NORTH SHORE SAFETY — Installation, Testing, and Operating Procedures
20 AMP IN-LINE SERIES

## 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.**

## 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, OH 44060. 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.

## SPECIFICATIONS

| | |
|---|---|
| **TECHNICAL:** | |
| Rated Voltage: | 120VAC, 240VAC, 208VAC and 277VAC (208VAC & 277VAC non-U.L.) |
| Operating Voltage Range: | 85% to 110% of rated |
| Current: | Up to 20 Amps or Wiring Device Rating |
| Frequency: | 60 Hz, 50Hz available (non-U.L.) |
| Trip Level: | 5 +/- 1mA |
| Phase: | Single |
| 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: | 120 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 Voltage |
| Grounded Neutral Detection: | 2 Ohms or less |
| **GENERAL:** | |
| Construction: | Industrial Grade Design |
| Type: | Class A |
| POWER – UP TYPE *: | AUTO or MANUAL (SAFE START) |
| 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 |
| Enclosure | NEMA 4X (Wet location rated; High impact withstand) |
| Mounting Type: | Portable |
| Wiring Application: | 3 Wire, Single Phase |
| Wiring Connections: | Portable (in-line) |
| Switch Interface | Double Insulated |
| Latching Mechanism: | Electromagnetic |
| False trip due to impact: | None |
| Agency Approval | U.L. and cU.L. (U.L.943) (208VAC and 277VAC non-U.L.) |

**IMPORTANT NOTE:**

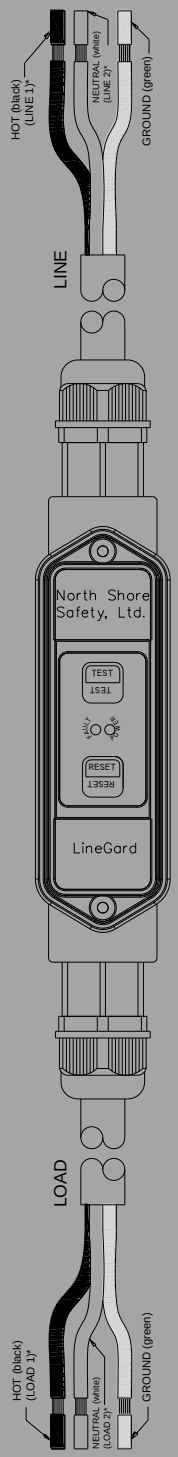
*** Manual configuration should be specified when automatic power up would create an unsafe condition after restoration of circuit power.**

NORTH SHORE SAFETY

# Installation, Testing, and Operating Procedures
## 20 AMP IN-LINE SERIES

## WIRING INSTRUCTIONS

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




**IMPORTANT:**

1. Read all the instructions in this leaflet and on the device label.
2. Identify all the features and wires (see drawing).
3. Identify LINE wires and LOAD wires.
4. Verify that the ratings on the device match your field line ratings.
5. Strip wires to 5/8", or as recommended for your connections.
6. Choose the right wiring application (120VAC, 208VAC, 277VAC, or 240VAC) and connect wires according to the drawing on this page 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 protected equipment or receptacle Hot.
- Connect GFCI Load-Neutral wire (White) to protected equipment or receptacle Neutral.
- Connect GFCI Load-Ground wire (Green) to protected equipment or receptacle Ground.

**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 protected equipment or receptacle Line 1.
- Connect GFCI Load-Line 2 wire (White) to protected equipment or receptacle Line 2.
- Connect GFCI Load-Ground wire (Green) to protected equipment or receptacle Ground.

**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 persists, DO NOT USE THIS GFCI. Consult a qualified electrician for assistance or replacement.

7335 Production Drive Mentor, OH 44060 Phone: 440-205-9188 Fax: 440-205-9187 sales@nssltd.com www.nssltd.com