

Type BR (1-inch) dual purpose arc fault/ground fault circuit interrupter



Description

The 2014 National Electrical Code® (NEC®) expands the required use of combination arc fault protection to kitchens and laundry areas. The existing requirement for ground fault protection is unaffected by the new requirements, creating scenarios where a dual purpose AF/GF circuit breaker is the most efficient device for meeting code.

Eaton's Type BR (1-inch) dual purpose AF/GF is available in 15 A and 20 A ratings. Eaton has also included a diagnostic LED trip code indicator that displays seven different codes to assist in troubleshooting.

Design features

- Lifetime trip code retention
- Overvoltage protection
- Continuous self-test of electronic components
- Diagnostic LED trip code indicator displays most recent trip code
- Single, accessible point of reset

Table 1. Type BR (1-inch) BRLAFGF Selection Chart

Amperes	Number of Poles	kAIC	Catalog Number
Standard—Pigtail			
15	1	10	BRLAFGF115
20	1	10	BRLAFGF120



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Table 2. Specifications

Description	Specification
Catalog number	BRLAFGF115, BRLAFGF120
Voltage requirement	$102 \leq V_{RMS} \leq 132$
Frequency requirement	60 Hz \pm 2 Hz
Power consumption	1.3 W
Surge	In accordance with IEC 61000-4-5
Ambient operating temperature	-31 °F to +150 °F (-35 °C to +66 °C)
Humidity	0% to 95%, noncondensing
Warranty	10-year
UL® standards	UL 489—molded-case circuit breakers, molded-case switches, and circuit breaker enclosures UL 943—ground fault circuit interrupters UL 1699—arc fault circuit interrupters UL 1998—software in programmable components
UL file number	E-45310

Wiring diagram

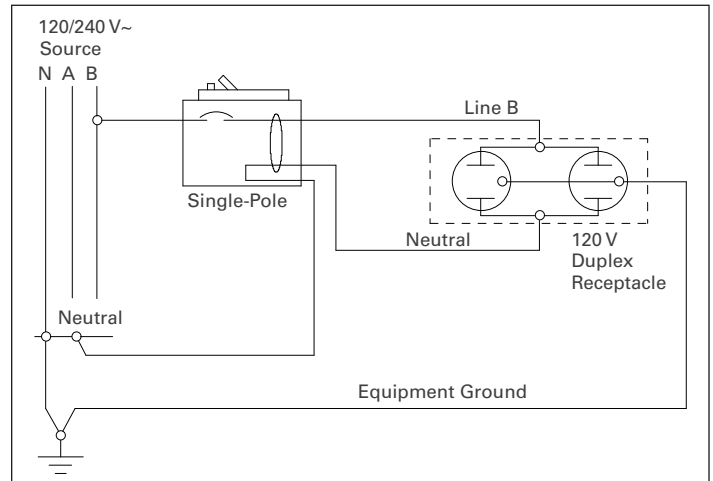


Figure 2. Single-Pole 120 V Load Application Sourced by 120/240 Vac

Dimensions

Dimensions in inches (mm).

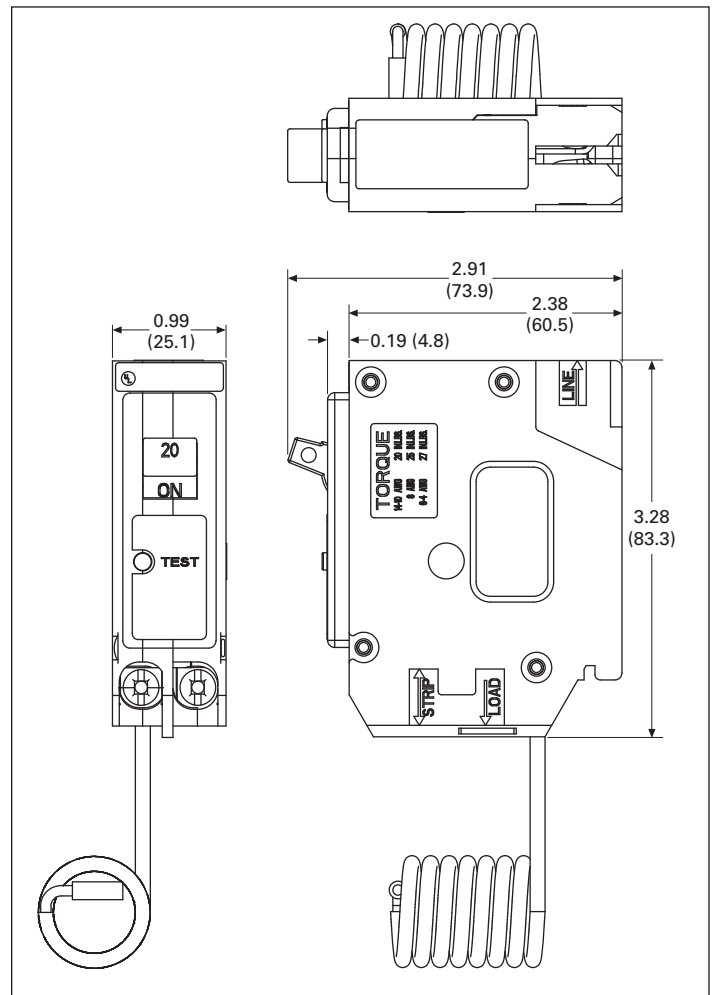


Figure 3. BRCAF

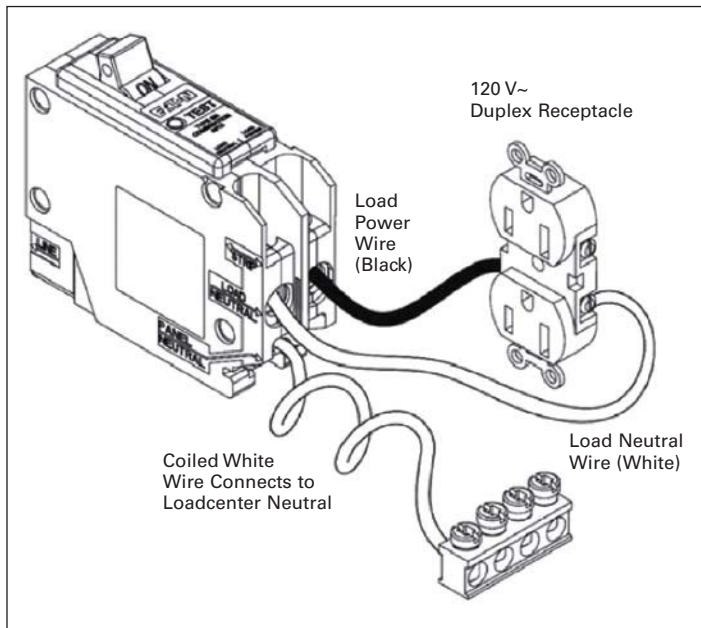


Figure 1. Type BR Arc Fault Circuit Breaker

Table 3. Trip Codes

The following trip codes are displayed through the diagnostic LED trip code indicator. The code will repeat 30 iterations. A “6” code will appear as six short blinks of the LED followed by a pause. A “1” code will appear as one blink followed by a pause.

Trip Code	Description
No code recorded	<p>Thermal/short-circuit/TEST/manual disconnect Note: The breaker does not record trip codes for the conditions listed below. If the breaker is tripped by one of these conditions, the LED will display the most recent recorded trip code.</p> <ul style="list-style-type: none"> • Thermal overload detected by the mechanical portion of the breaker • Short-circuit detection by the mechanical portion of the breaker • Pressing the TEST button • Manually switching the breaker off <p>Upon installation, if the breaker has not experienced a trip that records a code, it will display the last trip code recorded from tests performed at the factory.</p>
1	<p>Series arc Description: A low current arc has been detected within one of the current pathways. Low current arcs are typically series arcs, and are typically found in worn or degraded appliances and extension cords, poor connections in appliances or fixtures, or in contacts within equipment. Resolution: Identify the equipment causing the tripping, and repair or replace.</p>
2	<p>Parallel arc Description: A high current arc has been detected between two conductors. High current arcs are typically parallel arcs, and are usually found in installed wiring where the wire has been compromised by a nail or screw, tight staple, and damaged insulation. Resolution: Locate fault location and replace wire.</p>
3	<p>Short delay Description: Short delay is an electronic backup to the short-circuit mechanism. Resolution: Identify the location of the short-circuit and repair.</p>
4	<p>Overvoltage Description: The breaker will trip if it experiences voltage of 160 V rms or greater. The breaker can be reset and the TEST button can be pushed to verify that the breaker is working properly. Resolution: Investigate utility power for imbalance in the phases or loss of neutral.</p>
5	<p>Ground fault Description: Current has found an alternate path to ground, which could cause harm to people or property. Resolution: Determine the location of leakage current and repair.</p>
6	<p>Self test failure Description: The breaker continually tests the internal electronics and software to ensure that the arc fault detection technology is working properly. If the self-diagnostics fail, the breaker will trip. The built-in self-test features will not allow the AG/GF breaker to re-latch if it detects a malfunction in the AG/GF detection circuit. Resolution: Replace the breaker.</p>

Troubleshooting

See www.eaton.com/troubleshooting for more information.

Contact the Eaton Technical Resource Center at
1-800-326-9513 for further assistance.

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