Electrical Fires Rank as one of the top Safety Hazards in Homes

BY LEVITON MANUFACTURING

With electrical fires ranking as one of the top safety hazards in homes, it's good to know that homeowners are now on the radar when it comes to arc-fault protection to help reduce the likelihood of their electrical system being the cause of a fire.

Requirements for residential arc-fault protection were first introduced in the 1999 National Electrical Code® (NEC®) cycle, but have been expanded in every Code cycle since. The 2014 NEC is the most inclusive to date, mandating AFCI protection in residences in the following locations:

- Kitchens • Family rooms • Dining rooms
- Living rooms • Parlors • Libraries
- Dens • Bedrooms • Sunrooms • Closets
- Hallways • Laundry areas • Recreation Rooms

It is important to note that the 2011 Code requires that AFCI protection be added when changing/replacing a receptacle in an "AFCI" location. Even if the geographical area you service is not currently on the 2014 Code, it is advisable to encourage homeowners to add AFCI protection, especially in older homes where there is a higher likelihood of an electrical fire. This will not only save time and money in the future, but more importantly, will provide a safer living environment for their family today.

There are two ways to incorporate AFCI protection into an electrical system: AFCI Circuit Breakers or Outlet Branch Circuit (OBC) AFCI Receptacles. OBC AFCI Receptacles are fairly new to the market, but offer a sensible alternative to AFCI Circuit Breakers, particularly because they provide the benefit of localized TEST and RESET buttons on the face of the device. This makes them convenient for homeowners to respond to if the device trips.

OBC AFCI Receptacles are designed to help prevent electrical fires that can be caused by potentially dangerous arc-faults in an electrical circuit. These devices contain electronic components that constantly monitor a circuit for the presence of "normal" and "dangerous" arcing conditions. Based upon an established threshold of arc energy, the OBC AFCI can be triggered to quickly react and cut power to a circuit if "dangerous" arcing is detected. It is important for residents of a home to understand the difference between "normal" arcing, which is normally safe, and "dangerous" arcing. Below are a few typical examples of each, which you can use to educate residents during an inspection.

Low-Energy/Operational Arcs – Typically Safe
- Naturally occur when contact or switch opens/closes
- When a motor with brushes runs
- Generated by household appliances such as refrigerators, air conditioners, tools or fans

High-Energy/Hazardous Arcs – Potentially Dangerous
- Should not occur or should be safely contained
- When insulation on a wire has been damaged
- Loose connections that expose wire
- Loose connections where wires separate, causing an arc to jump from one place to another

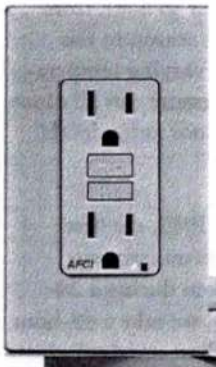
When installed as the first outlet on a branch circuit, OBC AFCI Receptacles provide series arc protection for the entire branch circuit. They also provide parallel arc protection for the branch circuit starting at the OBC AFCI receptacle. OBC AFCI Receptacles may be used on any wiring system regardless of the panel and are ideal for older homes, which often have electrical panels that are not compatible with AFCI breakers.

OBC AFCI Devices are available in a number of different models to satisfy a range of applications.

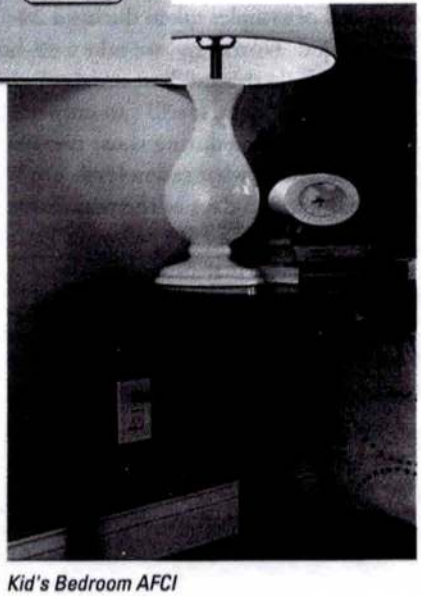
AFCI Receptacle
OBC AFCI Receptacles address the dangers associated with both types of potentially hazardous arcing – parallel and series arcing. They provide feed-through protection and are able to detect downstream parallel and series arc-faults as well as upstream series arc-faults. Utilizing an AFCI receptacle offers homeowners the benefit of localized TEST and RESET. Applications include installation in living rooms, dining rooms, family rooms, bedrooms, parlors, dens, libraries, sunrooms, recreation rooms, closets, hallways, dormitories or similar areas.

Blank Face AFCI
The Blank Face AFCI offers the ideal solution for outlet branch circuits where AFCI protection is desired, but located where a receptacle is not needed. This type of application could include installing a Blank Face AFCI in a location to make AFCI protection readily accessible per the 2014 National Electrical Code. A Blank Face AFCI may also be used on circuits feeding lighting loads and/or other loads such as smoke detectors where a receptacle is not used.

Combination AFCI/Switch
A Combination AFCI/Switch provides AFCI protection, plus the convenience of a single-pole switch to control the lights. This combination is ideal for kitchens, family rooms, bedrooms, dining rooms and hallways. The AFCI Switch may be used for new circuits or modifications to existing circuits where a switch is the first outlet on a branch circuit. ■



AFCI 15-amp



Kid's Bedroom AFCI