

SIEMENS QA120AFC

Siemens QA120AFC 20-Amp Single Pole 120-Volt Plug-On Combination AFCI Breaker Instruction Manual

Model: QA120AFC

1. PRODUCT OVERVIEW

The Siemens QA120AFC is a 20-Amp, single-pole, 120-volt plug-on combination Arc Fault Circuit Interrupter (AFCI) breaker. This device is designed to detect and mitigate the effects of hazardous arcing faults in electrical circuits, providing enhanced safety for residential and commercial applications.

Unlike Branch/Feeder AFCIs, which primarily detect line-to-neutral and line-to-ground arcing faults, the Combination Type AFCI offers comprehensive protection. It detects both high-energy parallel arcing (line-to-neutral and line-to-ground) and low-energy series arcing. This combined capability helps protect downstream branch circuit wiring, cord sets, and power supply cords from potential fire hazards caused by electrical arcs.

The breaker includes LED trip indicators located near the handle. These indicators provide valuable diagnostic information, helping to identify the type of fault that caused the breaker to trip. The LED indications remain active for 5 seconds each time the AFCI is turned "ON" for up to 30 days after the last trip event.

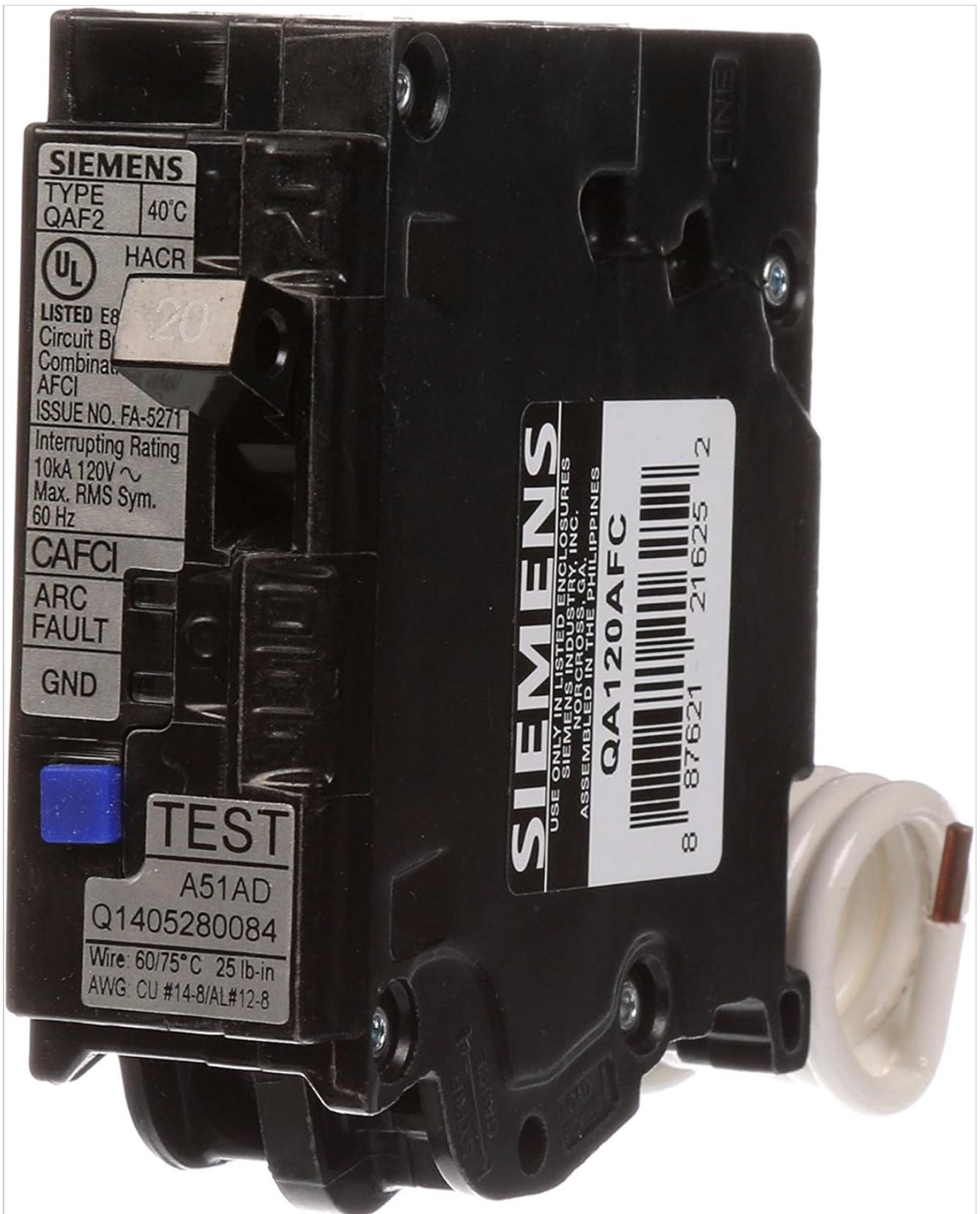


Figure 1: Front view of the Siemens QA120AFC 20-Amp Combination AFCI Breaker, showing the handle, test button, and labels.

2. KEY FEATURES

- **Single Pole, 20 Amp:** Designed for 120-volt circuits requiring 20-amp protection.
- **Combination Type AFCI:** Provides protection against both parallel and series arcing faults.
- **LED Trip Indicators:** Offers clear identification of the last trip condition for diagnostic purposes.
- **Enhanced Wire Bend Space:** Features 1/4 inch more wire bend space compared to previous designs for easier installation.

- **Optimized Lug Angle:** Both lugs are positioned at the same angle to facilitate simpler wiring connections.
- **25 lb./in. Torque Rating:** Ensures secure wire connections.

3. SAFETY INFORMATION

WARNING: Risk of electric shock or fire. Installation and servicing of this circuit breaker must be performed by a qualified electrician in accordance with all national and local electrical codes.

- Always turn off the main power supply at the service panel before installing or servicing circuit breakers.
- Use appropriate personal protective equipment (PPE), including insulated gloves and safety glasses.
- Ensure all wiring connections are tight and conform to the specified torque rating.
- Do not use this device if it appears damaged.
- Regularly test the AFCI breaker using the integrated test button as described in the "Operation" section.

4. INSTALLATION

This section provides general guidance. Always refer to the specific wiring diagram of your electrical panel and consult a qualified electrician for installation.

1. **Power Disconnection:** Turn off the main power to the electrical panel at the main service disconnect. Verify power is off using a voltage tester.
2. **Identify Slot:** Locate an available slot in your Siemens load center.
3. **Connect Neutral Wire:** Connect the white coiled neutral wire from the AFCI breaker to the neutral bar in the load center. Ensure a secure connection.
4. **Install Breaker:** Position the breaker onto the bus bar and firmly push until it clicks into place.
5. **Connect Load Wires:** Connect the circuit's hot (black) wire to the line terminal on the breaker and the circuit's neutral (white) wire to the neutral terminal on the breaker. Tighten screws to the specified 25 lb./in. torque.
6. **Verify Connections:** Double-check all connections for tightness and proper routing.
7. **Restore Power:** Close the electrical panel cover. Turn on the main power supply.



Figure 2: Example of wire connection to a circuit breaker, showing the neutral wire coiled and connected.



Figure 3: A qualified professional installing a circuit breaker into a residential electrical panel.

5. OPERATION

5.1 Turning On/Off

To turn the circuit ON, push the breaker handle firmly to the "ON" position. To turn it OFF, push the handle to the "OFF" position.

5.2 Testing the AFCI Breaker

It is recommended to test the AFCI breaker monthly to ensure proper operation.

1. Ensure the breaker is in the "ON" position.
2. Press the "TEST" button located on the front of the breaker.
3. The breaker should immediately trip to the "TRIPPED" (center) position.
4. To reset, push the handle completely to the "OFF" position, then firmly to the "ON" position.
5. If the breaker does not trip when the "TEST" button is pressed, it may be faulty and should be replaced by a qualified electrician.





Figure 4: Close-up view of the Siemens QA120AFC breaker, highlighting the blue "TEST" button for monthly testing.

6. MAINTENANCE

AFCI breakers generally require minimal maintenance. Regular testing is the primary maintenance activity.

- **Monthly Testing:** Perform the test procedure described in Section 5.2 at least once a month.
- **Visual Inspection:** Periodically inspect the breaker for any signs of physical damage, discoloration, or loose connections. If any issues are observed, consult a qualified electrician.
- **Cleaning:** Keep the area around the breaker and electrical panel clean and free from dust and debris. Do not

use liquids to clean the breaker or panel interior.

7. TROUBLESHOOTING

7.1 Breaker Trips Frequently

If the AFCI breaker trips frequently, it indicates an issue on the circuit it protects. This could be due to:

- **Arcing Fault:** The AFCI is detecting a hazardous arcing condition. This could be a loose wire, damaged insulation, or a faulty appliance.
- **Overload:** Too many devices are drawing power from the circuit, exceeding its capacity.
- **Short Circuit:** A direct connection between hot and neutral/ground wires.
- **Faulty Appliance:** A connected appliance may be causing the fault. Unplug all devices and reset the breaker. Plug them back in one by one to identify the faulty device.
- **Nuisance Tripping:** In rare cases, certain electronic devices or motors can cause false trips. Consult an electrician if this is suspected.

If the cause cannot be identified, contact a qualified electrician to diagnose and resolve the issue.

7.2 LED Trip Indicators

The LED indicators near the breaker handle provide information about the type of fault that caused the trip. Refer to the specific labeling on your breaker for exact interpretations, but generally:

- Different flash patterns or colors may indicate specific fault types (e.g., series arc, parallel arc, overload).
- The LEDs illuminate for 5 seconds when the breaker is turned ON, for up to 30 days after the last trip.
- Consult the detailed documentation provided with your electrical panel or contact Siemens support for a complete guide to LED indicator meanings.

8. SPECIFICATIONS

Attribute	Value
Brand	SIEMENS
Model	QA120AFC
Current Rating	20 Amps
Voltage	120 Volts
Number of Poles	1
Circuit Breaker Type	Combination AFCI
Mounting Type	Plug-In Mount
Product Dimensions (D x W x H)	30"D x 8"W x 6"H <i>(Note: These dimensions may refer to packaging or a different product. Always verify with physical product or official Siemens documentation.)</i>
Item Weight	0.3 Pounds
Included Components	Breaker

UPC	784497742062, 887621216252, 887621216283, 789911824089
Manufacturer	SIECV

9. WARRANTY AND SUPPORT

The Siemens QA120AFC Combination AFCI Breaker comes with a **1-Year Limited Warranty** from the date of purchase. This warranty covers defects in materials and workmanship under normal use.

For warranty claims, technical support, or further assistance, please contact Siemens customer service or visit the official Siemens website. Keep your proof of purchase for warranty validation.

Siemens Official Website: www.usa.siemens.com/electrical

