LEVITON

smartlockpro™

Installing and Testing an Outlet Branch Circuit AFCI with Switch

Please read this leaflet completely before getting started.

DI-000-AFSW1-02A

⚠ CAUTION

- To prevent severe shock or electrocution always turn the power OFF at the service panel before working with wiring.
- Use this Outlet Branch Circuit AFCI with copper or copper-clad wire. Do not use it with aluminum wire.
- Do not install this Outlet Branch Circuit AFCI with Switch on a circuit that powers life support equipment because if the OBC AFCI trips it will shut down the equipment.
- To maximize protection install at the first device location in the circuit.
- Must be installed in accordance with national and local electrical codes.
- Device requires a neutral connection.

1. What is a AFCI?

An OBC AFCI with Switch is different from a conventional Switch. It is intended to provide protection to branch circuit wiring against the unwanted affects of arcing. In the event of an arc fault, an OBC AFCI will trip and quickly stop the flow of electricity to mitigate the effects of the arcing that may have posed a risk of fire ignition if the arcing persisted.

Definition of an arcing fault:

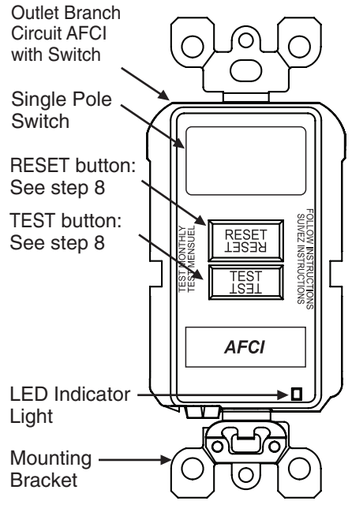
An arcing fault is an unintentional arcing condition in a circuit. Arcing occurs as a normal condition in some motors or when a switch opens. An example of unintentional arcing would be arcing that occurs due to severed cord conductors. An OBC AFCI does not protect against circuit overloads, short-circuits or against shock hazards.

NOTE: Leviton's OBC AFCI's contain a lockout feature that will prevent RESET if:

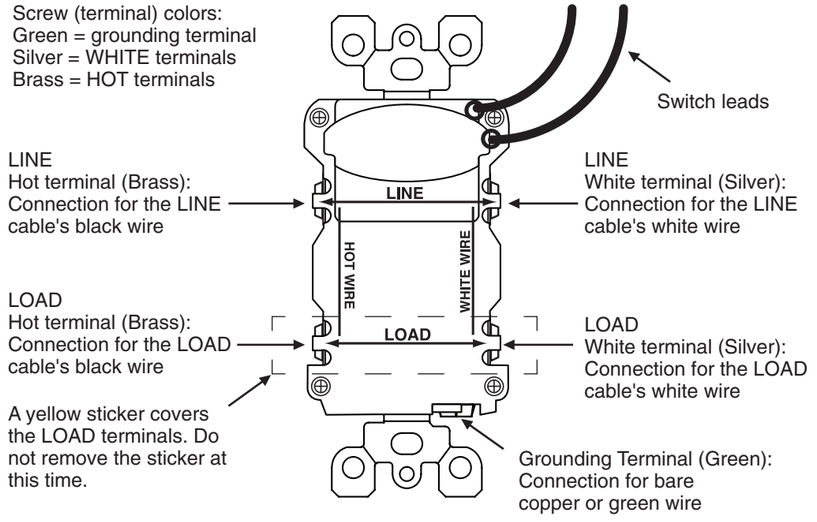
- There is no power being supplied to the OBC AFCI.
- The OBC AFCI is miswired due to reversal of the LINE and LOAD leads.
- The OBC AFCI cannot pass its internal test, indicating that it may not be able to provide protection in the event of an arc fault.

2. The OBC AFCI with Switch features

FRONT VIEW



BACK VIEW



3. Should <u>you</u> install it?

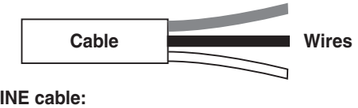
Installing a OBC AFCI with switch can be more complicated than installing a conventional switch.

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 OBC AFCI with switch correctly.

4. LINE vs. LOAD

A cable consists of 2 or 3 wires.



LINE cable:

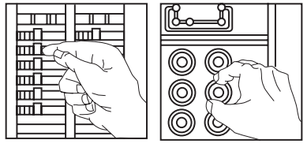
Delivers power from the service panel (breaker panel or fuse box) to the OBC AFCI. This cable should be connected to the OBC AFCI's LINE terminals only.

LOAD cable(s):

Delivers power from the OBC AFCI with Switch to a connected lighting load as well as additional lighting loads or outlets downstream. These cables should be connected to the OBC AFCI's LOAD terminals only.
NOTE: The LOAD terminals are under the yellow sticker.

5. Turn the power OFF

Identify the switch you will be replacing and turn ON the load. Then, go to the service panel. Find the breaker or fuse that protects that switch. Place the breaker in the OFF position or completely remove the fuse. The load must turn OFF.



6. Identify cables/wires

IMPORTANT: If you are replacing an old switch, pull it out of the electrical box without disconnecting the wires at this time.
NOTE: If the wall box consists of just one cable (2-wires) there is no neutral present. This device can not be used without a neutral connection.

If you see two cables (4-6 wires), the switch is probably in position A with no downstream outlets or lighting loads (see diagram to the right). Follow steps (a-f) of the procedure to the right.

If you see more than two cables the switch is probably in position A with downstream outlets or lighting loads (see diagram to the right). Go to step (g).

Procedure:

Box with two (2) cables (4-6 wires):

(a) Disconnect the existing switch and separate the wires of each cable in the box. Cap the black and white wires from one of the cables individually with wire connectors. Connect the remaining black and white wires to the line terminals of the OBC AFCI with switch.
(b) **DO NOT** remove the yellow sticker from the load terminals of the device at this time. Cap the two black switch leads separately with wire connectors.
(c) Mount the OBC AFCI with switch in the electrical box, attach faceplate, then turn the power back ON at the service panel.
(d) Press the reset button on the OBC AFCI to see if it resets and the LED illuminates. If so, you have the LINE wires on the LINE terminals. If not, the LINE wires are the ones capped off in step (a) and the load wires are the ones connected to the device.
(e) Turn the power OFF at the circuit breaker or fuse box. Disconnect device. Label cables LINE and LOAD.
(f) Go to step 7.

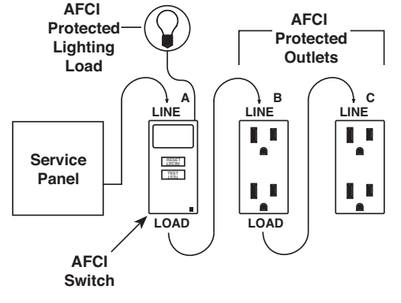
Box with more than two cables:

(g) If you not sure about any part of these instructions or need assistance to identify the LINE and LOAD wires in a wall box with more than two cables please consult an electrician.

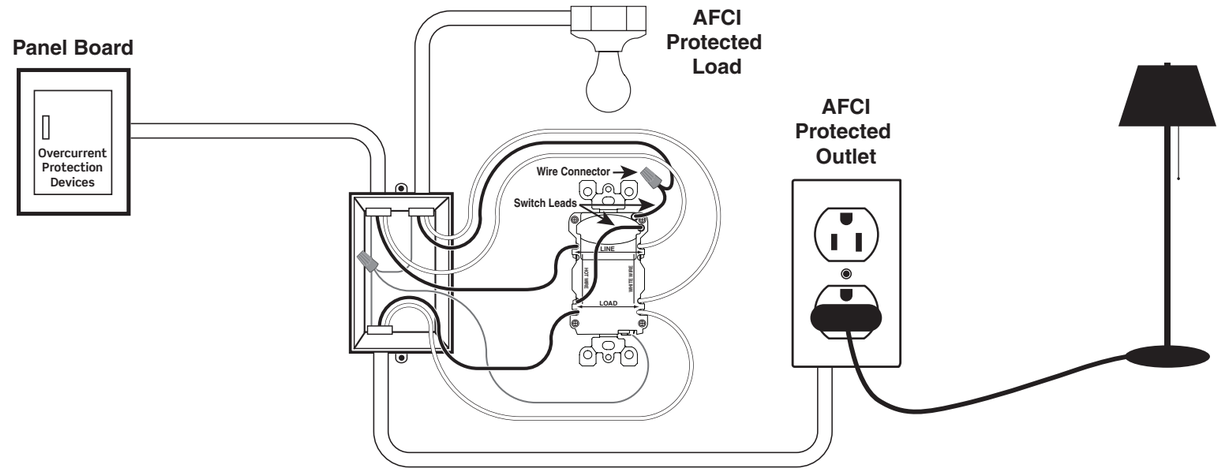
Placement in circuit:

To maximize protection install at the first device location in the circuit.

Sample circuit:

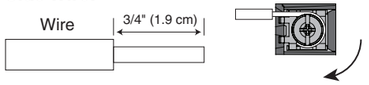


7. Connect the wires; only after reading the other side completely



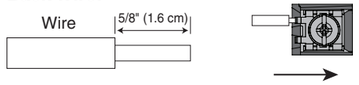
About Wire Connections:

Side Wire:

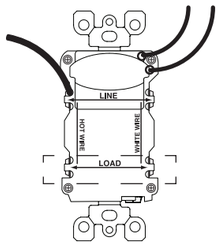


For Side wire - Loop clockwise 3/4 of the way around screw

Back Wire:



For Back wire - Insert bare wire fully and tighten terminal clamp on conductor **ONLY**.



Connect Ground wires to OBC AFCI and Box:

- Connect a 6-inch bare copper (or GREEN) 12 or 14 AWG wire to the grounding terminal on the OBC AFCI. If the box has a grounding terminal, also connect a similar wire to the grounding terminal on the box. Connect the ends of these wires to the LINE and LOAD cable's bare copper (or GREEN) wire using a wire connector. If these wires are already in place, check the connections.

Connect LINE wires to the LINE terminals:

- Connect the white wire to the LINE WHITE terminal (Silver).
- Connect the black wire to the LINE HOT terminal (Brass).

Connect SWITCH leads to a lighting load:

- Remove the YELLOW sticker to reveal the LOAD terminals.
- Connect one black SWITCH lead to the LOAD HOT terminal (Brass).
- Connect the other black SWITCH lead to the hot (black) wire of the lighting load using a wire connector.
- Connect the neutral (white) wire from the lighting load to the WHITE LOAD terminal (Silver).

Connect downstream cable wires to the OBC AFCI LOAD terminals (only if there are downstream outlets in the circuit):

- Remove the YELLOW sticker to reveal the LOAD terminals.
- Connect the white wire to the LINE WHITE terminal (Silver).
- Connect the black wire to the LINE HOT terminal (Brass).

Complete the installation:

- Fold the wires into the box, keeping the grounding wire away from the WHITE and HOT terminals.
  Screw the device to the box and attach the faceplate.
- Go to step 8.

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8. Test your work

Why perform this test?

- If you miswired the OBC AFCI, will not reset or function properly.
- If you mistakenly connect the LINE wires to the LOAD terminals, the OBC AFCI will not reset and will not provide power to either the connected load or outlets downstream.

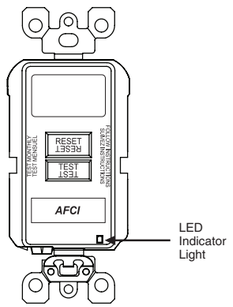
Procedure:

A Turn the power ON at the service panel. If the indicator light on the OBC AFCI with Switch is ON go to the Troubleshooting section because the LINE and LOAD wiring connections have been reversed. You will not be able to Reset the OBC AFCI in this condition.

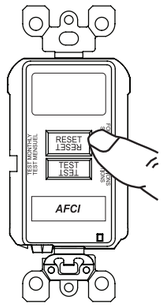
B Press the RESET button fully, if the Indicator Light turns ON and the Load does not automatically turn on, actuate the switch to the other position. If the load turns on and off when you actuate the switch twice you have properly installed the OBC AFCI with Switch.

C Press the TEST button (then the RESET button) every month to assure proper operation. If the Indicator Light does not OFF and come back ON or if the OBC AFCI cannot be reset, then it must be replaced.

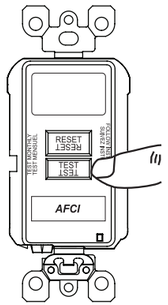
A



B



C



TROUBLESHOOTING

Turn the power OFF and check the wire connections against the wiring diagram. Make sure that there are no loose wires or loose connections. Start the test from the beginning of step 8 if you rewired any connections to the OBC AFCI.

General Information:

Cat. No.	Ratings
AFSW1	Feed-Through rating - 20A-125V AC, 60 Hz
Switch	15A max. - 125V AC, 60 Hz 1/2 Hp. @ 125V, for motor loads of 12 FLA max., and not to exceed 1/2 Hp.

Patents and Trademarks:

This product is covered by US Patent Nos. 6,040,967; 6,088,205; 6,282,070; 6,381,112; 6,433,978; 6,437,953; 6,639,769; 6,646,838; 6,657,834; 6,788,173; 6,944,001; 7,336,458; 7,400,479;7,697,252; 7,907,371; 8,054,595; 8,130,480; 8,599,522; 8,599,523 and corresponding foreign patents.

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Support:

For Technical Assistance Call:

1-800-824-3005 (U.S.A. Only)
1 800 405-5320 (Canada Only)

Visit:

www.leviton.com

FOR CANADA ONLY

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