Installing and Testing a GFCI Receptacle

Please read this leaflet completely before getting started.

1. What is a GFCI?
   A GFCI receptacle is different from conventional receptacles. In the event of a ground fault, a GFCI will trip and quickly stop the flow of electricity to prevent serious injury.

2. The GFCI’s features

3. Should you install it?
   Installing a GFCI receptacle can be more complicated than installing a conventional receptacle.
   Make sure that you:
   - Understand basic wiring principles and techniques
   - Can interpret wiring diagrams
   - Have circuit wiring experience
   - Are prepared to take a few minutes to test your work, making sure that you have wired the GFCI receptacle correctly

4. LINE vs. LOAD
   A cable consists of 2 or 3 wires.
   Cable | Wires
   --- | ---
   LINE | Hot terminal (Brass or Black):
   LOAD | Hot terminal (Brass or Black):
   | Connection for the LINE cable's black wire
   | Connection for the LOAD cable's black wire

5. Turn the power OFF
   Plug an electrical device, such as a lamp or radio, into the receptacle on which you are working. Turn the lamp or radio ON. Then, go to the service panel. Find the breaker or fuse that protects that receptacle. Place the breaker in the OFF position or completely remove the fuse. The lamp or radio must turn OFF.

6. Identify cables/wires
   Procedure: box with two (2) cables (4-6 wires):
   (a) Detach one cable’s white wire and hot wires from the receptacle and cap each one separately with a wire connector. Make sure that they are from the same cable.
   (b) Re-install the receptacle in the electrical box, attach faceplate, then turn the power ON at the service panel.
   (c) Determine if power is flowing to the receptacle. If so, the capped wires are the LOAD wires. If not, the capped wires are the LINE wires.
   (d) Turn the power OFF at the service panel, label the LINE and LOAD wires, then remove the receptacle.
   (e) Go to step 7B.

CAUTION
- To prevent severe shock or electrocution always turn the power OFF at the service panel before working with wiring.
- Use this GFCI with copper or copper-clad wire. Do not use it with aluminum wire.
- Do not install this GFCI receptacle on a circuit that powers life support equipment because if the GFCI trips it will shut down the equipment.
- For installation in wet locations, protect the GFCI receptacle with a weatherproof cover that will keep both the receptacle and any plugs dry.
- Must be installed in accordance with national and local electrical codes.

NOTE:
- The GFCI contains a lockout feature that will prevent RESET if:
  - There is no power being supplied to the GFCI.
  - The GFCI is miswired due to reversal of the LINE and LOAD leads.

- The GFCI cannot pass its internal test, indicating that it may not be able to provide protection in the event of a ground fault.

Definition of a ground fault:
Instead of flowing its normal safe path, electricity passes through a person’s body to reach the ground. For example, a defective appliance can cause a ground fault.

- A GFCI receptacle does NOT protect against circuit overloads, short circuits, or shocks. For example, you can still be shocked if you touch bare wires while standing on a non-conducting surface, such as a wood floor.

4. LINE vs. LOAD
   - Procedure: box with two (2) cables (4-6 wires):
     (a) Detach one cable’s white wire and hot wires from the receptacle and cap each one separately with a wire connector. Make sure that they are from the same cable.
     (b) Re-install the receptacle in the electrical box, attach faceplate, then turn the power OFF at the service panel.
     (c) Determine if power is flowing to the receptacle. If so, the capped wires are the LOAD wires. If not, the capped wires are the LINE wires.
     (d) Turn the power OFF at the service panel, label the LINE and LOAD wires, then remove the receptacle.
     (e) Go to step 7B.

Placement in circuit:
The GFCI’s place in the circuit determines if it protects other receptacles in the circuit.

Sample circuit:
- Meter or service panel
- A, B, C, and E outlets
- A and C are GFCI protected
- B, E, and C are not GFCI protected

Placing the GFCI in position A will also provide protection to “load side” receptacles B and C. On the other hand, placing the GFCI in position C will not provide protection to receptacles A or B. Remember that receptacles A, B, and C can be in different rooms.
7. Connect the wires (choose A or B)... only after reading other side completely

A: One Cable (2 or 3 wires) entering the box

**Grounding connection to box (if box has a grounding terminal):**  
Connect a 6-inch bare copper (or GREEN) wire to the grounding terminal on the box. 

**Electrical Box: Wire Connector**

B: Two cables (4 or 6 wires) entering the box

**Grounding connection to box (if box has a grounding terminal):**  
Connect a 6-inch bare copper (or GREEN) wire to the grounding terminal on the box. 

**Electrical Box: Wire Connector**

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**About Wire Connections:**

**For Side wire - Loop clockwise 2/3 of the way around screw**

- White: Fil Actif
- Black: Fil Blanc
- Load: Ligne
- Hot wire: charge
- Ground wire: blanc termination (Silver)

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**General Information**

**Cat. No.**

- X7599 15A-120V AC, 60 Hz
- X7899 20A-125V AC, 60 Hz
- WR899 15A-125V AC, 60 Hz
- W899 20A-125V AC, 60 Hz
- WR599 15A-125V AC, 60 Hz
- W599 20A-125V AC, 60 Hz
- X7899 20A-125V AC, 60 Hz
- X7599 15A-120V AC, 60 Hz

**For warranty information and/or product returns, residents of Canada should contact Leviton in writing at:**

Leviton Manufacturing of Canada Ltd. to the attention of the Quality Assurance Department, 155 Hymus Blvd., Pointe Claire (Canada) H9R 1E9 or by telephone at 1 800 405-5320.

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**TROUBLESHOOTING**

Turn the power OFF and check the wire connections against the appropriate wiring diagram in step 7A or 7B. Make sure that there are no lose wires or loose connections. Start the test from the beginning of step 8 if you rewired any connections to the GFCI. **TROUBLESHOOTING**

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