

Arc Fault Circuit Interrupter (AFCI) Receptacles

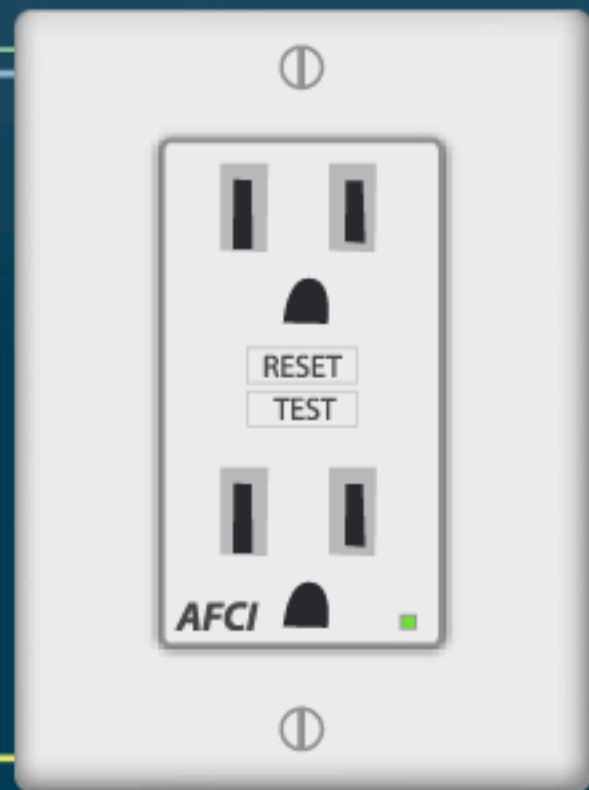
Why is it needed?

NFPA reported 47,700 home fires involved some type of electrical failure or malfunction in 2011. Those fires resulted in 418 deaths, 1,570 injuries, and \$1.4 billion in direct property damage. However, the CPSC estimates more than 50% of electrical fires that occur every year could be prevented by AFCIs.

418
DEATHS

1,570
INJURIES

\$1.4 BILLION
PROPERTY DAMAGE



BRANCH CIRCUIT WIRING

APPLIANCES

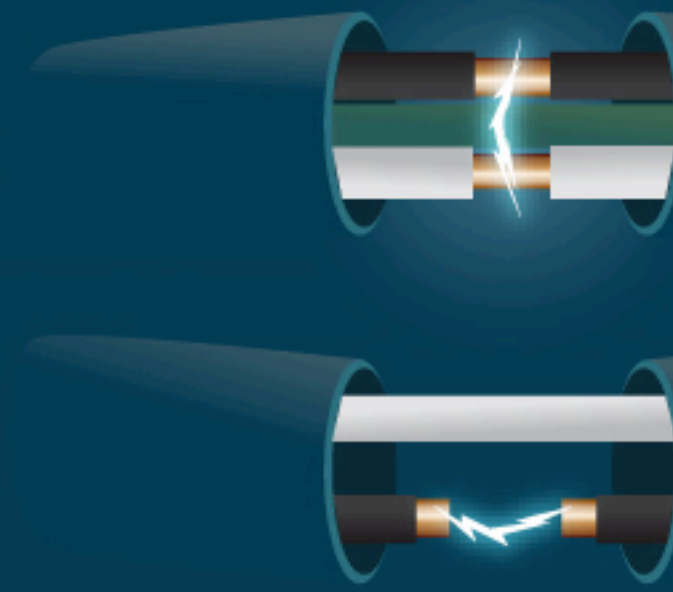
CORDS

How does it work?

Interrupts power when an arc-fault is detected in the circuit downstream from where the receptacle is installed, including within items plugged into it. Provides protection from arc-faults beyond branch circuit wiring extending to appliances and cords plugged into the receptacle. Also provides protection for series arc-faults upstream from where the receptacle is installed.

What is an arc fault?

An arc fault is a dangerous electrical problem caused by damaged, overheated, or stressed electrical wiring or devices. Arc faults can occur when older wires become frayed or cracked, when a nail or screw damages a wire behind a wall, or when outlets or circuits are compromised.



Parallel Arc: Arc between the hot and neutral conductor or between the hot and ground conductor.

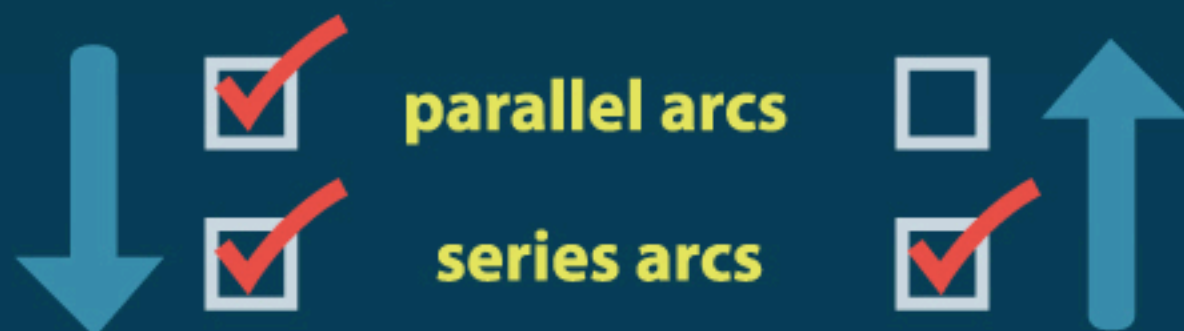
Series Arc: Arc along the same conductor or at connections.

Where is it required by the National Electrical Code® (NEC)?

NEC

The 2014 NEC expanded Arc Fault Circuit Interrupter Protection (Section 210.12 and 406.4(D)(4)) to include most circuits. The use of AFCI receptacles are now an acceptable form of protection when in compliance with some restrictions as specified in the NEC. The 2014 NEC allows 6 different installation methods to provide AFCI protection in new construction and specific replacements.

Things to consider about AFCI receptacles:



RESET **TEST**

Protects all downstream wire and appliances from both parallel and series arcs, and also protects from series arcs upstream in the the wiring between the source of the circuit and the first outlet on the circuit, called the "home run".

Provides localized **TEST** and **RESET** ability.



States and localities may differ in the version of the NEC applied to their jurisdiction. Consult an electrician to determine if your AFCI plans comply with applicable codes. To learn more about AFCI protection and the NEC, visit www.esfi.org.

