Combination Arc Fault Circuit Interrupters (AFCI)

Provides arc fault protection

An Arc Fault Circuit Interrupter (AFCI) detects arc faults and de-energizes the circuit to prevent electrical fires. Combination arc fault circuit interrupters protect against overloads, short circuits, parallel arcs, and series arcs. Combination AFCI comply with the 2008 and forward National Electric Code (NEC) requirements for dwelling units.

ABB's combination arc fault circuit interrupters electronically identify unique current and voltage characteristics of dangerous arc faults and de-energize the entire circuit when one occurs. A combination arc fault circuit interrupter provides protection from:

1. Overloads: connected equipment exceeds the rated amperage for the circuit wiring.
2. Short circuits: when a hot wire comes in contact with a neutral wire, ground wire, or another hot wire.
3. Parallel arcs: unintentional flow of electricity between two separate wires (line-to-line, line-to-neutral, and line-to-ground)
4. Series arcs: unintentional flow of electricity over a gap within a single wire.

Electrical fires in homes break out more than 45,000 times a year in the U.S. alone. Many result from unintended electrical arcs that may ignite combustible materials in the home. Arcs may arise from a number of situations:

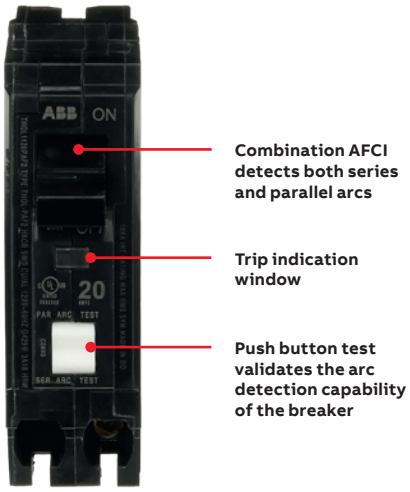
- Damaged wires
- Shorted wires
- Wires pinched to grounded metal box
- Loose electrical connections
- Worn electrical insulation
- Overheated or stressed electrical cords and wires
- Misapplied or damaged appliances
- Corroded connections

The combination arc fault breakers are available in multiple versions to install for many different applications.

- ReliaHome™ T-Series load centers accept long and short pigtail breakers.
- ReliaHome™ P-Series/P-Series+ load centers accept plug on neutral, long pigtail, and short pigtail breakers.
- PowerMark™ Pro load centers accept plug on neutral, long pigtail, and short pigtail breakers.
- PowerMark™ Gold load centers accept long and short pigtail breakers.
- ReliaGear® panelboards accept bolt-on breakers.

Specifications:

- 1 pole
- 15A or 20A
- 10kAIC or 22kAIC
- 120/240 Vac
- Certified by UL/UL Solutions
  - UL489 – molded case circuit breakers
  - UL1699 – arc fault circuit interrupters

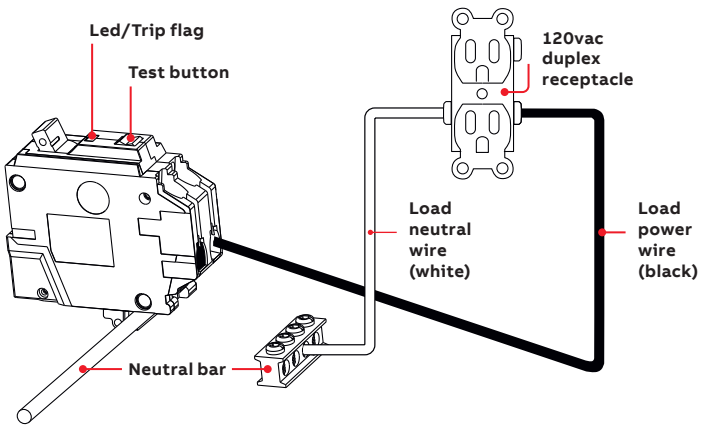


Technical data					
	1 pole 120/240 Vac				
	Ampere Rating	**Long Pigtail**	**Short Pigtail**	**Plug-on neutral**	**Bolt-on**
10,000 AIC					
	15	THQL1115AF2	THQL1115AF2S	THQL1115PAF2	THQB1115AF2
	20	THQL1120AF2	THQL1120AF2S	THQL1120PAF2	THQB1120AF2
22,000 AIC					
	15	THHQL1115AF2		THHQL1115PAF2	THHQB1115AF2
	20	THHQL1120AF2		THHQL1120PAF2	THHQB1120AF2

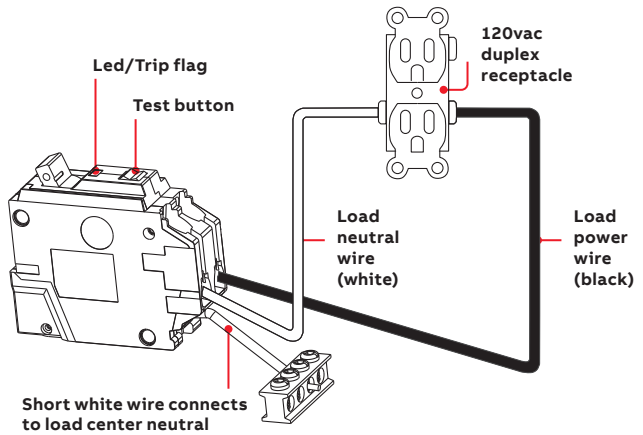
Flexible New Construction Installation
Installing ABB's AFCI into ReliaHome™ load centers, PowerMark™ load centers, and ReliaGear® lighting panels can be accomplished in different ways for ease and space within your enclosure.

ABB's patented AFCI technology allows you to connect your white load neutral wire to either the terminal side of the circuit breaker labeled load neutral or directly to the neutral bar within the panel or enclosure.

Arc Fault Circuit wiring diagram 1



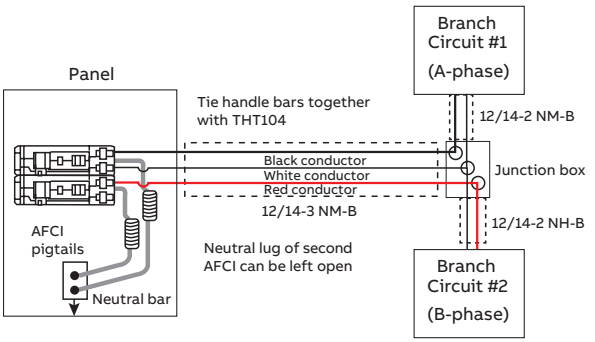
Arc Fault Circuit wiring diagram 2



ABB's Renovation Advantage
Wiring can be complicated with multi-wire circuits, shared neutrals and mixed neutrals. ABB's combination arc fault circuit interrupters utilize patented technology to recognize dangerous arcs without depending on an isolated neutral path. Many one pole circuit breakers use some form of ground fault measurement on the neutral to aid in the detection of arc fault signatures, requiring a two pole arc fault breaker with one neutral input shared by both poles of the breaker.

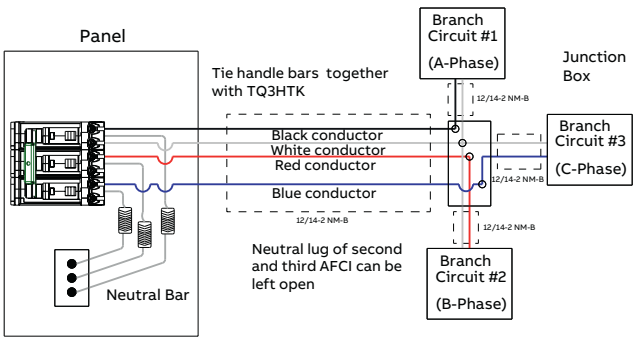
ABB's simple solution does not need to monitor the neutral to provide full protection against arc faults. This allows installers to use two single pole arc fault circuit interrupters tied together with a handle tie to easily address mixed or shared neutrals commonly found in existing installations.

Single phase wiring diagram



Note: For simplicity the ground wires are not shown.

Three phase wiring diagram



Note: For simplicity the ground wires are not shown.

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residential-circuit-breakers

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