



Ground Fault Circuit Interrupter

INSTALLATION AND TESTING PROCEDURE

IMPORTANT!

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

CET APPAREIL DOIT ÊTRE INSTALLÉ PAR UNE PERSONNE QUALIFIÉE QUI COMPREND LES CIRCUITS ÉLECTRIQUES

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.

AVERTUSSEMENT

Un **Disjoncteur Différentiel (GFCI)** est un dispositif de sécurité électrique qui, dans des conditions normales d'utilisation, est destiné à réduire les risques d'électrocution. Utilisez ce produit uniquement dans les limites des paramètres de fonctionnement spécifiés. Le non-respect de cette consigne peut entraîner des blessures corporelles.) Consultez un électricien agréé pour obtenir de l'aide concernant l'installation et les réparations. N'utilisez pas ce disjoncteur différentiel s'il ne fonctionne pas conformément aux instructions. N'essayez jamais de modifier cet appareil. Ce disjoncteur différentiel ne doit jamais être utilisé comme interrupteur pour connecter ou déconnecter l'alimentation électrique. (L'alimentation électrique doit être coupée au niveau de l'alimentation principale ou à l'aide d'un interrupteur secondaire situé au niveau de l'alimentation principale du disjoncteur différentiel.) Ce disjoncteur différentiel n'est pas un dispositif de protection contre les surintensités. (Un fusible ou un disjoncteur approprié doit être utilisé en série au niveau de l'alimentation électrique



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principale.) Ce disjoncteur différentiel n'offre aucune protection contre les chocs causés par la prise en main simultanée des deux conducteurs du circuit. Ce disjoncteur différentiel n'offre aucune protection contre les chocs électriques générés par les conducteurs alimentant l'appareil. **Remarque : l'alimentation principale du disjoncteur différentiel reste sous tension même lorsque celui-ci est déclenché. (L'alimentation doit être coupée au niveau du panneau électrique principal avant d'intervenir sur le côté charge du disjoncteur différentiel.)**

- ◆ N'utilisez pas cet appareil pour alimenter des appareils de maintien en vie.
- ◆ Pour minimiser les déclenchements intempestifs :
 - ◇ Ne l'utilisez pas sur des équipements de piscine installés avant 1965, conformément au code NEC.
 - ◇ Ne l'utilisez pas sur des sèche-linge électriques ou des cuisinières électriques dont le châssis est mis à la terre par un conducteur neutre.
- ◆ L'installation doit être conforme aux codes électriques locaux et nationaux (NEC).
- ◆ Pendant l'installation, coupez l'alimentation électrique au niveau du panneau de service afin d'éviter toute blessure grave.

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 includes a dual indication of operating modes, 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.

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.

DANGER : RISQUE DE CHOC ÉLECTRIQUE, DE BRÛLURE OU D'EXPLOSION. Débranchez l'alimentation électrique au niveau du panneau principal avant de commencer l'installation. Le non-respect de cette consigne peut entraîner un choc électrique grave, des blessures corporelles ou la mort.



Three Phase Wiring 208VAC Applications:

- ◆ Connect Field-Line 1 wire to GFCI's Line 1 on terminal block.
- ◆ Connect Field-Line 2 wire to GFCI's Line 2 on terminal block.
- ◆ Connect Field-Line 3 wire to GFCI's Line 3 on terminal block.
- ◆ Connect Field-Line ground wire on the ground terminal block.
- ◆ Connect GFCI's Load 1 on terminal block to protected equipment's Line 1 run.
- ◆ Connect GFCI's Load 2 on terminal block to protected equipment's Line 2 run.
- ◆ Connect GFCI's Load 3 on terminal block to protected equipment's Line 3 run.
- ◆ Connect GFCI's Load ground on ground terminal block.

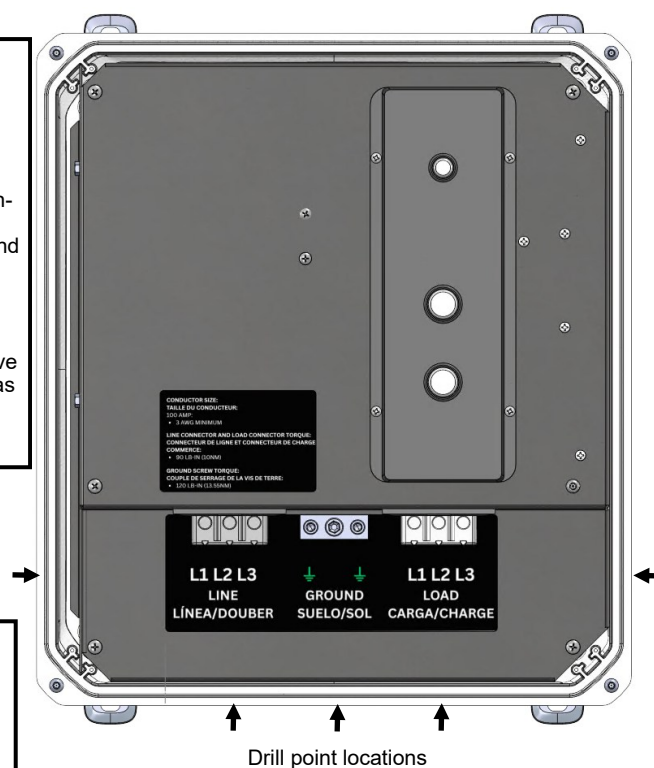
Single Phase Wiring 208VAC Applications:

- ◆ Connect Field-Line 1 wire to GFCI's Line 1 on terminal block.
- ◆ Connect Field-Line 2 wire to GFCI's Line 2 on terminal block.
- ◆ Connect Field-Line ground wire on GFCI's ground terminal block.
- ◆ Connect GFCI's Load 1 on terminal block to protected equipment's Line 1 run.
- ◆ Connect GFCI's Load 2 on terminal block to protected equipment's Line 2 run.
- ◆ Connect GFCI's Load ground on ground terminal block.

*Terminal blocks use a 5 mm hex key.

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 and Load on terminal block (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 dimensions listed within this pamphlet provided.
6. Cut holes for conduit connectors using the indented drill points on the sides and or bottom of the box. See illustration.
7. Cut conductors to length and strip wires to length.
8. Feed wires into junction box through appropriate hole and secure 1" conduit ends of GFCI to junction box or receptacle.
9. 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.
10. Secure GFCI box to mounting panel.



Ground Terminals Torque Specs:

- ◆ 14 to 10 AWG (2.08 to 5.26 mm²) - 35 in-lb (4.0 Nm) copper or aluminum
- ◆ 8 to 2/0 AWG (8.36 to 21.1 mm²) - 120 in-lb (13.5 Nm) copper
- ◆ 8 AWG (8.36 mm²) - 50 in-lb (5.6 Nm) aluminum
- ◆ 6 to 2/0 AWG (4.115 to 21.1 mm²) - 120 in-lb (13.5 Nm) aluminum

*refer to NEC table B310.15 for proper AWG for specific amperage ratings.

Testing Procedure

TEST PROCEDURE: After the installation has been completed, apply line side power at the branch circuit breaker or fused disconnect. Red light will briefly illuminate and then turn off. 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. Press the RESET button to power on unit. 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

Specifications

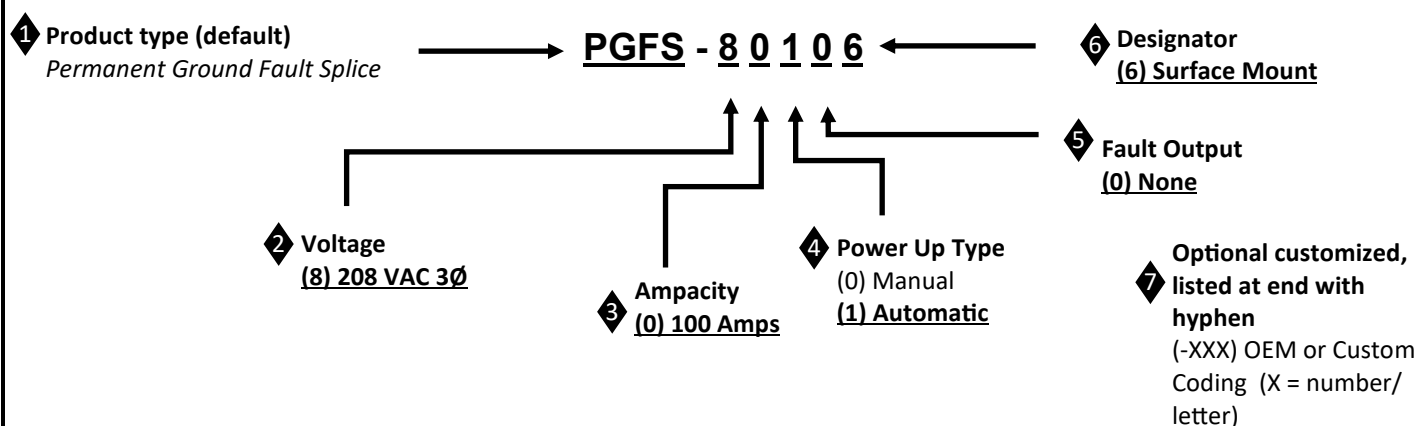
Rated Voltage:	208VAC (150V to ground max) "Class-A"
Operating Voltage Range:	85% to 110% of rated
Current:	Up to 100 Amps
Horsepower:	Up to 40HP 3Ø
Frequency:	60 Hz.
Trip Level:	5mA +/- 1mA (@ 60Hz, higher levels at higher frequencies for VFD trip resistance)
Response Time:	25ms max at 500Ω fault
Power 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, 15x17x8inch, NEMA 4X
Operational Temperature:	-35° C to 50° C (-31° F to 122° F)
Connections:	User supplied conduit connectors
Dielectric Withstand:	1500 VRMS across contact, 4000V to enclosure
Voltage Surge Withstand:	4000V/2000A 20-times per IEC 61000-4-5
Agency:	ETL Listed to UL943 HF

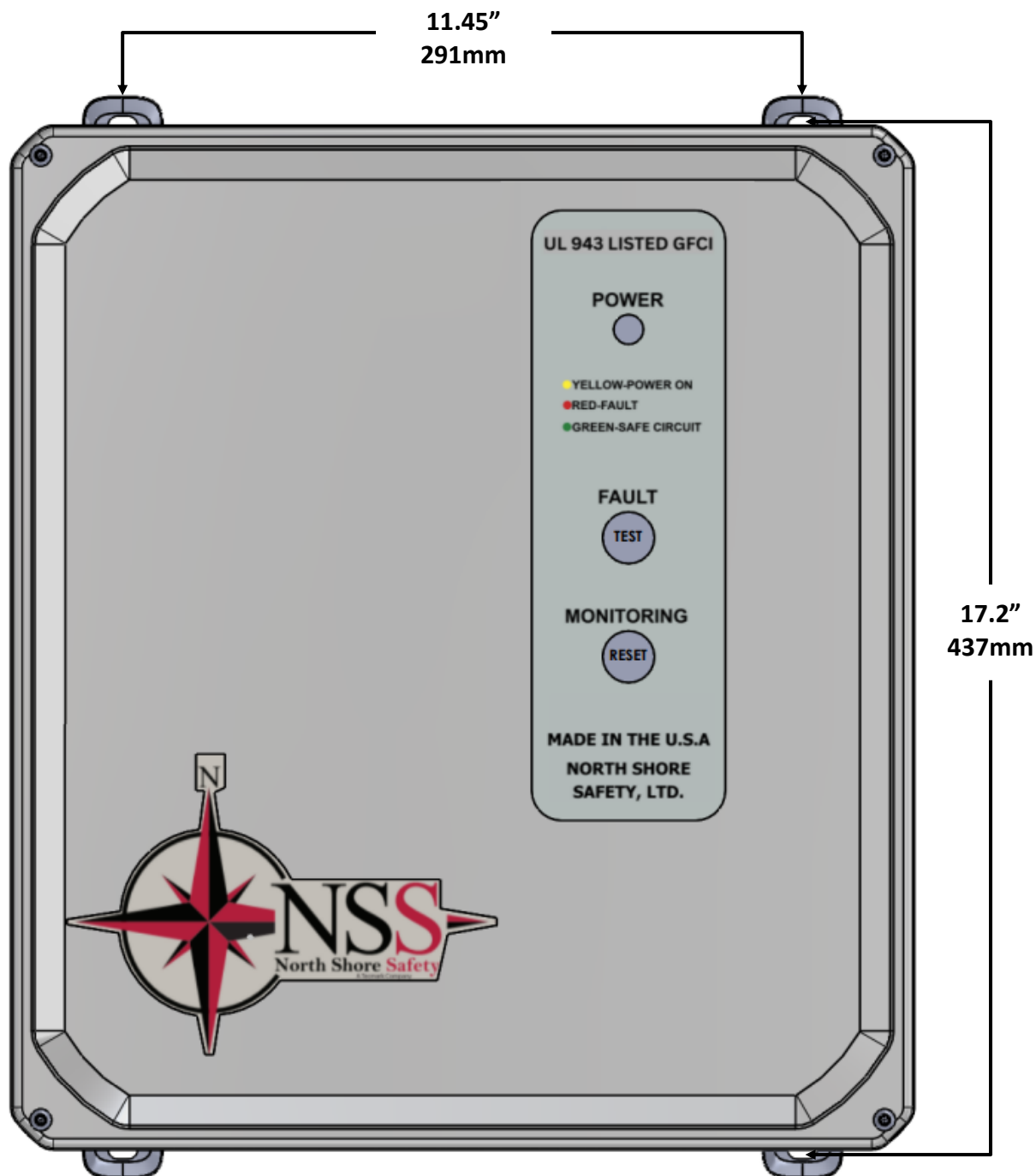
IMPORTANT NOTE:

*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





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.