# What Causes Arc-Faults?

Often unseen, arc faults can occur anywhere in the home's electrical system including:



Within walls from nails, screws or staples inadvertently driven into wires



Through old or cracked wires or cords



At loose electrical connections or cords damaged by doors closing on them



Within electrical cords accidently damaged by furniture resting or pressing upon them

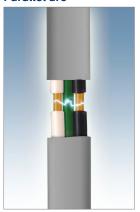


Through wires or cords damaged by heat, sunlight or humidity

# What are Arc-Faults?

An arc-fault is an unintentional arcing condition in a circuit. Arcing creates high intensity heating at the point of the arc resulting in burning particles that can exceed 10,000 degrees Fahrenheit and may over time ignite surrounding material such as wood framing or insulation. There are two types of potentially dangerous arcs – parallel arcs and series arcs. The illustrations below depict the dangerous current flow as it occurs in both events.

#### Parallel arc



Series arc



The U.S. Fire Administration (USFA) National Fire Incident Reporting System reported that in 2011, an estimated 47,700 home structure fires reported to U.S. fire departments involved some type of electrical failure or malfunction as a factor contributing to ignition. These fires resulted in 418 civilian deaths, 1,570 civilian injuries, and \$1.4 billion in direct property damage. According to the National Fire Protection Association (NFPA), arc-faults are "the principle electrical failure mode resulting in fire".

## **OBC AFCI Devices**



Outlet Branch Circuit AFCI with LED Indicator 15A-125V @ Receptacle

20A-125V @ Feed-Through 20A-125V @ Receptacle 20A-125V @ Feed-Through

Provides feed-through protection and can detect parallel and series downstream arcfaults as well as upstream series arc-faults.

15 Amp Shown

Cat. No. AFTR1 (15A) Cat. No. AFTR2 (20A)



#### Blank Face Outlet Branch Circuit AFCI with LED Indicator 20A-125V @ Feed-Through

Ideal solution on circuits feeding lighting loads and/or other loads such as smoke detectors where a receptacle is not used.

Cat. No. AFRBF



#### Combination AFCI/Switch 15A-125V @ Receptacle 20A-125V @ Feed-Through

The convenience of a single pole switch to control the lights combined with AFCI protection. May be used for new circuits or modifications to existing circuits where a switch is the first outlet on a branch circuit.

Cat. No. ASFW1



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# SmartlockPro® Outlet Branch Circuit AFCI Devices

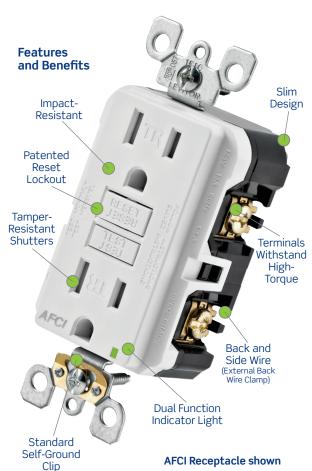


# Advanced technology helps protect against electrical fires resulting from arc-faults.

Whole house electrical safety is a tall order, but our expanded line of SmartlockPro Outlet Branch Circuit (OBC) Arc Fault Circuit Interrupter (AFCI) Devices provides a convenient way to help add protection from dangerous arc-faults to any room of your home. Previously, the only available option for providing the required AFCI protection against electrical fire hazards was through the use of AFCI breakers; now OBC AFCI Devices offer a sensible alternative.

Leviton OBC AFCI Devices are designed to identify potentially dangerous arc-faults and respond by interrupting power to help prevent an electrical fire. They feature TEST and RESET buttons on the face of the device, offering the convenience of localized control so there is no need to examine the circuit breakers. OBC AFCI Devices may be used on any wiring system as specified in the National Electrical Code® (NEC) and are easy to install as replacement devices or in new construction.





Meets latest UL Requirements

#### **Lockout Action**

As an additional safeguard, Leviton AFCI Devices feature a lockout function which prevents the device from being reset if:

- it not functioning properly
- protection has been compromised
- line and load wires were reversed during installation



### AFCI vs. GFCI

	AFCI	GFCI
What is it?	Provides protection from electrical fires that could result from arc-faults	Protects people from shocks and electrocution
What does it do?	Detects potentially hazardous arc-faults and quickly cuts off power	Interrupts power if a ground fault is detected
Where would I use it?	Required by the NEC in: kitchens, family rooms, dining rooms, living rooms, parlors, libraries, dens, bedrooms, sunrooms, recreation rooms, closets, hallways, laundry rooms or similar rooms or areas. Also required in college dormitories.	Required by the NEC in wet or damp locations such as kitchens, bathrooms, basements, laundry rooms, garages, porches and any other areas where water may be present.

For AFCIs, the Code applies to new construction and for branch circuit modifications, extensions or replacement receptacles.