

This document is intended as a reference guide for installing and using a BENDER LifeGuard series Ground Fault Circuit Interrupter (GFCI). This document includes installation, setup, and usage instructions. For complete instructions, including setup, use, and troubleshooting, refer to LifeGuard user manual, document NAE1085011.

Only qualified maintenance personnel shall operate or service this equipment. These instructions should not be viewed as sufficient for those who are not otherwise qualified to operate or service this equipment. This document is intended to provide accurate information only. No responsibility is assumed by BENDER for any consequences arising from use of this document.



Use of This Document

This installation guide applies to standard GFCI type models with push button / light front, as pictured above. The following requirements are met in order to be a standard GFCI:

- Greater than 20 A rated load current, or line-to-line system voltage greater than 240 VAC
- Push button / light interface controls (no digital display / communication option)

For compact LifeGuard GFCI models, consult document NAE1088320. For LifeGuard GFCIs with digital display option, consult document NAE1088440. For all models, consult the full LifeGuard GFCI user manual, document NAE1085011.

Installation

Mounting - NEMA 4X Polycarbonate Enclosure

The standard enclosure for LifeGuard series GFCIs is a NEMA 4X polycarbonate enclosure. The enclosure includes mounting feet and separate instructions on wall-mounting the enclosure. Refer to these instructions for more information. Refer to figure 1 below for dimensions.

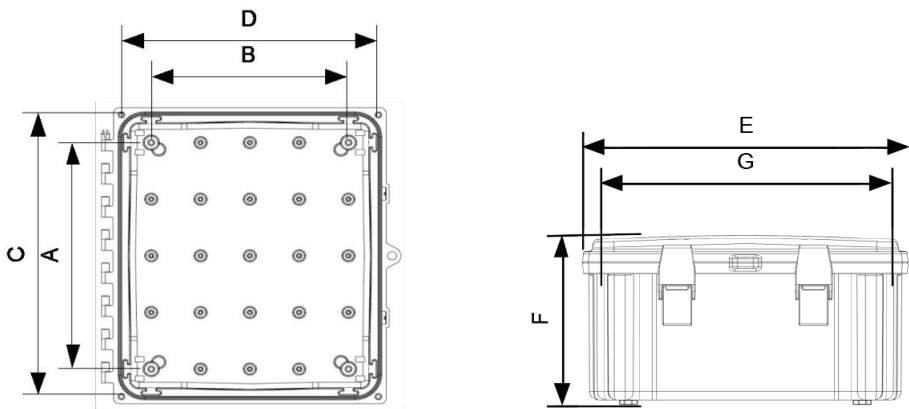


Figure 1 - Dimensions of NEMA 4X polycarbonate enclosure

Table 1: Enclosure Dimensions in Inches (mm)

Type	Enclosure	A x B	C	D	E	F	G
< 100 A	12x10x6	10.25" x 8.25" (260.5 x 209.5)	12.75" (324)	10.75" (273)	13.4" (340)	7.7" (195.5)	12.3" (312.5)
100 A	14x12x6	12.25" x 10.25" (311 x 260.5)	14.75" (375)	12.75" (324)	15.4" (391)	7.7" (195.5)	14.3" (363)

For other enclosure types, refer to LifeGuard user manual, document NAE1085011.

If the LifeGuard GFCI was purchased without an enclosure (backplate only), consult the following section "Wiring," as well as the section "Backplate Only Models" on the reverse side of this document for additional mounting and wiring requirements.

Wiring

The GFCI is installed in series with the main circuit. Connection of the main circuit conductors varies based on quantity of conductors and system voltage. In general, the following steps must be taken:

- All active conductors, including the neutral, must be brought into the device, through the current transformer, and landed on the line side of the contactor.
- All active conductors are then brought out from the load side of the contactor to the load / remaining branch of the circuit.
- The ground wire is landed on the ground lug on the backplate. The ground wire is NOT routed through the current transformer.

⚠ DANGER

**HAZARD OF ELECTRIC SHOCK,
EXPLOSION, OR ARC FLASH**

- Disconnect all power before servicing.
- Observe all local, state, and national codes, standards, and regulations.

Table 2: Legend of Wiring Diagrams

Voltage	Conductors (NOT including ground)	Referenced Wiring Diagram
120 VAC	1ph / 2w (L1, N)	Figure W1
208 VAC	3ph / 3w (L1, L2, L3)	Figure W2
208/120 VAC	3ph / 4w (L1, L2, L3, N)	Figure W3
240/120 VAC	3ph / 3w (L1, L2, N)	Figure W4
277 VAC	1ph / 2w (L1, N)	Figure W1
480 VAC	3ph / 3w (L1, L2, L3)	Figure W2
480/277 VAC	3ph / 4w (L1, L2, L3, N)	Figure W3
600 VAC	3ph / 3w (L1, L2, L3)	Figure W2
600/346 VAC	3ph / 4w (L1, L2, L3, N)	Figure W3

Figure W1 - Single-Phase, Two-Wire Configurations (L1, N)

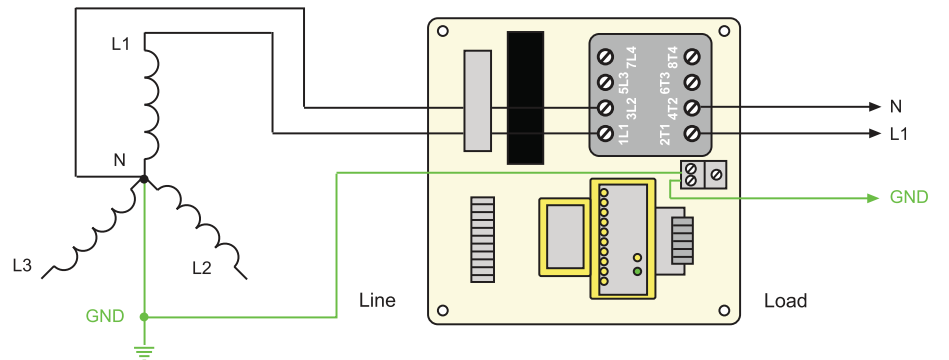


Figure W2 - Three-Phase, Three-Wire Configurations (L1, L2, L3)

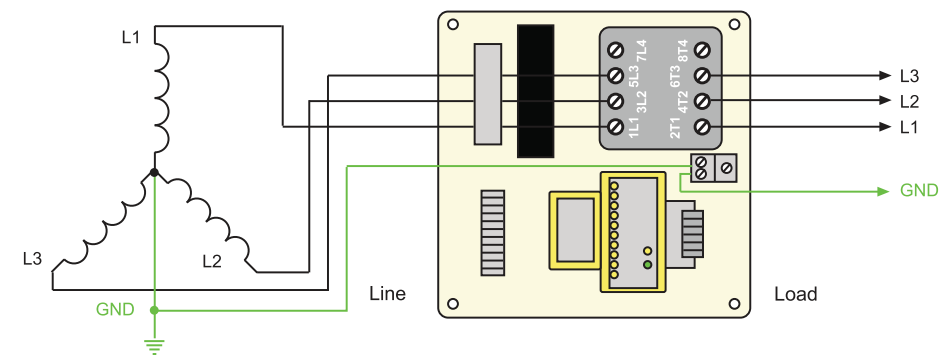


Figure W3 - Three-Phase, Four-Wire Configurations (L1, L2, L3, N)

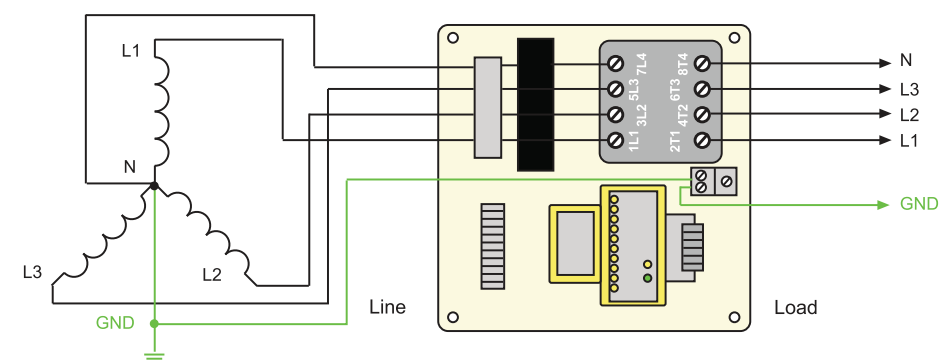
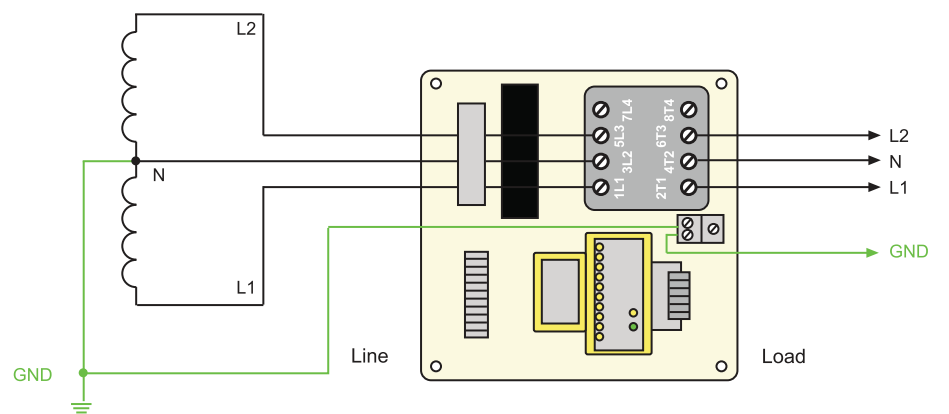


Figure W4 - 240Y/120 VAC Configurations (L1, L2, N)



Additional Requirements - Backplate Only Models

This section only applies to LifeGuard models purchased without an enclosure and on the backplate only. Refer to instructions below for additional requirements for installation and wiring. Backplate-only models are typically integrated into existing cabinets or machinery.

Mounting - Backplate Only

Refer to Figure 3 below for dimensions. The GFCI must be mounted in a location sufficient to protect live electrical equipment. Use four (4) #10 screws for mounting. The vertical clearance of the backplate is 6" for models less than 100 A, and 8" for 100 A models.

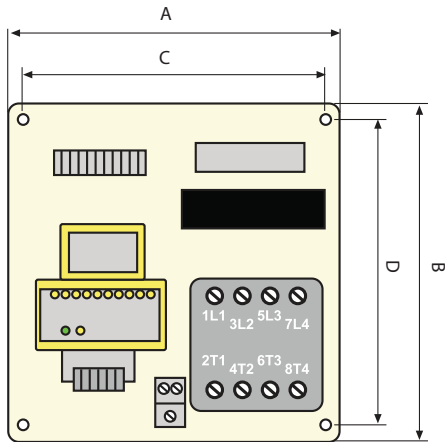


Figure 3 - Dimensions of LifeGuard, backplate only

Backplate Dimensions in Inches (mm)		
Type	A x B	C x D
< 100 A	8.75" x 10.5" (222 x 267)	8.25" x 10.25" (210 x 260)
100 A	10.75" x 12.75" (273 x 324)	

Wiring - Control Wiring

Follow the standard wiring instructions on the reverse side of this document. Additionally, backplate-only models include a terminal strip for wiring external connections. These connections must be wired for proper operation. Refer to figure 4 below. LifeGuard models purchased with an enclosure come pre-wired and do not require any of the following connections. Contacts denoted with an asterisk (*) are provided with 120 VAC from the backplate.

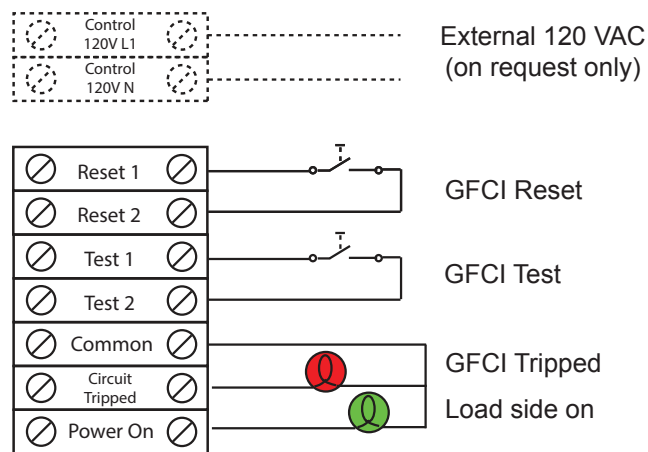


Figure 4 - Control wiring terminals for LifeGuard models on backplate only (no enclosure)

- Control 120V L1 / N (optional): Optional 120 VAC control input. This is available only on request. Standard backplate models do not have these connections, as they are not required.
- Reset 1 / Reset 2: N/O contact / push-button. RESET functionality.
- Test 1 / Test 2: N/O contact / pushbutton. Closing this contact initiates a self-test.
- *Common: Common for indicator lights.
- *Circuit Tripped: TRIPPED light. Indicates GFCI has tripped and opened the circuit.
- *Power On: ON light. Indicates the circuit is closed and power is active to the load de.

Use - Enclosure Front

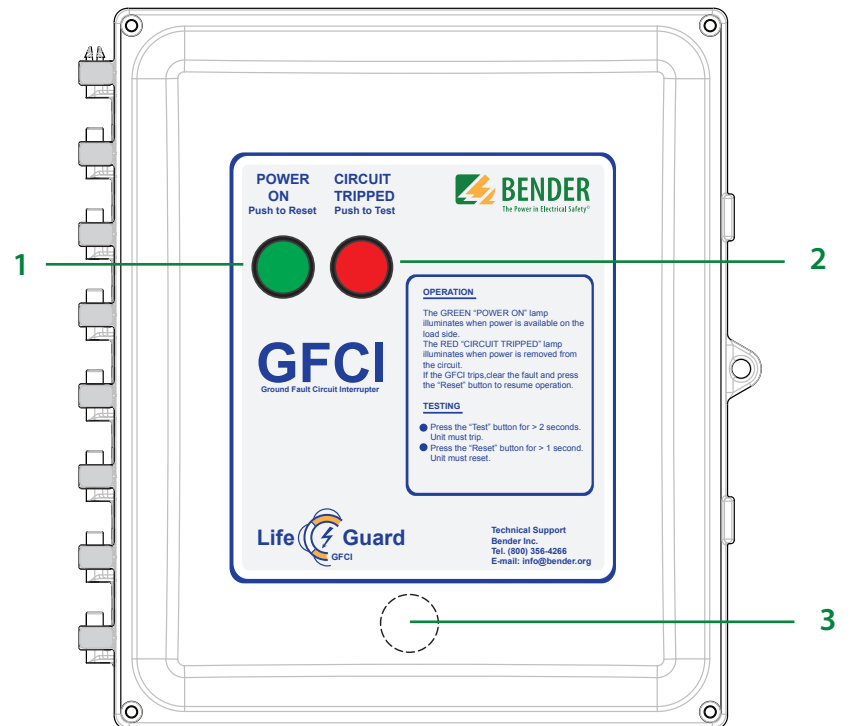


Figure 2 - Standard front of LifeGuard enclosure

- POWER LED / RESET button: Illuminates when the GFCI has received power and the device has not tripped / Resets the GFCI if faults have been cleared (momentary push).
- TRIPPED LED / TEST button: Illuminates when the GFCI has tripped / Performs a functional test of the GFCI (hold for at least 2 seconds).
- E-stop button (OPTIONAL - OPTION "S" ONLY): Pushing in this button will not allow the GFCI to start regardless of ground fault condition. This is only included in models which end in "-S."

Field Adjustments

For field adjustment options and instructions, refer to LifeGuard user manual, document NAE1085011.

Operation

Apply power to the GFCI

To apply power, close the circuit breaker / disconnect on the line side of the GFCI. If there are no ground faults present on the system, the green ON LED will illuminate.

Test procedure

- Push the TEST button on the front of the enclosure for at least 2 seconds.
- The GFCI will trip, the green ON LED will go out, and the red TRIPPED LED will illuminate. Power to any connected loads will be interrupted.
- For options "6" and "20", an internal self-test will initiate which takes approximately ten (10) seconds.
- Push the RESET button on the front of the enclosure for at least one (1) second.
- The GFCI will reset, the red TRIPPED LED will go out, and the green ON LED will illuminate. Power will then be restored to the load side of the GFCI.

Error Codes

For error codes and troubleshooting, refer to LifeGuard user manual, document NAE1085011.