1. What is an AFCI/GFCI?

An AFCI/GFCI receptacle is different from conventional receptacles. In the event of a ground fault or arcing fault, this device will trip and quickly stop the flow of electricity to prevent serious injury or to mitigate the effects of the arcing that may have posed a risk of fire ignition if the arcing persisted.

Definition of a ground fault: Instead of following its normal safe path, electricity passes through a person’s body to reach the ground.

Definition of an arcing fault: An arcing fault is an unintentional arcing condition in a circuit. Arcing occurs as a normal condition in some motors or when a switch opens.

An AFCI/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.

2. The AFCI/GFCI’s features

- **Self-Test GFCI circuitry with SafeLock Protection**: This is a Self-Test GFCI Receptacle with SafeLock™ Protection; it conducts an automatic test every three seconds, ensuring it’s always ready to protect. If the device fails the test, the GFCI indicator light flashes to signal that the AFCI/GFCI should be replaced. It also has our proven SafeLock Protection feature: if critical components are damaged and protection is lost, power to this receptacle, and any downstream receptacles, will be disconnected.

3. Should you install it?

Installing an AFCI/GFCI receptacle can be more complicated than installing a conventional receptacle.

Make sure you:
- Understand basic wiring principles and techniques.
- Can interpret wiring diagrams.
- Have circuit wiring experience.

4. LINE vs. LOAD

A cable consists of 2 or 3 wires.

<table>
<thead>
<tr>
<th>Cable</th>
<th>Lines</th>
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<tbody>
<tr>
<td><strong>LINE cable</strong>: Delivers power from the service panel (breaker panel or fuse box) to the AFCI/GFCI. If there is only one cable entering the electrical box, it is the LINE cable. This cable should be connected to the AFCI/GFCI’s LINE terminals only.</td>
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<tr>
<td><strong>LOAD cable</strong>: Delivers power from the AFCI/GFCI to another receptacle in the circuit. This cable should be connected to the AFCI/GFCI’s LOAD terminals only. The LOAD terminals are under the yellow sticker. Do not remove the sticker at this time.</td>
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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. 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 should turn OFF.

Next, plug in and turn ON the lamp or radio at the receptacle’s other outlet to make sure the power is OFF at both outlets. If the power is not OFF, stop work and call an electrician to complete the installation.

6. Identify cables/wires

**IMPORTANT:** Do not install the AFCI/GFCI receptacle in an electrical box containing:

(a) more than 4 wires (not including the grounding wires) or (b) cables with more than two wires (not including the grounding wire). Contact a qualified electrician if either (a) or (b) is true.

- If you are replacing an old receptacle, pull it out of the electrical box without disconnecting the wires.
- If you see one cable (2-3 wires), it is the LINE cable. The receptacle is probably in position C (see diagram to the right). Follow steps a-e of the procedure to the right.
- If you see two cables (4-6 wires), the receptacle is probably in position A or B (see diagram to the right). Follow steps a-e of the procedure to the right.

**Procedure:** box with two cables (4-6 wires)

(a) Detach one cable’s white 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 the faceplate, then turn the power ON at the service panel.

(c) Determine if power is flowing to the receptacle. If so, the cabled wires are the LOAD wires. If not, the cabled 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.

**Sample circuit:**

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

**IMPORTANT:** The AFCI/GFCI’s position in A will also provide protection to “load side” receptacles B and C. On the other hand, placing the AFCI/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.

**Service Panel**

**Procedure**

**Placement in circuit:**

**a)** Detach one cable’s white 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 the faceplate, then turn the power ON at the service panel.

**c)** Determine if power is flowing to the receptacle. If so, the cabled wires are the LOAD wires. If not, the cabled 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.
7. Connect the wires (choose A or B)... only after reading other side completely

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

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

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8. Test your work

Why perform this test?
• If you miswired the AFCI/GFCI, it may not prevent personal injury or death due to a ground fault (electrical shock), or it may not mitigate the effects of arcing faults due to unintentional arcing in a circuit.

Procedure:
(a) Turn the power ON at the service panel. Press the RESET button fully. The RESET button should stay in. If the RESET button does not stay in, go to Troubleshooting. If the RESET button stays in, plug a lamp or radio into the AFCI/GFCI (and leave it plugged in) to verify that the power is ON. If there is no power, go to Troubleshooting. Note that the RESET button will pop-out. If the power stays ON, or the red indicator lights stay off, go to Troubleshooting. If the power goes OFF, and the red indicator lights come on, you have installed the AFCI/GFCI receptacle correctly. To restore power, press the RESET button.

(b) Press the TEST button in order to trip the device. This should stop the flow of electricity, making the radio or lamp shut OFF. Note that the RESET button will pop-out. If the power stays ON, or the red indicator lights stay off, go to Troubleshooting. If the power goes OFF, and the red indicator lights come on, you have installed the AFCI/GFCI Protected sticker on every receptacle that lost power.

(c) If you installed your AFCI/GFCI using step 7B, plug a lamp or radio into surrounding receptacles to see which one(s), in addition to the AFCI/GFCI, lost power when you pressed the TEST button. Do not plug life saving devices into any receptacles that lost power. Place an “AFCI/GFCI Protected” sticker on every receptacle that lost power.

(d) Press the TEST button (then RESET button) every month to assure proper operation.

(e) This device has Self-Test GFCI circuitry with SafeLock Protection,™ it conducts an automatic test every three seconds, ensuring it’s always ready to protect. If the device fails the test, the GFCI indicator light flashes to signal that the GFCI should be replaced. It also has our proven SafeLock Protection feature: if critical components are damaged and protection is lost, power to this receptacle, and any downstream receptacles, will be disconnected.

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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 loose wires or loose connections. Also, it is possible that you reversed the LINE and LOAD connections. LIN reversal will be indicated by no power at the AFCI/GFCI and by the RESET button not staying in when grounded, or by the red indicator light going OFF after you press the AFCI/GFCI's TEST button. Reverse the LINE and LOAD connections if necessary. Start the test from the beginning of step 8 if you rewired any connections to the AFCI/GFCI.

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LIMITED ONE YEAR WARRANTY

Pass & Seymour will remedy any defect in workmanship or material in Pass & Seymour products which may develop under proper and normal use within one year from date of purchase by a consumer:

(1) by repair or replacement, or, at Pass & Seymour's option, (2) by return of an amount equal to consumer's purchase price. Such remedy is in lieu of any and all remedies to consumer against Pass & Seymour or any Person supplying materials or services in connection with the AFCI/GFCI. Pass & Seymour will remedy any defect in workmanship or material in Pass & Seymour products which may develop under proper and normal use within one year from date of purchase by a consumer:

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