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Standards and Certifications

UL® Listings

All Eaton Type CH loadcenters are listed under UL File E8741.

Neutral and Ground Terminals

The standard terminals on grounds and neutrals are rated to accept (3)—#14–#10 Cu/Al or (1)—#14–4 wires. For larger cables, add-on neutral lugs may be ordered from the Accessories.

Note: NEC® allows only one current carrying conductor per hole on neutrals unless otherwise noted.

Bottom-Fed Loadcenters

When the power cable is brought into the loadcenter from below the panel; then the main lug panels, and single-phase, 225 A and below, loadcenters can be rotated 180 degrees to allow straight-in wiring of power cables to the main terminals. Because the CSR main circuit breaker handle operates horizontally, the orientation of the main circuit breaker handle is consistent with the requirements of NEC Article 240.81.

Gutter Splicing

Loadcenters are not UL listed as wiring troughs. Therefore, gutter splicing of riser cables to tap off to the main device is not permitted. Refer to NEC Article 373.8.

Fire Rating

Due to the numerous openings in both loadcenter boxes and trims, they should not be mounted in firewalls. There is no approval method for sealing the enclosures for this application.

Date Code

The date of manufacture of each loadcenter is printed on the outside of the carton as well as inside the loadcenter. On the carton, the date code is printed on the end carton label. In the loadcenter, the date code is located on the small white label located on the right side wall (with the main device on top).

The date code is in the following format: F # # # &. The "F" is the numeric code for the Lincoln, IL plant, and the three numbers are the year and week of manufacture, e.g., 023. The "&" sign at the end signifies the decade of the 2000s. The "!" at the end signifies the decade of the 2010s. Therefore, the date code F023& would indicate that the product was manufactured in the 23rd week of 2000. The 1980s are represented by a "+" sign and the 1990s are represented by a "=" at the end of the code.

Plug-On Type CH Breakers

Quick-make, quick-break switch mechanism combined with inverse time element tripping operation and trip-free handle design. Type CH circuit breakers trip to the OFF position eliminating nuisance callbacks. The thermal-magnetic trip curve avoids nuisance tripping on mild overloads while reacting almost instantaneously to severe short-circuit conditions. CHF breakers include a 'trip flag' to differentiate between a tripped breaker and one that has been turned off. Multipole breakers have internal common trip connection to operate all poles simultaneously. Handles are marked with ON-OFF indication and ampere rating of the breaker. Type CH breakers meet UL Standard 489, NEMA standards, and Federal Spec Classification W-C 375 b/Gen. They are UL listed under File Number E11713, E8741, E3624 and E51287: and CSA® certified file number LR87196, except Type CHT breakers.

Type CH Circuit Breaker Ratings

Single- and double-pole CH breakers rated 15 and 20 A have low instantaneous magnetic trip levels. The 15 and 20 A breakers with "HM" suffix have high magnetic trip settings recommended for circuits with inherently high inrush currents. All Type CH breakers are marked for heating, air conditioning and refrigeration (HACR) equipment application. Single-pole 15–20 A breakers are also suitable for switching duty (SWD). Shunt trip coils operate on 120 Vac and require one additional pole space per breaker.

UL Listed

Plug-On Circuit Breakers

Contents

CH Circuit Breakers

Product Description

Quick-make, quick-break switch mechanism combined with inverse time element tripping operation and trip-free handle design. Type CH circuit breakers trip to the OFF position, eliminating nuisance callbacks. The CHF family also includes a trip flag to differentiate between a trip and the breaker being turned off. The thermal-magnetic trip curve avoids nuisance tripping on mild overloads while reacting almost instantaneously to severe short-circuit conditions. Multipole breakers have internal common trip connection to operate all poles simultaneously. Handles are marked with ON-OFF indication and ampere rating of the breaker.

Special Application Plug-On Circuit Breakers—Type CH 10 kAIC 120 Vac and 120/240 Vac

Branch Feeder Type Arc Fault Circuit Breakers

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 all subsequent editions of the National Electrical Code.

Combination Type Arc Fault Circuit Breakers

A combination type arc fault circuit interrupter is a device that offers 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.

Ground Fault Circuit Breakers—Ground Fault Application Notes

Single-pole Type CHGFIs are designed for use in two-wire, 120 Vac circuits. The diagram on **Page V1-T1-40** shows a typical wiring configuration.

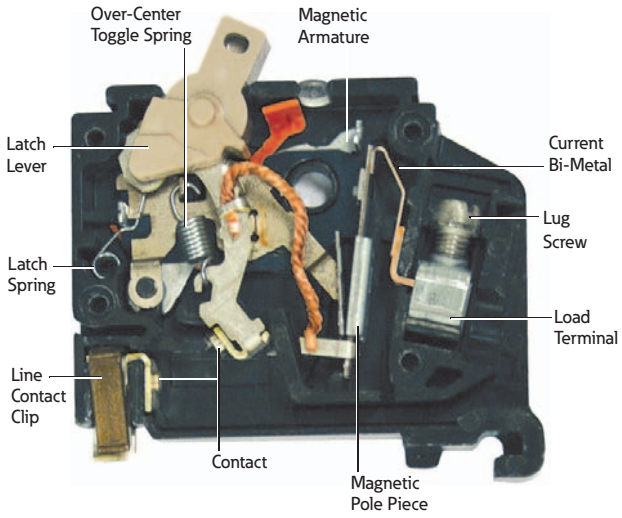
Two-pole Type CHGFIs are designed for use in three-wire, 120/240 Vac circuits, 120 Vac multiwire circuits employing common, neutral and two-wire, 240 Vac circuits obtained from a 120/240 Vac source.

Diagrams on **Page V1-T1-40** illustrate typical wiring configurations for 120/240 Vac multiwire circuits.

The diagram on **Page V1-T1-40** 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 Type CHGFI is not affected by the equipment ground.

Features



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Product Selection

10 kAIC, 120 Vac, 120/240 Vac and 240 Vac

Type CH Plug-On Circuit Breakers

Type CH Breakers, 3/4-Inch (19.1 mm) per Pole 120, 120/240 or 240 Vac, 10 kAIC

Ampere Rating	Wire Size Range Cu/Al 60 °C or 75 °C	Catalog Number Single-Pole 120/240 Vac Requires One 3/4-Inch (19.1 mm) Space 10 per Shelf Carton	Two-Pole 120/240 Vac Common Trip Requires Two 3/4-Inch (19.1 mm) Spaces 5 per Shelf Carton	Three-Pole 240 Vac Common Trip Requires Three 3/4-Inch (19.1 mm) Spaces 5 per Shelf Carton
10	(1) #14–8 ① (2) #14–10 ①② (1) #14–6 ③	**CH110**	**CH210**	**CH310**
15		**CH115** ⑦⑧	**CH215** ⑧	**CH315** ⑧
20		**CH120** ⑦⑧	**CH220** ⑧	**CH320** ⑧
25		**CH125** ⑧	**CH225** ⑧	**CH325** ⑧
30		**CH130** ⑧	**CH230** ⑧	**CH330** ⑧
35	#14–2 ① #14–6 ③	**CH135** ⑧	**CH235** ⑧	**CH335** ⑧
40	#10–1/0 ④ #14–2 ⑤ #3/0 ⑥	**CH140** ⑧	**CH240** ⑧	**CH340** ⑧
45		**CH145** ⑧	**CH245** ⑧	**CH345** ⑧
50		**CH150** ⑧	**CH250** ⑧	**CH350** ⑧
60		**CH160**	**CH260**	**CH360**
70		**CH170**	**CH270**	**CH370**
80		—	**CH280**	**CH3080**
90		—	**CH290**	**CH3090**
100		—	**CH2100**	**CH3100**
110		—	**CH2110**	—
125		—	**CH2125**	—

Type CH Plug-On Circuit Breakers

CHF Breakers with Mechanical Trip Flag

Ampere Rating	Wire Size Range Cu/Al 60 °C or 75 °C	Catalog Number Single-Pole 120/240 Vac Requires One 3/4-Inch (19.1 mm) Space 10 per Shelf Carton	Two-Pole 120/240 Vac Common Trip Requires Two 3/4-Inch (19.1 mm) Spaces 5 per Shelf Carton
10	(1) #14–8 ① (2) #14–10 ①②	**CHF110**	**CHF210**
15		**CHF115** ⑦⑧	**CHF215** ⑧
20		**CHF120** ⑦⑧	**CHF220** ⑧
25		**CHF125** ⑧	**CHF225** ⑧
30		**CHF130** ⑧	**CHF230** ⑧
35	#14–2 ①	**CHF135** ⑧	**CHF235** ⑧
40	#10–1/0 ④ #14–2 ⑤	**CHF140** ⑧	**CHF240** ⑧
45		**CHF145** ⑧	**CHF245** ⑧
50		**CHF150** ⑧	**CHF250** ⑧

Notes

① For single- and two-pole breakers.
② Solid and stranded wire can be used together.
③ For three-pole breakers.
④ Single-pole 60–70 A, two-pole 80–125 A, three-pole 40–100 A.
⑤ Single-pole 40–50 A, two-pole 40–70 A.
⑥ Two-pole 150 A.
⑦ Switching duty rated.
⑧ HACR rated.

For factory-installed options, refer to **Page V1-T1-39.**