



Combination Arc Fault Circuit Interrupter (AFCI)

Provides arc fault protection



Electrical fires in homes break out more than 67,000 times each year in the U.S. alone. Many result from arc faults. Arc faults are unintended electrical arcs that may ignite combustible materials in the home. Four types of arc faults may occur: line-to-line, line-to-ground, line-to-neutral, or a series arc fault, which is arcing over a gap within a single wire.

Arc Faults may arise from a number of situations

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

GE Combination AFCIs help protect against all types of arc faults

An arc fault circuit interrupter (AFCI) detects arc faults and de-energizes the circuit before a fire can start. GE Combination AFCIs offer multiple kinds of protection.

1. Parallel protection – Combination AFCIs can detect and interrupt parallel arc faults (line-to-line, line-to-ground, line-to-neutral, or a series arc fault).
2. Series Protection – A series arc fault is the unintended flow of electricity over a gap within a single wire. These arc faults were not detectable until advanced technology allowed the development of the Combination AFCI breaker.
3. Overload protection.
4. Short circuit protection.

These combination AFCIs electronically identify unique current and voltage characteristics of all arc faults and de-energize the entire circuit when one occurs.

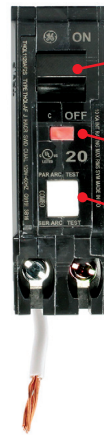
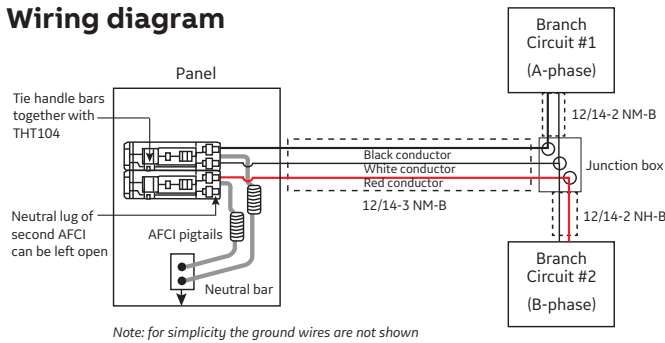
- GE is one of the few companies to offer **AFCI in a 1 inch standard breaker** package freeing up valuable wire space.
- **Fulfills 2008 National Electric Code (and later)** requirements for all dwelling units.
- **2 position Push button test** validates the arc detection capability of the breaker (Series and Parallel).
- **Protects the entire circuit** with an easy plug-in breaker design.
- **Combination AFCIs** are able to detect series and parallel arcs at a very low current level.

Combination Arc Fault Circuit Interrupter (AFCI)

Technical data

Catalog Number	Amps	Pole	Volt	Interrupting Rating AIC	Standard Pack
Long Pig Tail					
THQL1115AF2	15	1	120/240 Vac	10k	10
THQL1120AF2	20				
THHQL1115AF2	15			22k	
THHQL1120AF2	20				
Short Pig Tail					
THQL1115AF2S	15	1	120/240 Vac	10k	10
THQL1120AF2S	20				

Wiring diagram



Combination AFCI detects both series and parallel arcs

Trip indication window

Push button test validates the arc detection capability of the breaker

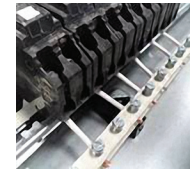


Specifications

- 1 pole
- 15A or 20A
- 10kAIC or 22kAIC
- 120/240 VAC
- Wire Range #14-8 AWG CU / #12-8 AWG AL
- UL listed Arc Fault Circuit Interrupters No. 1699
- UL Listed Molded Case Circuit Breakers No. 489

Introducing our NEW line of Short Pigtail Circuit Breakers

- Faster wiring
- Cleaner finished look
- Uncluttered wire gutters
- Secure Neutral connections
- Visibly verifiable Neutral termination
- Use in GE load centers 16 circuits or greater
- See how it works at: <https://youtu.be/v13WVn74QQ>



The GE AFCI advantage

Multi-wire circuits, shared neutrals, and mixed neutrals = No Problem!

New construction applications

Our competitors often use some form of Ground Fault measurement to aid in the detection of Arc Fault signatures. The only way for them to have a shared neutral solution is to create a two pole breaker with one neutral input shared by both poles of the breaker.

- Purchasing a 2 pole AFCI breaker that is specific to the shared application is generally quite a bit more expensive than two 1 pole breakers.
- Installers must inventory a completely different breaker catalog number and plan the number of shared neutrals runs.
- Installers must keep track of the neutrals as they would with a standard 1 pole installation.

GE's simple solution uses (2) 1 pole breakers tied together with a handle tie.

- The handle tie is the only added expense – quite small.
- You don't have to carry a separate catalog number – just use two of the standard 1 pole breakers.
- GE's AFCI does not monitor the neutral at all.
- Only the pigtail on the breaker has to be connected to energize the breaker – as with our competition.

See DET-719 for additional information and wiring instructions.

Retrofit applications

GE sets itself apart in its ability to ignore mixed and shared neutrals commonly found in existing installations.

The risk of having shared or non-isolated neutrals in retrofit

situation is very high and will cause breakers that use a ground fault scheme in their AFCI detection to nuisance trip.

Disadvantaged breakers that use a ground fault scheme in their AFCI detection:

- The circuit's neutral must come back to the specific breaker from which the hot leg originated.
- The neutral cannot be combined with other neutrals downstream.
- If the above conditions are not met the AFCI will trip as a result of its ground fault detection.
- All circuits with the above conditions must be cleaned up to achieve AFCI protection.

The GE solution is a one pole AFCI breaker – Period!

- Install the GE AFCI as you would any traditional circuit breaker.
- The GE AFCI does not need to monitor the neutral to provide full protection.
- The GE AFCI will not trip if the neutral for the protected circuit is combined downstream with neutrals of other circuits.

The GE solution is the superior alternative when compared to receptacle options as well.

- The entire circuit is AFCI protected regardless of the length of the home run.
- Contractors and homeowners need not worry about:
 - Accessibility issues either code driven or due to the location of the receptacles.
 - Trip reset procedures are always conducted at the load center – reducing callbacks when customers cannot figure out where to reset a trip device.

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