



Ground Fault Circuit Interrupter



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INSTALLATION AND TESTING PROCEDURE

IMPORTANT!

THIS DEVICE MUST BE INSTALLED BY A QUALIFIED PERSON WHO UNDERSTANDS ELECTRICAL CIRCUITS.

Please read all the information on this sheet.

WARNING

A **Ground Fault Circuit Interrupter (GFCI)** is an electrical safety device that under normal use is intended to mitigate electric shock hazard. Use this product only within the specified operating parameters. (Failure to do so may result in bodily injury.) Consult a licensed electrician for assistance on installation and repairs. Do not use this GFCI if it fails to function as instructed. Never attempt to tamper with this device. This GFCI must never be used as a switch to connect or disconnect power. (Power should be disconnected at main power feed or by secondary switch located at the primary feed of GFCI.) This GFCI is not an over-current protection device. (An appropriate fuse or circuit breaker must be used in series at primary power feed.) This GFCI does not provide protection against shocks caused by holding both circuit conductors. This GFCI does not provide protection against electrical shocks generated by the conductors supplying power to the device. **Note: primary feed to GFCI is live even when GFCI is tripped. (Power should be disconnected at main service panel before servicing load side of GFCI.)**

- ◆ Do not use this device to feed power to life support apparatus.
- ◆ To minimize nuisance tripping:
 - ◇ Do not use on swimming pool equipment installed before 1965 NEC code.
 - ◇ Do not use on electric clothes dryers or electric ranges with frames grounded by neutral conductor.
- ◆ Installation must comply with local and national electrical codes (NEC).
- ◆ During installation, turn power off at the service panel to prevent serious injuries.

What is a GFCI?

A GFCI is a device designed to interrupt power when a ground fault (a current that takes a path to ground) exceeds a predetermined value. This power interruption is quickly accomplished to prevent serious injuries.

Why do we need a GFCI?

The human body is conductive to electricity, and electric shocks can be fatal. Any electrical tool or appliance is a potential shock hazard, especially when used near wet locations; and this is where a GFCI is needed the most. This is why most electrical codes require GFCI protection in kitchens, bathrooms, garages, outdoor outlets, laundry rooms, workshops, etc.

North Shore Safety's GFCI, LineGard®, will offer such protection. Its safety scope surpasses its peers to include open supply protection (most receptacle type GFCIs do not sense open neutral condition) as well as dual indication of operating modes, with fault indication or power status.

How does a GFCI operate?

The GFCI constantly monitors the current-balance of the conductors supplying power to the load. When a ground fault occurs - by a leakage or by shock - the imbalance of current is sensed and the GFCI trips when the ground fault exceeds 5 mA +/- 1 mA. The tripping action must be within a fraction of a second to prevent serious injuries.

What a GFCI cannot do:

- ◆ Will not protect the circuit's line side.
- ◆ Will not protect you when touching two current carrying conductors of opposite polarity (the GFCI sees this as a load).
- ◆ Will not protect you when touching a line of another circuit.
- ◆ Will not detect over-current.

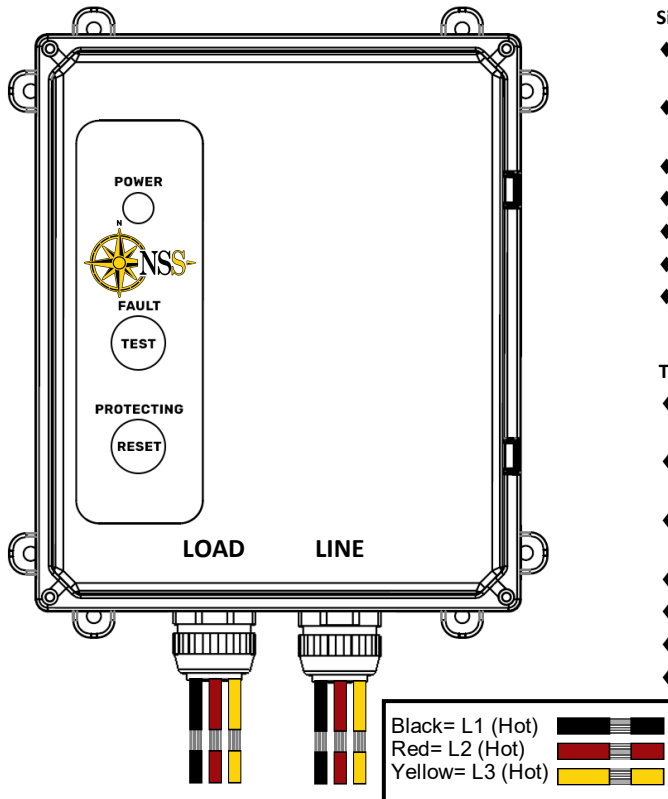
North Shore Safety TWO YEAR LIMITED MANUFACTURER'S WARRANTY

North Shore Safety warrants to the consumer its Line-Gard Ground Fault Circuit Interrupter (GFCI) to be free from defects in materials and workmanship, under normal use and service, for a period of two years from date of purchase. North Shore Safety, at its option, will repair or replace the defective GFCI without charge within 2-years of the date of the product's purchase provided that the defect occurred during normal use. The defective unit must be returned freight prepaid, with a RGA (Returned Goods Authorization) including a description of the problem, and a proof of purchase date to the Quality Assurance Dept. North Shore Safety, Ltd. 7335 Production Drive, Mentor, OH 44060.

North Shore Safety will not be liable, directly or indirectly, for installation or removal of this device, or for any personal injury, or property damages, or incidental, indirect, or consequential damages of any kind, as a result of a 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 purchase price. This warranty is void or not covered if this device is found to be: not properly installed, tampered with, not used according to label instructions and ratings, enclosure breached (button cover label, conduit hubs, vent, or lid fasteners), surged, short circuited, or abused.

INSTALLATION PROCEDURE:

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



Single Phase Wiring 208VAC Applications:

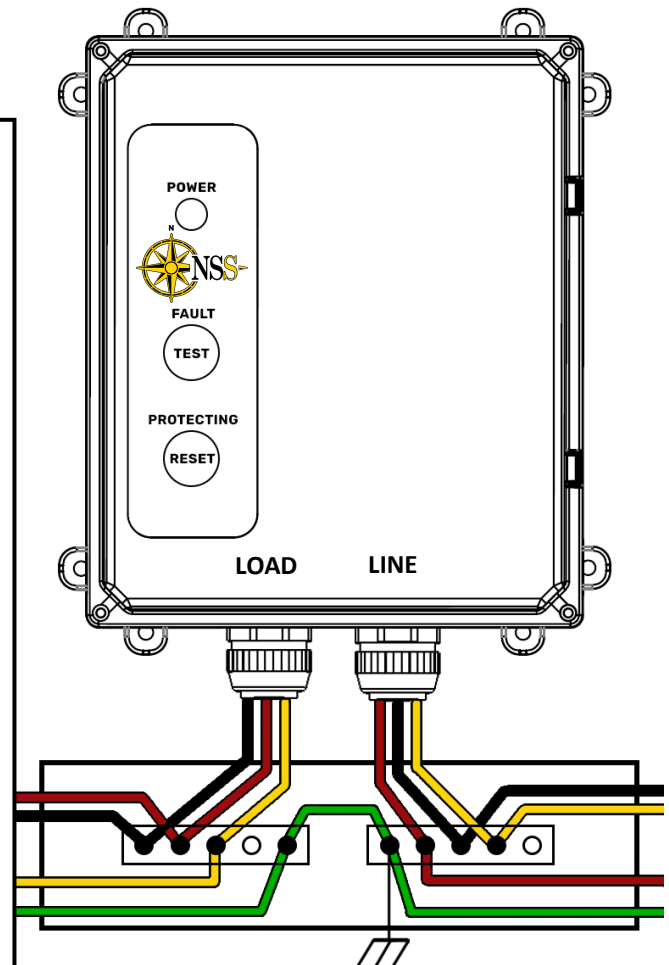
- ◆ Connect Field-Line 1 wire to GFCI's Line 1 wire (Black) using a wire connector or terminal block.
- ◆ Connect Field-Line 2 wire to GFCI's Line 2 wire (Red) using a wire connector or terminal block.
- ◆ GFCI's Yellow line wire is cut and capped off for single phase use.
- ◆ Connect GFCI's Load 1 wire (Black) to the protected equipment's Line 1 run.
- ◆ Connect GFCI Load 2 wire (Red) to protected equipment's Line 2 run.
- ◆ GFCI's Yellow load wire is cut and capped off for single phase use.
- ◆ Bypass a properly sized grounding wire (Green) locally in the junction box using a wire connector, splice, or terminal block.

Three Phase Wiring 208VAC Applications:

- ◆ Connect Field-Line 1 wire to GFCI's Line 1 wire (Black) using a wire connector or terminal block.
- ◆ Connect Field-Line 2 wire to GFCI's Line 2 wire (Red) using a wire connector or terminal block.
- ◆ Connect Field-Line 3 wire to GFCI's Line 3 wire (Yellow) using a wire connector or terminal block.
- ◆ Connect GFCI's Load 1 wire (Black) to protected equipment's Line 1 run.
- ◆ Connect GFCI's Load 2 wire (Red) to protected equipment's Line 2 run.
- ◆ Connect GFCI's Load 3 wire (Yellow) to protected equipment's Line 3 run.
- ◆ Bypass a properly sized grounding wire (Green) locally in the junction box using a wire connector, splice, or terminal block.

Read all the instructions in this leaflet and on the device label.

1. Identify all the features and wires (see above drawing).
2. Identify Line wires and Load wires (grounding wire not provided).
3. Verify that the ratings on the device match your equipment's ratings (Voltage, Current and Horsepower).
4. Disconnect power at main panel.
5. Determine GFCI location and drill mounting holes using template within this pamphlet provided.
6. Cut conductors to length and strip wires to length
7. Feed wires into junction box through appropriate hole and secure 1" conduit ends of GFCI to junction box or receptacle.
8. Choose the right wiring application connecting the wires according to the above instruction. The external grounding conductor is to be at least the same size as power conductors.
9. Secure GFCI box to mounting panel.



Testing Procedure

TEST PROCEDURE: After the installation has been completed, apply line side power at the branch circuit breaker or fused disconnect. Within a few seconds the GFCI shall close its contacts showing a GREEN illuminated RESET button, and YELLOW illuminated OUTPUT POWER light at the top left; (RESET must first be pressed for manual models). After 10sec (self tests have completed), press the TEST button, now only the TEST button shall be illuminated RED. If this test procedure does not respond exactly as described, power down installation, and contact the technical support provided. **Always consult qualified electricians.**

Technical Support: +1(440) 205-9188 or support@nssltd.com

Specifications

Rated Voltage:	208VAC (150V to ground max) "Class-A"
Operating Voltage Range:	85% to 110% of rated
Current:	Up to 60 Amps or Device Rating
Horsepower:	Up to 20HP 3Ø/7.5HP 1Ø
Frequency:	60 Hz.
Trip Level:	5mA +/- 1mA
Response Time:	25ms max at 500Ω fault
Power up:	Auto: Output is on immediately upon power up Manual: Output is off immediately upon power up
Display:	Illuminated TEST/RESET pushbuttons, triple indication of Protecting & Power-out versus Fault
Enclosure:	High impact polycarbonate, 8x10x4inch, NEMA 4X
Operational Temperature:	-35° C to 50° C (-31° F to 122° F)
Connections:	1 inch-trade, Various UL Listed category DWTT Liquid Tight, Hubbell P100NGYA (stocked)
Short Circuit:	10KA (panel tested), higher with appropriate fusing
Dielectric Withstand:	1500 VRMS across contact, 4000V to enclosure
Voltage Surge Withstand:	4000V/2000A 20-times per IEC 61000-4-5
Agency:	Listed to UL943 (KCXS.E205630)

IMPORTANT NOTE:

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

**Ground connection is done external to device enclosure.

Decision Table

