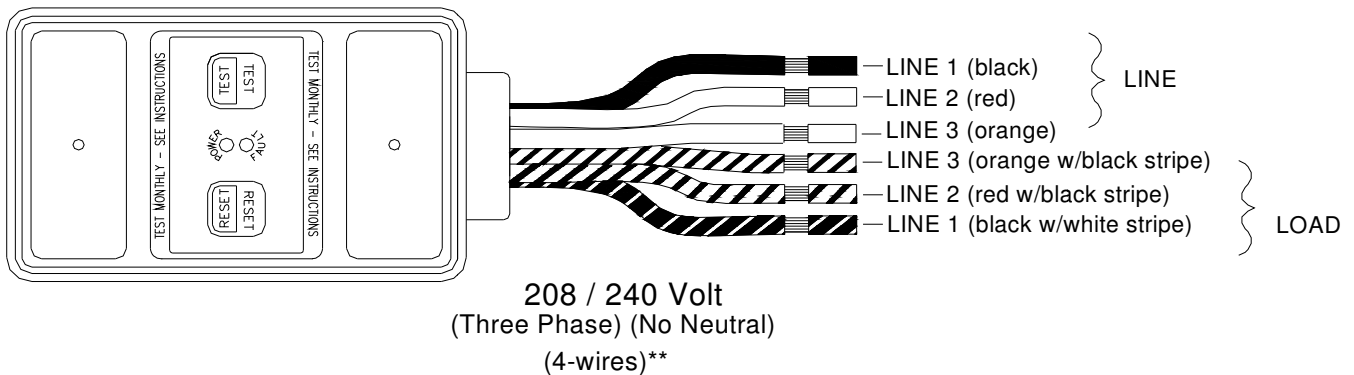
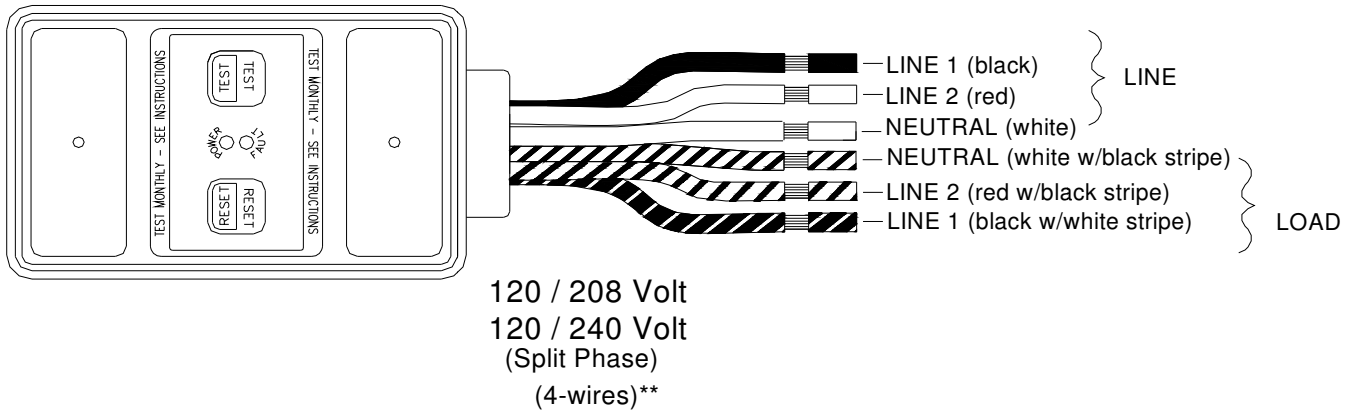


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### PERMANENT MULTIPHASE SERIES GFCI



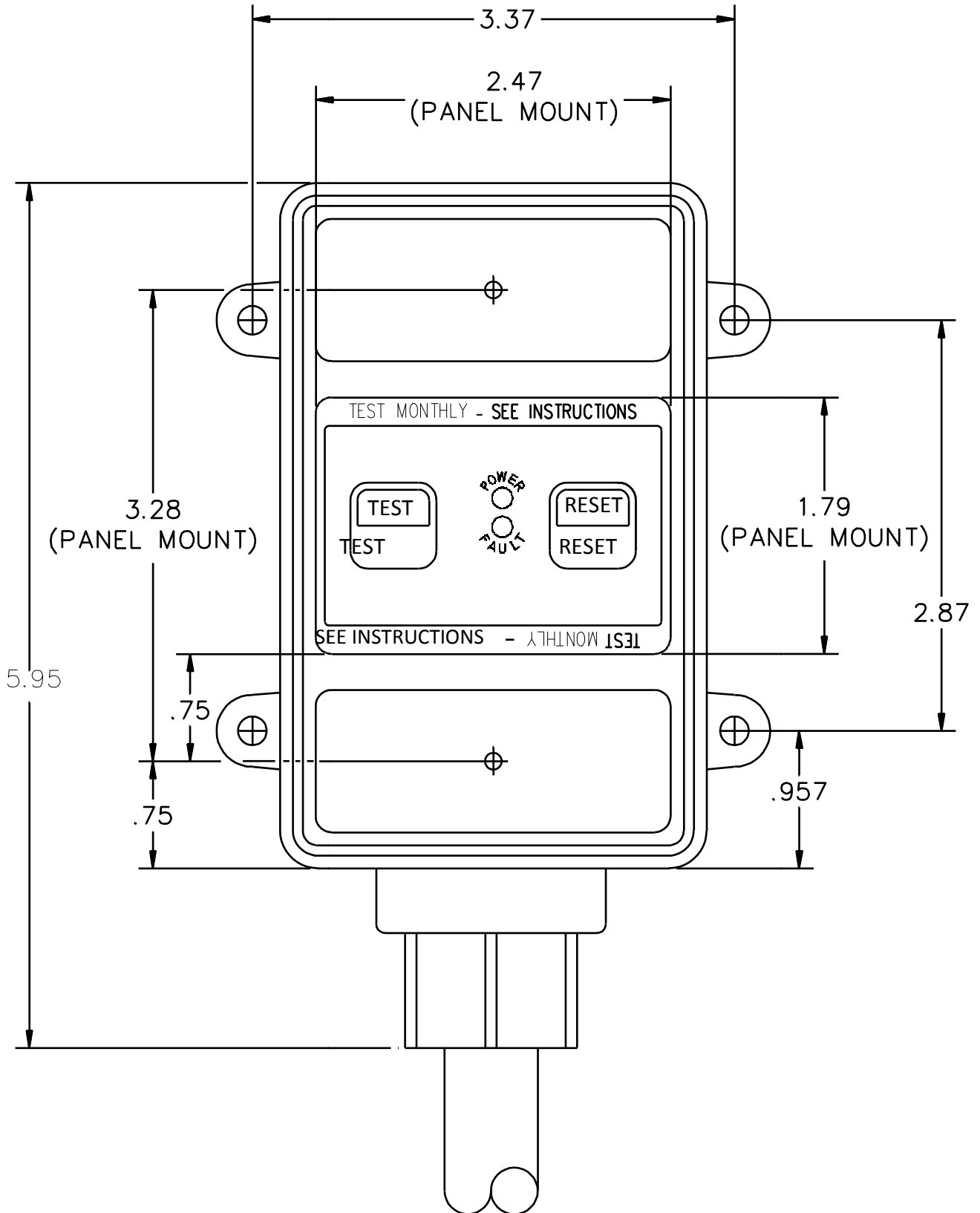
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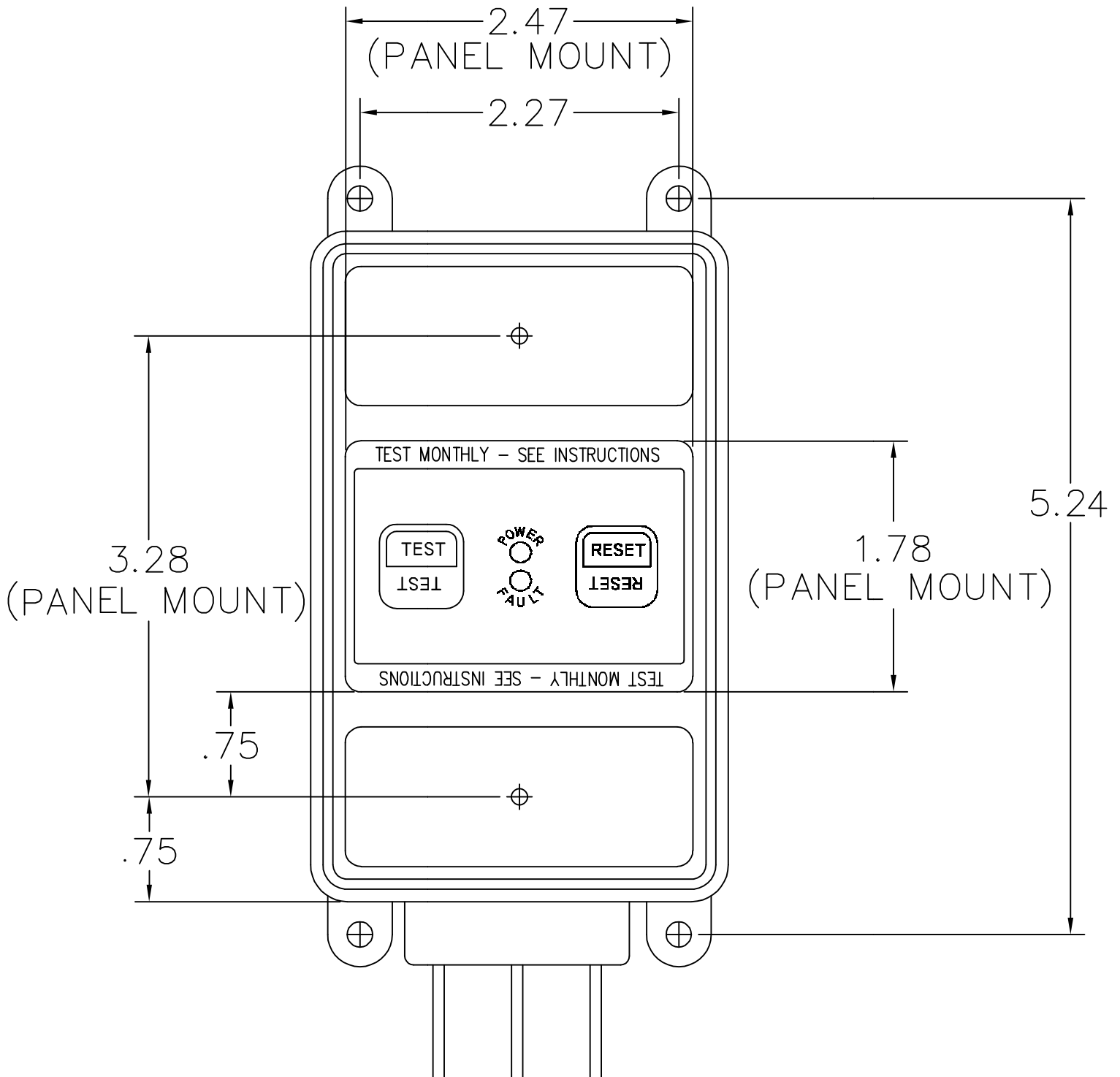
Mounting option 1: Installation template (actual size)



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Mounting option 2: Installation Template (actual size)