

BR Circuit Breakers



Contents

| <i>Description</i> | <i>Page</i> |
|--|-----------------|
| Overview | V1-T1-42 |
| BR Specialty Products | |
| BR Plug-On Neutral Loadcenters | V1-T1-57 |
| BR Quick Connect Neutral Loadcenters | V1-T1-60 |
| Spa Panels | V1-T1-61 |
| Riser Panel | V1-T1-62 |
| Type BR Renovation Loadcenter | V1-T1-63 |
| BR Loadcenter Options and Accessories | |
| Type BR Retrofit Interior Kits | V1-T1-64 |
| Type BR Mechanical Interlock Kits | V1-T1-68 |
| BR Circuit Breakers | |
| Product Selection | V1-T1-81 |
| Options and Accessories | V1-T1-88 |
| Wiring Diagrams | V1-T1-90 |

BR Circuit Breakers

Product Description

Plug-On Branch Feeder Type Arc Fault Circuit Breakers, Type BR—10 kAIC, 120 Vac and 120/240 Vac

A branch feeder type arc fault circuit interrupter is a device intended to mitigate high current arcing faults in the complete circuit, including connected cords. High current arcing faults can occur from line to neutral or line to ground. These arcing faults are in parallel with the load and produce the most energy of all arcing faults.

The branch feeder type AFCI is required in the 1999 and 2002 National Electrical Code.

The Combination Type AFCI is required in the 2005, 2008, and 2011 National Electrical Code.

Plug-On Combination Type Arc Fault Circuit Breakers, Type BR—10 kAIC, 120 Vac and 120/240 Vac

A combination type arc fault circuit interrupter is a device that includes all of the protection offered by the branch feeder AFCI (mitigation of high current arcing faults in the complete circuit, including connected cords). In addition it provides direct detection of persistent low current arcing faults down to 5 amps with associated mitigation of fire hazards in the cords connected to the outlets. High current arcing faults can occur from line to neutral or line to ground. These arcing faults are in parallel with the load and produce the most energy of all arcing faults. The current level of low current arcing faults is limited by the load.

Plug-On Ground Fault Circuit Breakers, Type GFTCB and GFEP—10/22 kAIC, 120 Vac and 120/240 Vac

Ground Fault Application Notes

Single-pole GFTCBs are designed for use in two-wire, 120 Vac circuits. See **Page V1-T1-90** for a typical wiring configuration.

Two-pole GFTCBs are designed for use in three-wire, 120/240 Vac circuits, 120 Vac multiwire circuits employing common, neutral and two-wire, 240 Vac circuits obtained from a 120/240 Vac source.

Page V1-T1-90 shows typical wiring configurations for a 120/240 Vac multiwire circuits, and 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 GFTCB is not affected by the equipment ground.

Non-CTL Plug-On Replacement—Circuit Breakers, Type BRD—10 kAIC, 120/240 Vac

Non-CTL 10 kAIC for Replacement Purposes Only

For replacement in enclosures manufactured prior to 1968 with unnotched stabs. Circuit breakers do not have rejection tab.

Product Selection

Plug-On Circuit Breakers, Types BR—10/22/42 kAIC, 120 Vac, 120/240 Vac and 240 Vac

BR120



BR215



BR320



BRH2100



BRX2125



Type BR Breakers, 1-Inch (25.4 mm) per Pole 120/240, 10, 22 and 42 kAIC

| Ampere Rating | Wire Size Range Cu/Al 60 °C or 75 °C | Single-Pole 120/240 Vac Requires One 1-Inch (25.4 mm) Space 10 per Shelf Carton | | Two-Pole 120/240 Vac Common Trip Requires Two 1-Inch (25.4 mm) Spaces 5 per Shelf Carton | | 42 kAIC | | 65 kAIC | |
|---------------|---|---|------------------------------|---|------------------------------|-------------------|-------------------|-------------------|-------------------|
| | | 10 kAIC Catalog Number | 22 kAIC Catalog Number | 10 kAIC Catalog Number | 22 kAIC Catalog Number | Catalog Number | Catalog Number | Catalog Number | Catalog Number |
| 10 | #14–4 | BR110 | — | BR210 | — | — | — | — | — |
| 15 | #14–4 | BR115 ①② | BRH115 | BR215 ③ | BRH215 | — | — | — | — |
| 20 | #14–4 | BR120 ①② | BRH120 | BR220 ③ | BRH220 | — | — | — | — |
| 25 | #14–4 | BR125 | BRH125 | BR225 ③ | BRH225 | — | — | — | — |
| 30 | #14–4 | BR130 | BRH130 | BR230 ③ | BRH230 | — | — | — | — |
| 35 | #14–4 | BR135 | BRH135 | BR235 ③ | BRH235 | — | — | — | — |
| 40 | #14–4 | BR140 | BRH140 | BR240 ③ | BRH240 ③ | — | — | — | — |
| 45 | #14–4 | — | BRH145 | BR245 ③ | BRH245 | — | — | — | — |
| 50 | #14–4 | BR150 | BRH150 | BR250 ③ | BRH250 ③ | — | — | — | — |
| 55 | #14–3 | BR150 | BRH155 | BR255 | BRH255 | — | — | — | — |
| 60 | #8–1/0 | BR160 | BRH160 | BR260 | BRH260 | BRHH260 | BRX260 | — | — |
| 70 | #8–1/0 | BR170 | BRH170 | BR270 | BRH270 | BRHH270 | BRX270 | — | — |
| 80 | #8–1/0 | — | — | BR280 | BRH280 | BRHH280 | BRX280 | — | — |
| 90 | #8–1/0 | — | — | BR290 | BRH290 | BRHH290 | BRX290 | — | — |
| 100 | #8–1/0 | — | — | BR2100 | BRH2100 | BRHH2100 | BRX2100 | — | — |
| 110 | #8–1/0 | — | — | BR2110 | BRH2110 | BRHH2110 | BRX2110 | — | — |
| 125 | #4–2/0 | — | — | BR2125 | BRH2125 | BRHH2125 | BRX2125 | — | — |
| 150 | #4–2/0 | — | — | BR2150 ④ | — | — | — | — | — |



Notes

- ① One pole, 1-inch (25.4 mm) per pole circuit breakers are available with high magnetic setting for switching large tungsten lamp loads. Add suffix H to catalog number.
- ② Switching duty rated.
- ③ On the black handle breaker, add suffix “B” to the catalog number to obtain a tapped molded opening for proper use with hold-down kits.
- ④ For use as a branch circuit breaker in 400 and 600 ampere panels only.

All Type BR single-, two- and three-pole circuit breakers carry listing for HACR application. For circuit breakers with a shunt trip, add ST suffix.

BR Breakers



Type BR Breakers, 1-Inch (25.4 mm) per Pole 240 Vac, 10, 22 and 42 kAIC

Three-Pole 240 Vac
Common Trip Requires Three
1-Inch (25.4 mm) Spaces
5 per Shelf Carton



| Ampere Rating | Wire Size Range Cu/Al 60 °C or 75 °C | 10 kAIC Catalog Number | 22 kAIC Catalog Number |
|---------------|---|---------------------------|---------------------------|
| 10 | #14-4 | BR310 | — |
| 15 | #14-4 | BR315 ① | BRH315 |
| 20 | #14-4 | BR320 ① | BRH320 |
| 25 | #14-4 | BR325 | BRH325 |
| 30 | #14-4 | BR330 | BRH330 |
| 35 | #14-4 | BR335 | BRH335 |
| 40 | #14-4 | BR340 | BRH340 |
| 45 | #14-4 | BR345 | BRH345 |
| 50 | #14-4 | BR350 | BRH350 |
| 55 | #14-3 | BR355 | BRH355 |
| 60 | #4-1/0 | BR360 | BRH360 |
| 70 | #4-1/0 | BR370 | BRH370 |
| 80 | #4-1/0 | BR380 | BRH380 |
| 90 | #4-1/0 | BR390 | BRH390 |
| 100 | #4-1/0 | BR3100 | BRH3100 |

Plug-On, Dual Purpose Arc Fault / Ground Fault Circuit Breakers, Type BR—10 kAIC, 120 Vac

BRLAFGF115



Type BR, 1-Inch (25.4 mm) wide Dual Purpose AF/GF Circuit Breakers ②③

| Poles | Ampere Rating | Configuration | Catalog Number |
|------------------------|---------------|-------------------------|----------------|
| Single-pole 10 kAIC | 15 | Combination AFGI / GFCl | BRLAFGF115 ④ |
| | | | BRAFGF115 ⑤ |
| | 20 | Combination AFGI / GFCl | BRLAFGF120 ④ |
| | | | BRAFGF120 ⑤ |
| Single-pole 22 kAIC | 15 | Combination AFGI / GFCl | BRHAFGF115 ⑤ |
| | 20 | Combination AFGI / GFCl | BRHAFGF120 ⑤ |

Plug-On Combination Type Arc Fault Circuit Breakers, Type BR—10 kAIC, 120 Vac and 120/240 Vac

BRCAF115



Type BR, 1-Inch (25.4 mm) wide Combination Type AFCI Circuit Breakers

| Poles | Ampere Rating | Configuration | Catalog Number |
|------------------------|---------------|---------------|----------------|
| Single-pole 10 kAIC | 15 | AFCI | BRCAF115 ⑥ |
| | 20 | AFCI | BRCAF120 ⑥ |
| Single-pole 22 kAIC | 15 | AFCI | BRHCAF115 ⑥ |
| | 20 | AFCI | BRHCAF120 ⑥ |
| Two-pole 10 kAIC | 15 | AFCI | BRL215CAF |
| | 20 | AFCI | BRL220CAF |

Notes

- ① One pole, 1-inch (25.4 mm) per pole circuit breakers are available with high magnetic setting for switching large tungsten lamp loads. Add suffix H to catalog number.
- ② Breaker qualifies as combination arc fault, per UL 1699.
- ③ Breaker qualifies as personnel protection ground fault, (5 mA) per UL 943.
- ④ These catalog numbers will be obsoleted in Q3, 2018 and replaced with BRAFGF short body breakers.
- ⑤ Short body replacing BRLAFGF breakers.
- ⑥ Clamshell packaging available with CS modification code on the end of catalog number.

All Type BR single-, two- and three-pole circuit breakers carry listing for HACR application. For circuit breakers with a shunt trip, add ST suffix. See **Volume 4** for bolt-on AF/GF breakers; QB1015AFGF, QB1020AFGF, QBH1015AFGF and QBH1020AFGF.