

Type BR arc fault circuit interrupter

Type BR arc fault circuit interrupter circuit breakers

- 10,000 A interrupting capacity at 120 Vac, 120/240 Vac, and 240 Vac

An arc fault circuit interrupter is a device intended to provide protection from the effects of arc faults by recognizing characteristics unique to arcing and by functioning to de-energize the circuit when the arc fault is detected. As of January 1, 2015, the Canadian Electrical Code now requires that all branch circuits that supply 125 V, single-phase, 15 and 20 A receptacle outlets installed in dwelling unit shall be protected by a combination arc fault circuit interrupter(s) (series arc and parallel arc detection).

Table 14. Single- and two-pole plug-in AFCI circuit breakers

Ampere rating	Configuration	Catalogue number		Two-pole ^a 120/240 Vac 5 per shelf carton 10 kAIC	Wire size range (Cu/Al 60 °C or 75 °C)
		Plug-on Neutral Breaker ^e	Pigtail Breaker		
15	Combination	BRP115AFC ^d	BRN115AFC ^d	BRL215CAF ^{bc}	#14–4 AWG
15	High interrupting 22 kAIC		BRHN115AF	—	#14–4 AWG
20	Combination	BRP120AFC ^d	BRN120AFC ^d	BRL220CAF ^{bc}	#14–4 AWG
20	High interrupting 22 kAIC		BRHN120AF	—	#14–4 AWG
				Requires one 1.00 inch (25.4 mm) space	Requires two 1.00 inch (25.4 mm) spaces

^a Common trip refers to two-pole 240 V load application sourced by 120/240 Vac (see **Figure 2**).

^b Will not fit into CPM112, CPL112, CPL116, CPL120, CPL220, CPL240, 3CPM112, 3CPL218, 3CPL224 or 3CPL230 prior to November 2004.

^c Long style circuit breakers. Please speak to your local Eaton sales rep for proper application.

^d CSA marked only

^e Only for use in the Type BR plug-on neutral style of combination and non-combination loadcentres

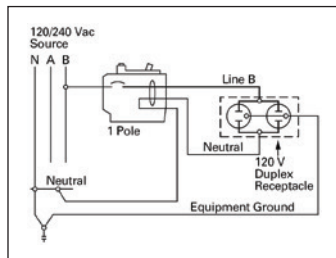


Figure 1. Single-pole, single 120 V load application sourced by 120/240 Vac

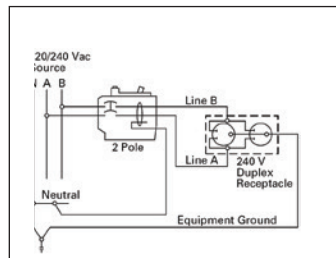


Figure 2. Two-pole, 240 V load application sourced by 120/240 Vac



Type BR combination AFCI circuit breaker



Type BR dual purpose AF/GF breaker



Type BR fire alarm breaker features red handle

Table 15. Single-pole plug-in dual purpose AF/GF breakers

Ampere rating	Configuration	Pon Breaker ^b	Pigtail Breaker
		Single-pole, 120/240 Vac 10 per shelf carton, 10 kAIC Catalogue number	
15	CAFCI / 5 mA GF	BRP115DFC ^a	BRN115DFC ^a
20	CAFCI / 5 mA GF	BRP120DFC ^a	BRN120DFC ^a
Compact body breaker		Requires one 1.00 inch (25.4 mm) space	

^a CSA marked only

^b Only for use in the Type BR plug-on neutral style of combination and non-combination loadcentres

Table 16. Single-pole plug-in fire alarm breakers

Ampere rating	Configuration	Single-pole, 120/240 Vac 10 per shelf carton, 10 kAIC Catalogue number
15	Branch fire alarm	BRF115
20	Branch fire alarm	BRF120
Compact body breaker		Requires one 1.00 inch (25.4 mm) space

Plug-in circuit breakers for CPM/CPL/BRPM/BRPL

Types GFCB and GFEP ground fault

Type GFCB and GFEP ground fault circuit breakers

- 10,000/22,000 A interrupting capacity at 120 Vac and 120/240 Vac
- 5 mA “people protection,” or 30 mA equipment protectors
- Two-pole version features common trip



GFTCB single-pole



GFTCB two-pole

Table 17. (5 mA) single- and two-pole plug-in ground fault circuit breakers

Ampere rating	Wire size range Cu/Al 60 °C or 75 °C (AWG)	Catalogue number		Two-pole, 120/240 Vac 1 per shelf carton			
		Single-pole, 120 Vac, 10 kAIC 1 per shelf carton	Plug-on Breaker ^d 10 kAIC	Pigtail Breaker 10 kAIC	22 kAIC	10 kAIC	22 kAIC
15	#14–8	BRP115GFC ^c	BRN115GFC ^{a c}	BRHN115GF	GFTCB215	GFTCBH215	
20	#14–8	BRP120GFC ^c	BRN120GFC ^{a c}	BRHN120GF	GFTCB220	GFTCBH220	
25	#14–8	—	BRN125GFC ^c	BRHN125GF	GFTCB225	GFTCBH225	
30	#14–8	—	BRN130GFC ^c	BRHN130GF	GFTCB230	GFTCBH230	
40	#14–8	—	—	—	GFTCB240	—	
50	#14–8	—	—	—	GFTCB250 ^b	—	
60	#14–4	—	—	—	GFTCB260	—	
				Requires one 1.00 inch (25.4 mm) space		Requires two 1.00 inch (25.4 mm) spaces	

a Auxiliary switches and bell alarms are available under special order with legacy part number (GFTCB115 and GFTCB120).

Add suffix W1 for alarm switch and W2 for auxiliary switch.

b For use with copper wire only.

c CSA marked only.

d Only for use in the Type BR plug-on neutral style of combination and non-combination loadcentres.

Table 18. (30 mA) single- and two-pole plug-in ground fault circuit breaker equipment protectors

Ampere rating	Wire size range Cu/Al 60 °C or 75 °C (AWG)	Pigtail Breaker	
		Single-pole, 120 Vac, 1 per shelf carton 10 kAIC	Two-pole, 120/240 Vac 1 per shelf carton 10 kAIC
15	#14–8	BRN115EP	GFEP215
20	#14–8	BRN120EP	GFEP220
25	#14–8	BRN125EP	GFEP225
30	#14–8	BRN130EP	GFEP230
40	#14–8	—	GFEP240
50	#14–8	—	GFEP250 ^a
		Requires one 1.00 inch (25.4 mm) space	
		Requires two 1.00 inch (25.4 mm) spaces	

a For use with copper wire only.

Ground fault application note

Single-pole ground fault circuit breakers (GFCBs) are designed for use in two-wire, 120 Vac circuits. **Figure 3** shows a typical wiring configuration. Two-pole GFCBs are designed for use in three-wire, 120/240 Vac circuits, 120 Vac multi-wire circuits employing common, neutral and two-wire, 240 Vac circuits obtained from a 120/240 Vac source. **Figure 4** and **Figure 6** illustrate typical wiring configurations for 120/240 Vac multi-wire circuits. **Figure 5** depicts a 240 Vac, two-wire circuit.

Note: The “panel neutral” conductor connects to the neutral bar, even though the neutral is not included in the load circuit. This connection is necessary to supply a 120 Vac power source to the ground fault sensing circuit. The figures are shown with a 120/240 Vac, single-phase, three-wire power source, but are also applicable to a 120/208 Vac, three-phase, four-wire power supply. For all figures, the electrical operation of the GFCB is not affected by the equipment ground.

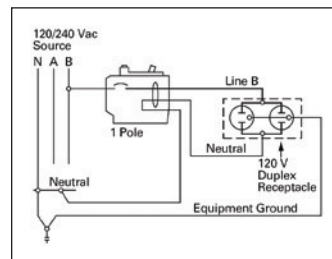


Figure 3. Single-pole

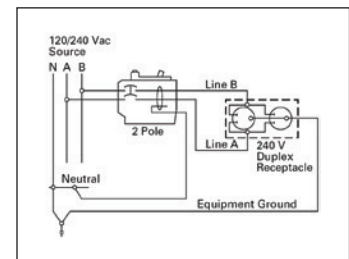


Figure 5. Two-pole

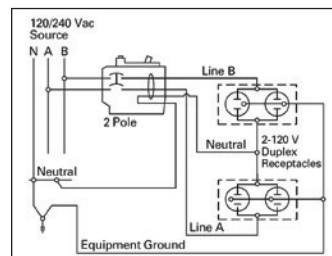


Figure 4. Two-pole

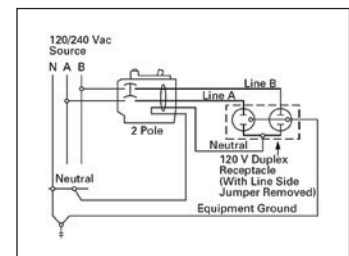


Figure 6. Two-pole

Type BR internationally rated

Type BR internationally rated circuit breakers

- **3000/6000 A** interrupting capacity at 240/415 Vac
- Two- and three-pole versions feature common trip



BR120E



BR215E



BR320E

Table 19. Single-, two-, and three-pole plug-in internationally rated circuit breakers ^{ab}

Ampere rating	Wire size range Cu/Al 60 °C or 75 °C (AWG)	Catalogue number							
		Single-pole, 240/415 Vac 10 per shelf carton		Two-pole, 240/415 Vac 5 per shelf carton		Three-pole, 240-415 Vac 5 per shelf carton			
		3 kAIC	6 kAIC	3 kAIC	6 kAIC	3 kAIC	6 kAIC		
15	#14-4	BR115E	BRH115E	BR215E	BRH215E	BR315E	BRH315E		
20	#14-4	BR120E	BRH120E	BR220E	BRH220E	BR320E	BRH320E		
25	#14-4	BR125E	BRH125E	BR225E	BRH225E	BR325E	BRH325E		
30	#14-4	BR130E	BRH130E	BR230E	BRH230E	BR330E	BRH330E		
35	#14-4	BR135E	BRH135E	BR235E	BRH235E	BR335E	BRH335E		
40	#14-4	BR140E	BRH140E	BR240E	BRH240E	BR340E	BRH340E		
45	#14-4	—	BRH145E	BR245E	BRH245E	BR345E	BRH345E		
50	#14-4	BR150E	BRH150E	BR250E	BRH250E	BR350E	BRH350E		
60	#4-1/0	BR160E	BRH160E	BR260E	BRH260E	BR360E	BRH360E		
70	#4-1/0	BR170E	BRH170E	BR270E	BRH270E	BR370E	BRH370E		
80	#4-1/0	—	—	BR280E	BRH280E	BR380E	BRH380E		
90	#4-1/0	—	—	BR290E	BRH290E	BR390E	BRH390E		
100	#4-1/0	—	—	BR2100E	BRH2100E	BR3100E	BRH3100E		
				Requires one 1.00 inch (25.4 mm) space		Requires two 1.00 inch (25.4 mm) spaces		Requires three 1.00 inch (25.4 mm) spaces	

a Built to British Standard BS3871.

b Non-stocked item requiring special order. Speak to your local Eaton sales rep for lead times.

Table 20. Duplex, 2 single-pole circuits, 240/415 Vac

Ampere rating	Catalogue number
15-15	DNPL1515E
15-20	DNPL1520E
20-20	DNPL2020E
—	—
—	—
Requires one 1.00 inch (25.4 mm) space	