

Product Line Overview

General Information

Cutler-Hammer® Series G Molded Case Circuit Breakers provide increased performance in considerably less space than standard circuit breakers or comparable fusible devices.

The "G" signifies global applications: Series G circuit breakers are marked with UL, CSA, CE, IEC and KEMA KEUR listings. Other advantages include:

- Field-fit accessories.
- Common accessories through 630 amperes.
- Electronic trip units from 20 to 2500 amperes.
- UL-listed and IEC-rated, 30 mA ground fault/earth leakage modules.
- Built-in ground fault protection down to 20 amperes.

The EG, JG and LG frames are designed around space-saving footprints. The NG and RG use the proven Cutler-Hammer Series C® ND and RD designs but use metric threading on their line and load conductors.

Cutler-Hammer Series G Circuit Breakers meet applicable UL 489 and IEC 60947-2 standards.

The Cutler-Hammer Series G family includes five frame sizes in ratings from 15 to 2500 amperes. Series G offers a choice of several interrupting capacities up to 200 kA at 480 volts ac (200 kA at 240 volts ac).

Standard calibration is 40°C. For applications in high ambient temperature conditions, 50°C factory calibration is available on thermal magnetic breakers (not UL).

The Most Logically Designed Contact Assembly

The flexibility and outstanding performance characteristics of Cutler-Hammer Circuit Breakers are made possible by the best contact designs in circuit breaker history. Our patented technology creates a high-speed "blow-open" action using the electromechanical forces produced by high-level fault currents.

Cutler-Hammer Circuit Breakers are operated by a toggle-type mechanism that is mechanically trip-free from the handle so that the contacts cannot be held closed against short circuit currents. Tripping due to overload or short circuits is clearly indicated by the position on the handle. This remarkably fast and dependable contact action is designed to enhance safety.

Thorough In-Plant Testing

The quality, dependability and reliability of every Cutler-Hammer Circuit Breaker is ensured by a thorough program of in-plant testing. Two calibration tests are conducted on every pole of every circuit breaker to verify the trip mechanism, operating mechanism, continuity and accuracy.

ISO Certification

Cutler-Hammer Circuit Breakers are manufactured in ISO® certified facilities.

Current Limiting Characteristics

Circuit breakers are current limiting because of their high repulsion contact arrangement and use of state-of-the-art arc extinguishing technology.

Eaton offers one of the most complete lines of current limiting breakers in the industry. The industrial breakers are available in current limiting versions with interrupting capacities up to 200 kA at 480 V without fuses in the same physical size as standard and high interrupting capacity breakers.

Operating Mechanisms

Cutler-Hammer Circuit Breakers have a toggle handle operating mechanism, which also serves as a switching position indicator. The indicator shows the positions of: ON, OFF and TRIPPED.

The toggle handle snaps into the TRIPPED position if the breaker is tripped by one of its overcurrent, short circuit, shunt or undervoltage releases. Before the circuit breaker can be reclosed following a trip-out, the toggle handle must be brought beyond the OFF position (RESET). The circuit breaker can then be reclosed.

As an additional switching position indicator for EG- to RG-Frame circuit breakers, there are two windows on the right and on the left of the toggle handle, in which the switching state is indicated by means of the colors red, green and white corresponding to the ON, OFF and TRIPPED positions respectively.

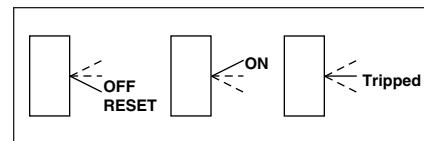


Figure 45-2. Positions of the Toggle Handle Drive

Product Line Overview
Standards and Certifications

Cutler-Hammer Molded Case Circuit Breakers from Eaton are designed to conform with the following international standards:

- Australian Standard AS 2184 and AS 3947-2 Molded Case Circuit Breakers.
- British Standards Institution Standard EN60947.2.
- International Electrotechnical Commission Recommendations IEC 60947.2 Circuit Breakers.
- Japanese T-Mark Standard Molded Case Circuit Breakers.
- National Electrical Manufacturers Association Standards Publication No. AB1-1993 Molded Case Circuit Breakers.
- South African Bureau of Standards, Standard SANS 156, Standard Specification for Molded Case Circuit Breakers.
- Swiss Electro-Technical Association Standard SEV 947.2, Safety Regulations for Circuit Breakers.
- Union Technique de l'Electricite Standard NF C 63-120, Low Voltage Switchgear and Control Gear Circuit Breaker Requirements.
- Verband Deutscher Elektrotechnike (Association of German Electrical Engineers) Standard VDE 0660, Low Voltage Switchgear and Control Gear, Circuit Breakers.

45

Global Third-Party Certification

Certification marks ensure product compliance with the total standard via the third party witnessing of tests by globally recognized independent certification organizations.

KEMA is a highly recognized, independent international organization that offers certification and inspection facilities for equipment in many industries. The KEMA-KEUR mark is the highest certification an electrical product can receive from KEMA. Our IEC 60947-2 Molded Case Circuit Breakers are KEMA tested and certified. These breakers are also listed in accordance with UL® 489, as well as CSA C22.2 No. 5-02.

KEMA, UL and CSA provide ongoing follow-up testing and inspections to ensure that Cutler-Hammer Molded Case Circuit Breakers continue to meet their exacting standards.

General Information

Eaton's electrical business, under the Cutler-Hammer brand, offers the widest variety of molded case circuit breakers available today. Designed for electrical and machinery OEMs serving a range of industries and applications, these proven designs incorporate the latest in innovation with the high reliability that has been our hallmark since the advent of the circuit breaker in the 1920s.

The Series C family ranges from 15 – 2500 amperes, and includes thermal-magnetic breakers, electronic trip breakers, molded case switches, motor circuit protectors, and specially designed breakers for Engine Generator, DC and mining applications.

The new Series G line features an average 35% size reduction, common field-installable internal accessories, and advanced trip unit functionality that eliminates the need for rating plugs. These breakers meet the requirements of UL, CSA, IEC, CCC and CE, allowing the OEM to standardize on a design that meets the needs of their global customer base.

Frame Sizes EG through LG

Electrical Characteristics

Table 45-2. Electrical Characteristics

| Maximum Rated Current (Amperes) | EG | | | | | | | | JG | | | | | | | | LG | | | | | | | | | |
|--|---|-----------------|---------|---------------|--------------|-------------|--------------|--------------|--|---|-------------|------------------------------------|------|------|------------------------------------|------|---|---|------|------|--------------------------------------|------|------|-----|--|--|
| |  | | | | | | | |  | | | | | | | |  | | | | | | | | | |
| | 125, 160 ① | | | | | | | | 250 | | | | | | | | 400, 630 ② | | | | | | | | | |
| Breaker Type | B | E | S | H | C | E | S | H | C | U | X | E | S | H | C | U | X | E | S | H | C | U | X | | | |
| Number of Poles | 1 | 2, 3, 4 | 2, 3, 4 | 1 | 2, 3, 4 | 1 | 2, 3, 4 | 3, 4 | 2, 3, 4 | 3, 4 | 3, 4 | 3, 4 | 3, 4 | 3, 4 | 3, 4 | 3, 4 | 3, 4 | 3, 4 | 3, 4 | 3, 4 | 3, 4 | 3, 4 | 3, 4 | | | |
| Breaker Capacity (kA rms) ac 50 – 60 Hz | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NEMA®, UL, CSA | 240 Vac | 25 | 25 | 35 | 85 | 85 | 100 | 100 | 200 | 65 | 85 | 100 | 200 | 200 | 200 | 65 | 85 | 100 | 200 | 200 | 200 | 200 | 200 | 200 | | |
| | 480 Vac | — | 18 | 25 | — | 35 | — | 65 | 100 | 25 | 35 | 65 | 100 | 150 | 200 | 35 | 50 | 65 | 100 | 150 | 200 | 200 | 200 | 200 | | |
| | 600 Vac ③ | — | — | 18 | — | 22 | — | 25 | 35 | 18 | 18 | 25 | 35 | 50 | 50 | 18 | 25 | 35 | 50 | 65 | 65 | 65 | 65 | 65 | | |
| | 125/250 Vdc ④ | 10 ⑥ | 10 | 10 | 35 ⑥ | 35 | 42 ⑥ | 42 | 42 | 10 | 22 | 22 | 42 | 50 | 50 | 22 | 22 | 42 | 42 | 50 | 50 | 50 | 50 | 50 | | |
| IEC 60947-2 | 220 – 240 Vac | I _{cu} | 25 | 25 | 35 | 85 | 85 | 100 | 100 | 200 | 65 | 85 | 100 | 200 | 200 | 200 | 65 | 85 | 100 | 200 | 200 | 200 | 200 | 200 | | |
| | | I _{cs} | 25 | 25 | 35 | 43 | 43 | 50 | 50 | 200 | 65 | 85 | 100 | 200 | 200 | 200 | 65 | 85 | 100 | 200 | 200 | 200 | 200 | 200 | | |
| | 380 – 415 Vac | I _{cu} | — | 18 | 25 | — | 40 | — | 70 | 100 | 25 | 40 | 70 | 100 | 150 | 200 | 35 | 50 | 70 | 100 | 150 | 200 | 200 | 200 | | |
| | | I _{cs} | — | 18 | 25 | — | 30 | — | 35 | 100 | 25 | 40 | 70 | 100 | 150 | 200 | 35 | 50 | 70 | 100 | 150 | 200 | 200 | 200 | | |
| | 660 – 690 Vac | I _{cu} | — | — | — | — | — | — | — | 12 | 12 | 14 | 16 | 18 | 18 | 12 | 20 | 25 | 30 | 35 | 35 | 35 | 35 | 35 | | |
| | | I _{cs} | — | — | — | — | — | — | — | 6 | 6 | 7 | 12 | 14 | 14 | 6 | 10 | 13 | 15 | 18 | 18 | 18 | 18 | 18 | | |
| | 125/ 250 Vdc ④ | I _{cu} | 10 ⑥ | 10 | 10 | 35 ⑥ | 35 | 42 ⑥ | 42 | 42 | 10 | 22 | 22 | 42 | 50 | 50 | 22 | 22 | 42 | 42 | 50 | 50 | 50 | 50 | | |
| | | I _{cs} | 10 ⑥ | 10 | 10 | 35 ⑥ | 35 | 42 ⑥ | 42 | 42 | 10 | 22 | 22 | 42 | 50 | 50 | 22 | 22 | 42 | 42 | 50 | 50 | 50 | 50 | | |
| Ampere Range | | 15 – 160 A ① | | | | | | | | 20 – 250 A | | | | | | | | 100 – 630 A ② | | | | | | | | |
| Trip Units | | FT-FM AT-FM | | | | | | | | FT-AM AT-AM Electronic (Digitrip RMS 310) | | | | | | | | FT-AM AT-AM Electronic (Digitrip RMS 310) | | | | | | | | |
| F = Fixed A = Adjustable T = Thermal M = Magnetic | | Interchangeable | | | | | | | | — | | | | | | | | — | | | | | | | | |
| Interchangeable | | — | | | | | | | | — | | | | | | | | — | | | | | | | | |
| Built-in | | ■ | | | | | | | | ■ | | | | | | | | ■ | | | | | | | | |
| Thermal Magnetic | Fixed Thermal | | | | | | | | ■ | | | | | | | | ■ | | | | | | | | | |
| | Adjustable Thermal | | | | | | | | ■ | | | | | | | | ■ | | | | | | | | | |
| | Magnetic | | | | | | | | Fixed | | | | | | | | Adjustable | | | | | | | | | |
| Electronic rms ⑤ | LS | | | | | | | | — | | | | | | | | ■ | | | | | | | | | |
| | LSI | | | | | | | | — | | | | | | | | ■ | | | | | | | | | |
| | LSG | | | | | | | | — | | | | | | | | ■ | | | | | | | | | |
| | LSIG | | | | | | | | — | | | | | | | | ■ | | | | | | | | | |
| Dimensions Inches (mm) | H | W | | | D | | | H | | | W | | | D | | | H | | | W | | | D | | | |
| | | 1.00 (25.4) | | | 2.99 (76.0) | | | — | | | — | | | — | | | — | | | — | | | — | | | |
| | | 2.00 (50.8) | | | 7.00 (177.8) | | | 4.13 (105.0) | | | 3.57 (87.4) | | | — | | | — | | | — | | | — | | | |
| | | 3.00 (76.2) | | | 5.34 (135.6) | | | — | | | — | | | — | | | — | | | — | | | — | | | |
| | 4.00 (101.6) | | | 10.13 (258.0) | | | 5.48 (140.0) | | | 4.09 (104.0) | | | — | | | — | | | — | | | — | | | | |
| Weight (approximate) lbs. (kg) | | | 1-Pole | | | 2.85 (1.29) | | | 11.3 (5.13) | | | 5.06 (2.30) T/M 5.31 (2.41) ETU | | | 6.76 (3.07) T/M 7.12 (3.23) ETU | | | 12.36 (5.61) T/M 13.04 (5.92) ETU | | | 16.27 (7.39) T/M 16.92 (7.68) ETU | | | — | | |
| Utilization Category | | | A | | | A | | | A | | | A | | | A | | | A | | | A | | | A | | |

① 125 amperes is the maximum UL and CSA rating for the EG.

② 630 amperes is not a UL or CSA listed rating. 600 amperes is the maximum UL and CSA listed rating for the LG.

③ EG breaker rated 600/347 Vac.

④ Two poles in series.

⑤ Not suitable for dc application. 4-pole ground fault not available.

⑥ 125 Vdc only for 1-pole breakers.

Frame Sizes EG through RG

Table 45-3. EG through RG Electrical Characteristics

| Technical Data | EG | JG | LG | NG | RG |
|--|---|-------------------------------------|-------------------------------------|----------------------------------|--------------------------------|
| Maximum Rated Current I_{RN} Depending on the Version | 160 A ^① | 250 A | 400, 630 A ^② | 800, 1200, 1600 A ^③ | 1600, 2000, 2500 A |
| Rated Insulation Voltage U, According to IEC 60947-2 Main Conducting Paths Auxiliary Circuits | 500 Vac 500 Vac | 750 Vac 690 Vac | 750 Vac 690 Vac | 750 Vac 690 Vac | 750 Vac 690 Vac |
| Rated Impulse Withstand Voltage U_{imp} Main Conducting Paths Auxiliary Circuits | 6 kV 4 kV | 8 kV 4 kV | 8 kV 4 kV | 8 kV 4 kV | 8 kV 4 kV |
| Rated Operational Voltage U_e IEC NEMA | 690 Vac 600 Y/347 Vac | 690 Vac 600 Vac | 690 Vac 600 Vac | 690 Vac 600 Vac | 690 Vac 600 Vac |
| UL and CSA Listed | Yes ^④ | Yes ^④ | Yes ^④ | Yes ^④ | Yes ^④ |
| Permissible Ambient Temperature | -20 to +70°C | -20 to +70°C | -20 to +70°C | -5 to +60°C | -5 to +60°C |
| Permissible Load for Various Ambient Temperatures Close to the Circuit Breaker, Related to the Rated Current of the Circuit Breaker | (5) (6) | (5) (6) | (5) (6) | — | — |
| ■ Circuit Breakers for Plant Protection – At 40°C – At 50°C – At 55°C – At 60°C – At 70°C | 100% 96% 93% 91% 86% | 100% 92% 87% 83% 73% | 100% 94% 90% 87% 80% | 100% 91% 86% 82% 70% | 100% 91% 85% 81% — |
| ■ Circuit Breakers for Motor Protection – At 40°C – At 50°C – At 55°C – At 60°C – At 70°C | — — — — — | 100% 100% 100% 100% 90% | 100% 100% 100% 100% 90% | — — — — — | — — — — — |
| ■ Circuit Breakers for Starter Combinations and Isolating Circuit Breakers – At 40°C – At 50°C – At 55°C – At 60°C – At 70°C | 100% 100% 96% 91% 86% | 100% 100% 96% 82% 88% | 100% 100% 95% 90% 84% | 100% 91% 85% 81% — | 100% 91% 85% 81% — |
| Rated Short Circuit Breaking Capacity (dc) Not for Circuit Breakers for Motor Protection (Time Constant $\tau = 10$ rms) 2 Conducting Paths in Series For EG to LG up to 250 Vdc NEMA (Time Constant $\tau = 8$ rms) 2 Conducting Paths in Series 250 Vdc | 42 kA Max. | 42 kA Max. | 42 kA Max. | (7) (7) (7) | (7) (7) (7) |
| Main Switch Characteristics According to IEC 60947-2 in Combination with Lockable Rotary Drives | Yes | Yes | Yes | Yes | Yes |
| Rated Short Circuit Breaking Capacity According to IEC 60947-2 (at ac 50/60 Hz) | Rated Short Circuit Breaking Capacity See Table 45-2 on Page 45-5 | | | | |
| Endurance (Operating Cycles) | 10,000 | 10,000 | 8,000 | 3,000 | 3,000 |
| Maximum Switching Frequency | 300 1/h | 240 1/h | 240 1/h | 60 1/h | 20 1/h |

^① 125 amperes is the maximum UL and CSA rating for the EG.^② 630 amperes is not a UL or CSA listed rating. 600 amperes is the maximum UL and CSA rating for the LG.^③ 1200 amperes is the maximum UL and CSA rating for the NG.^④ See footnotes for exceptions.^⑤ Thermal overload release set to the lower value.^⑥ Thermal overload release set to the upper value.^⑦ Not suitable for dc switching.

Frame Sizes EG through RG
Table 45-3. EG through RG Electrical Characteristics (Continued)

| Technical Data | EG | JG | LG | NG | RG |
|--|------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|
| Conductor Cross Sections and Terminal Types for Main Conductors | | | | | |
| ■ Solid or Stranded | 2.5 to 95 mm ² | 50 to 150 mm ² | 95 to 240 mm ² | — | — |
| ■ Finely Stranded with End Sleeve | 2.5 to 50/70 mm ² | 35 to 120 mm ² | 70 to 150 mm ² | — | — |
| ■ Bus Bar | — | — | — | 600 A | Optional |
| Tightening Torque for Box Terminals | 5.6 Nm | 20 Nm | 42 Nm | 31 Nm | — |
| Tightening Torque for Bus Bar Connection Pieces | 5.6 Nm | 15 Nm | 30 Nm | 6 Nm | 20 Nm |
| Conductor Cross Sections for Auxiliary Circuits with Terminal Connection or Terminal Strip | | | | | |
| ■ Solid | 0.75 to 2.5 mm ² | 0.75 to 2.5 mm ² | 0.75 to 2.5 mm ² | Up to 2x4 mm ² | Up to 2x4 mm ² |
| ■ Finely Stranded with End Sleeve | 0.75 to 2.5 mm ² | 0.75 to 2.5 mm ² | 0.75 to 2.5 mm ² | Up to 2x2.5 mm ² | Up to 2x2.5 mm ² |
| ■ With Brought-out Cable Ends | — | 0.82 (AWG 18) mm ² |
| ■ Tightening Torque for Fitting Screws | — | 0.8 to 1.4 Nm |
| Power Loss per Circuit Breaker at Maximum Rated Current I _N (The Power Losses of the Undervoltage Releases ("r" Releases) Must Be Observed if Necessary) at Three-Phase Symmetrical Load) | | | | | |
| ■ For Plant Protection | 40 W | 45 W | 400 A: 65 W | 600 A: 120 W | 87/210 W |
| ■ As Isolating Circuit Breaker | 40 W | 45 W | 65 W | 120 W | 87/210 W |
| ■ For Starter Combinations | 40 W | 45 W | 65 W | 120 W | — |
| ■ For Motor Protection | — | 45 W | 65 W | 120 W | — |
| Permissible Mounting Position | | | | | |
| Arc Spacing — Suitable for Reverse-Feed Applications | Yes (Except HMCPE) | Yes | Yes | Yes | Yes |

Frame Sizes EG through RG

Table 45-3. EG through RG Electrical Characteristics (Continued)

| Technical Data | EG | JG | LG | NG | RG |
|--|-----------------------------|-----------------------------|-----------------------------|-------------------------|-------------------------|
| Auxiliary Switches | | | | | |
| Rated Thermal Current I_{th} Rated Making Capacity | 6 A 20 A | 6 A 20 A | 6 A 20 A | 6 A 20 A | 6 A 20 A |
| ac (ac-15) ■ Rated Operational Voltage ■ Rated Operational Current | 230/400/600 V 6/3/0.25 A | 230/400/600 V 6/3/0.25 A | 230/400/600 V 6/3/0.25 A | 600 V 6 A | 600 V 6 A |
| dc (dc-13) ■ Rated Operational Voltage ■ Rated Operational Current | 125/250 V 0.5/0.25 A | 125/250 V 0.5/0.15 A | 125/250 V 0.5/0.15 A | 125/250 V 0.5/0.25 A | 125/250 V 0.5/0.25 A |
| Backup Fuse Miniature Circuit Breaker | 6/4/4 A 6/4 A | 4 6/4/4 A 6/4 A | 4 6/4/4 A 6/4 A | 4 6/4/4 A 6/4 A | 4 6/4/4 A 6/4 A |

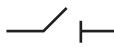
Releases

| | | | | | |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Undervoltage Releases ("r" Releases) Response Voltage: ■ Drop (Breaker Tripped) U_s ■ Pickup (Breaker May Be Switched on) U_s | 35 – 70% 85 – 110% |
| Power Consumption in Continuous Operation at: | | | | | |
| ■ 50/60 Hz 12 Vac | 0.95 VA | 1.9 VA | 1.9 VA | 1.9 VA | 2.9 VA |
| ■ 50/60 Hz 24 Vac | 0.72 VA | 3.9 VA | 3.9 VA | 2.4 VA | 3.1 VA |
| ■ 50/60 Hz 48 – 60 Vac | 1.15 – 1.78 VA | 2.5 – 3.8 VA | 2.5 – 3.8 VA | 2.3 – 4.1 VA | 3.4 – 6.0 VA |
| ■ 50/60 Hz 110 – 127 Vac | 0.96 – 1.25 VA | 1.8 – 2.4 VA | 1.8 – 2.4 VA | 3.4 – 4.2 VA | 3.3 – 3.8 VA |
| ■ 50/60 Hz 208 – 240 Vac | 1.28 – 1.68 VA | 2.7 – 3.8 VA | 2.7 – 3.8 VA | 4.8 – 6.5 VA | 4.2 – 7.2 VA |
| ■ 50/60 Hz 380 – 500 Vac | 2.2 – 3.9 VA | 3.4 – 5.8 VA | 3.4 – 5.8 VA | 6.8 – 12.0 VA | 3.8 – 10.0 VA |
| ■ 50/60 Hz 525 – 600 Vac | 3.4 – 4.3 VA | 3.4 – 4.3 VA | 3.4 – 4.3 VA | — | — |
| ■ 12 Vdc | 0.88 W | 1.6 W | 1.6 W | 2.6 W | 3.4 W |
| ■ 24 Vdc | 0.70 W | 3.1 W | 3.1 W | 3.6 W | 4.3 W |
| ■ 48 – 60 Vdc | 1.12 – 1.76 W | 2.0 – 3.1 W | 2.0 – 3.1 W | 3.5 – 5.5 W | 4.8 – 7.2 W |
| ■ 110 – 125 Vdc | 0.94 – 1.21 W | 1.6 – 2.2 W | 1.6 – 2.2 W | 2.9 – 3.6 W | 3.3 – 3.8 W |
| ■ 220 – 250 Vdc | 1.45 – 1.86 W | 3.1 – 4 W | 3.1 – 4 W | 4.8 – 6.3 W | 6.6 – 7.5 W |
| Maximum Opening Time | 50 ms | 50 ms | 50 ms | 62 ms | 62 ms |

Shunt Trips

| | | | | | |
|---|--------------------------|---------------|---------------|-------------|----------------|
| Shunt Trips ("f" Releases) Response Voltage: ■ Pickup (Breaker Tripped) U_s | 70 – 110% | 70 – 110% | 70 – 110% | 70 – 110% | 70 – 110% |
| Power Consumption in (Short Time) at: | | | | | |
| ■ 50/60 Hz 24 Vac | 10 – 41 VA | 87 – 405 VA | 87 – 405 VA | 98 – 475 VA | 612 VA |
| ■ 50/60 Hz 48 – 60 Vac | 139 – 210 VA | 710 – 1105 VA | 710 – 1105 VA | 24 – 50 VA | 403 – 666 VA |
| ■ 50/60 Hz 48 – 127 Vac | — | — | — | — | — |
| ■ 50/60 Hz 110 – 240 Vac | 83 – 360 VA | 66 – 432 VA | 66 – 432 VA | 67 – 432 VA | 396 – 1896 VA |
| ■ 50/60 Hz 380 – 440 Vac | — | 127 – 188 VA | 127 – 188 VA | 76 – 110 VA | 1596 – 2156 VA |
| ■ 50/60 Hz 380 – 600 Vac | 418 – 1080 VA | — | — | — | — |
| ■ 50/60 Hz 480 – 600 Vac | — | 34 – 60 VA | 34 – 60 VA | 19 – 42 VA | 230 – 384 VA |
| ■ 12 – 24 Vdc | 29 – 120 W | 164 – 631 W | 164 – 631 W | 145 – 610 W | 396 W |
| ■ 48 – 60 Vdc | 475 – 720 W | 830 – 1580 W | 830 – 1580 W | 67 – 102 W | 341 – 528 W |
| ■ 110 – 125 Vdc | 99 – 121 W | 112 – 150 W | 112 – 150 W | 121 – 150 W | 264 – 350 W |
| ■ 220 – 250 Vdc | — | 40 – 58 W | 40 – 58 W | 46 – 55 W | 374 – 475 W |
| Maximum Load Duration | Interrupts Automatically | | | | |
| Maximum Opening Time | 50 ms | 50 ms | 50 ms | 62 ms | 62 ms |

Molded Case Switch (with High Magnetic Trip)

| | | | | | |
|--|--|-----------------|----------------------|-------------------|-------------------|
| Unfused kAIC at 480 Vac (415 Vac) Self-Protected, Will Trip Above:  | 65 (70) 1250 for EG125; 1600 for EG160 | 65 (70) 2500 | 65 (70) 4000/6300 | 65 (70) 12,500 | 65 (70) 20,000 |
|--|--|-----------------|----------------------|-------------------|-------------------|

EG-Frame*Eaton's Cutler-Hammer EG***Product Description**

- EG breaker is HACR rated.

45

Technical Data and Specifications**Table 45-6. UL 489/IEC 60947-2 Interrupting Capacity Ratings**

| Circuit Breaker Type | Number of Poles | Interrupting Capacity (Symmetrical Amperes) (kA) | | | | | | | | | | | | |
|----------------------|-----------------|--|------------|-----------------|-----------------|-----------------|-----------------|----------|------------------|-----------------------|-------------------|-----------------|-----------------|---------|
| | | Volts ac (50/60 Hz) | | | | | | | | Volts dc ^① | | | | |
| | | 120 | 220 – 240 | 277 | 347 | 380 – 415 | 480 | 600Y/347 | 690 ^② | 125 | 250 ^{③④} | I _{cu} | I _{cs} | |
| | | | | I _{cu} | I _{cs} | I _{cu} | I _{cs} | | | I _{cu} | I _{cs} | I _{cu} | I _{cs} | |
| EGB125 | 1 2, 3, 4 | 35 — | 25 25 | 25 25 | 18 — | — 18 | — 18 | — 18 | — — | — — | 10 — | 10 — | — 10 | — 10 |
| EGE125 | 2, 3, 4 | — | 35 | 35 | — | — | 25 | 25 | 25 | 18 | — | — | — | 10 |
| EGS125 | 1 2, 3, 4 | 100 — | 85 85 | 43 43 | 35 — | 22 40 | — 30 | — 35 | — 22 | — — | 35 — | 35 35 | — 35 | 35 |
| EGH125 | 1 2, 3, 4 | 200 — | 100 100 | 50 50 | 65 — | 30 70 | — 35 | — 65 | — 25 | — — | 42 — | 42 42 | — 42 | 42 |
| EGC125 | 3, 4 | — | 200 | 200 | — | — | 100 | 100 | 100 | 35 | — | — | — | 42 |

^① dc ratings apply to substantially non-inductive circuits.^② IEC only.^③ 2-pole circuit breaker, or two poles of 3-pole circuit breaker.^④ Time constant is 3 milliseconds minimum at 10 kA and 8 milliseconds minimum at 42 kA.**Dimensions/Weights****Table 45-7. Dimensions in Inches (mm)**

| Number of Poles | Width | Height | Depth |
|-----------------|--------------|--------------|-------------|
| 1 | 1.00 (25.4) | 5.50 (139.7) | 2.99 (75.9) |
| 2 | 2.00 (50.8) | 5.50 (139.7) | 2.99 (75.9) |
| 3 | 3.00 (76.2) | 5.50 (139.7) | 2.99 (75.9) |
| 4 | 4.00 (101.6) | 5.50 (139.7) | 2.99 (75.9) |

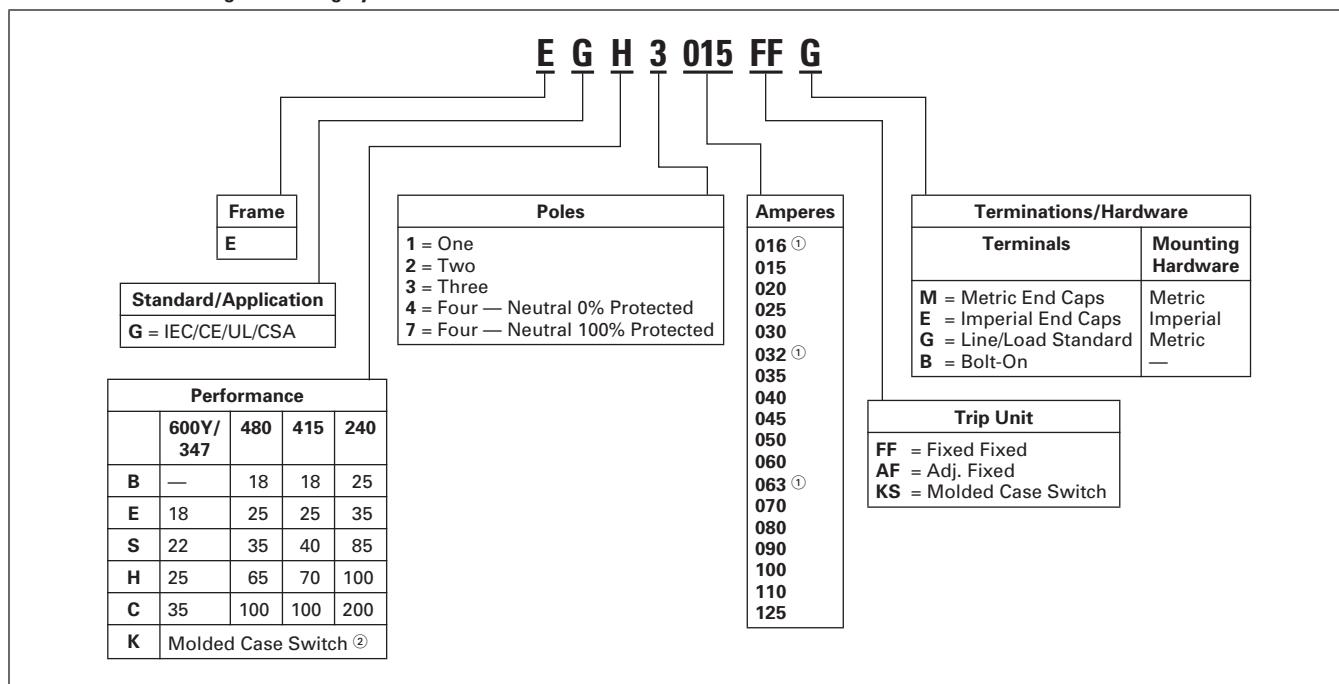
Table 45-8. Approximate Shipping Weight in Lbs. (kg)

| Breaker Type | Number of Poles | | | |
|--|-----------------|------------|---------------|---------------|
| | 1 | 2 | 3 | 4 |
| EGB125, EGE125, EGS125, EGH125, EGC125 | 1.5 .68 | 2.0 .91 | 3.0 (1.36) | 4.9 (1.82) |

EG-Frame

Product Selection

Table 45-9. Main Catalog Numbering System

^① Cannot be UL rated.^② Available only as 125 and 160 A sizes.

EG-Frame

Product Selection

Table 45-10. Complete Breaker (Includes Frame, Trip Unit, Standard Terminals and Mounting Hardware) — IC Rating at 415/480 Volts

| Max. Cont. Amps at 40°C ^① | 1-Pole | | 2-Pole | | 3-Pole | | 4-Pole 0% Protected Neutral ^③ | |
|--|------------------|-------------------|------------------|-------------------|------------------|-------------------|--|-------------------|
| | Fixed Thermal | Fixed Magnetic | Fixed Thermal | Fixed Magnetic | Fixed Thermal | Fixed Magnetic | Fixed Thermal | Fixed Magnetic |
| 18/18 | | | | | | | | |
| 15 | EGB1015FFG | | EGB2015FFG | | EGB3015FFG | | EGB4015FFG | |
| 16 | EGB1016FFG | | EGB2016FFG | | EGB3016FFG | | EGB4016FFG | |
| 20 | EGB1020FFG | | EGB2020FFG | | EGB3020FFG | | EGB4020FFG | |
| 25 | EGB1025FFG | | EGB2025FFG | | EGB3025FFG | | EGB4025FFG | |
| 30 | EGB1030FFG | | EGB2030FFG | | EGB3030FFG | | EGB4030FFG | |
| 32 | EGB1032FFG | | EGB2032FFG | | EGB3032FFG | | EGB4032FFG | |
| 35 | EGB1035FFG | | EGB2035FFG | | EGB3035FFG | | EGB4035FFG | |
| 40 | EGB1040FFG | | EGB2040FFG | | EGB3040FFG | | EGB4040FFG | |
| 45 | EGB1045FFG | | EGB2045FFG | | EGB3045FFG | | EGB4045FFG | |
| 25/25 | | | | | | | | |
| 15 | — | | EGE2015FFG | | EGE3015FFG | | EGE4015FFG | |
| 16 | — | | EGE2016FFG | | EGE3016FFG | | EGE4016FFG | |
| 20 | — | | EGE2020FFG | | EGE3020FFG | | EGE4020FFG | |
| 25 | — | | EGE2025FFG | | EGE3025FFG | | EGE4025FFG | |
| 30 | — | | EGE2030FFG | | EGE3030FFG | | EGE4030FFG | |
| 32 | — | | EGE2032FFG | | EGE3032FFG | | EGE4032FFG | |
| 35 | — | | EGE2035FFG | | EGE3035FFG | | EGE4035FFG | |
| 40 | — | | EGE2040FFG | | EGE3040FFG | | EGE4040FFG | |
| 45 | — | | EGE2045FFG | | EGE3045FFG | | EGE4045FFG | |
| 40/35 | | | | | | | | |
| 15 | EGS1015FFG | | EGS2015FFG | | EGS3015FFG | | EGS4015FFG | |
| 16 | EGS1016FFG | | EGS2016FFG | | EGS3016FFG | | EGS4016FFG | |
| 20 | EGS1020FFG | | EGS2020FFG | | EGS3020FFG | | EGS4020FFG | |
| 25 | EGS1025FFG | | EGS2025FFG | | EGS3025FFG | | EGS4025FFG | |
| 30 | EGS1030FFG | | EGS2030FFG | | EGS3030FFG | | EGS4030FFG | |
| 32 | EGS1032FFG | | EGS2032FFG | | EGS3032FFG | | EGS4032FFG | |
| 35 | EGS1035FFG | | EGS2035FFG | | EGS3035FFG | | EGS4035FFG | |
| 40 | EGS1040FFG | | EGS2040FFG | | EGS3040FFG | | EGS4040FFG | |
| 45 | EGS1045FFG | | EGS2045FFG | | EGS3045FFG | | EGS4045FFG | |
| 50 | | | | | | | | |
| 60 | — | | EGE2050FFG | | EGE3050FFG | | EGE4050FFG | |
| 63 | — | | EGE2060FFG | | EGE3060FFG | | EGE4060FFG | |
| 70 | — | | EGE2063FFG | | EGE3063FFG | | EGE4063FFG | |
| 80 | — | | EGE2070FFG | | EGE3070FFG | | EGE4070FFG | |
| 90 | — | | EGE2080FFG | | EGE3080FFG | | EGE4080FFG | |
| 100 | — | | EGE2090FFG | | EGE3090FFG | | EGE4090FFG | |
| 125 | — | | EGE2100FFG | | EGE3100FFG | | EGE4100FFG | |
| EGE2125FFG | | | | | | | | |
| EGE3125FFG | | | EGE3125FFG | | EGE3125FFG | | EGE4125FFG | |
| EGE3125FFG | | | EGE3125FFG | | EGE3125FFG | | EGE4125FFG | |

^① 16, 32, 63 A are not UL listed ratings.^② Adjustable thermal are not UL listed.^③ Change the fourth digit to 7 for 100% neutral protection. Neutral is on the LH side.

EG-Frame

Table 45-10. Complete Breaker (Includes Frame, Trip Unit, Standard Terminals and Mounting Hardware) — IC Rating at 415/480 Volts (Continued)

| Max. Cont. Amps at 40°C ^① | 1-Pole | | 2-Pole | | 3-Pole | | | 4-Pole 0% Protected Neutral ^③ | | |
|--|------------------|-------------------|------------------|-------------------|------------------|-------------------|------------------------------------|--|------------------|-------------------|
| | Fixed Thermal | Fixed Magnetic | Fixed Thermal | Fixed Magnetic | Fixed Thermal | Fixed Magnetic | Adjustable ^② Thermal | Fixed Magnetic | Fixed Thermal | Fixed Magnetic |
| 70/65 | | | | | | | | | | |
| 15 | EGH1015FFG | | EGH2015FFG | | EGH3015FFG | | — | | EGH4015FFG | |
| 16 | EGH1016FFG | | EGH2016FFG | | EGH3016FFG | | — | | EGH4016FFG | |
| 20 | EGH1020FFG | | EGH2020FFG | | EGH3020FFG | | EGH3020AFG | | EGH4020FFG | |
| 25 | EGH1025FFG | | EGH2025FFG | | EGH3025FFG | | EGH3025AFG | | EGH4025FFG | |
| 30 | EGH1030FFG | | EGH2030FFG | | EGH3030FFG | | — | | EGH4030FFG | |
| 32 | EGH1032FFG | | EGH2032FFG | | EGH3032FFG | | EGH3032AFG | | EGH4032FFG | |
| 35 | EGH1035FFG | | EGH2035FFG | | EGH3035FFG | | — | | EGH4035FFG | |
| 40 | EGH1040FFG | | EGH2040FFG | | EGH3040FFG | | EGH3040AFG | | EGH4040FFG | |
| 45 | EGH1045FFG | | EGH2045FFG | | EGH3045FFG | | — | | EGH4045FFG | |
| 50 | EGH1050FFG | | EGH2050FFG | | EGH3050FFG | | EGH3050AFG | | EGH4050FFG | |
| 60 | EGH1060FFG | | EGH2060FFG | | EGH3060FFG | | — | | EGH4060FFG | |
| 63 | EGH1063FFG | | EGH2063FFG | | EGH3063FFG | | EGH3063AFG | | EGH4063FFG | |
| 70 | EGH1070FFG | | EGH2070FFG | | EGH3070FFG | | — | | EGH4070FFG | |
| 80 | EGH1080FFG | | EGH2080FFG | | EGH3080FFG | | EGH3080AFG | | EGH4080FFG | |
| 90 | EGH1090FFG | | EGH2090FFG | | EGH3090FFG | | — | | EGH4090FFG | |
| 100 | EGH1100FFG | | EGH2100FFG | | EGH3100FFG | | EGH3100AFG | | EGH4100FFG | |
| 125 | EGH1125FFG | | EGH2125FFG | | EGH3125FFG | | EGH3125AFG | | EGH4125FFG | |
| 100/100 | | | | | | | | | | |
| 15 | — | | — | | EGC3015FFG | | — | | EGC7015FFG | |
| 16 | — | | — | | EGC3016FFG | | — | | EGC7016FFG | |
| 20 | — | | — | | EGC3020FFG | | EGC3020AFG | | EGC7020FFG | |
| 25 | — | | — | | EGC3025FFG | | EGC3025AFG | | EGC7025FFG | |
| 30 | — | | — | | EGC3030FFG | | — | | EGC7030FFG | |
| 32 | — | | — | | EGC3032FFG | | EGC3032AFG | | EGC7032FFG | |
| 35 | — | | — | | EGC3035FFG | | — | | EGC7035FFG | |
| 40 | — | | — | | EGC3040FFG | | EGC3040AFG | | EGC7040FFG | |
| 45 | — | | — | | EGC3045FFG | | — | | EGC7045FFG | |
| 50 | — | | — | | EGC3050FFG | | EGC3050AFG | | EGC7050FFG | |
| 60 | — | | — | | EGC3060FFG | | — | | EGC7060FFG | |
| 63 | — | | — | | EGC3063FFG | | EGC3063AFG | | EGC7063FFG | |
| 70 | — | | — | | EGC3070FFG | | — | | EGC7070FFG | |
| 80 | — | | — | | EGC3080FFG | | EGC3080AFG | | EGC7080FFG | |
| 90 | — | | — | | EGC3090FFG | | — | | EGC7090FFG | |
| 100 | — | | — | | EGC3100FFG | | EGC3100AFG | | EGC7100FFG | |
| 125 | — | | — | | EGC3125FFG | | EGC3125AFG | | EGC7125FFG | |

^① 16, 32, 63 A are not UL listed ratings.^② Adjustable thermal is not UL listed.^③ Change the fourth digit to 7 for 100% neutral protection. Neutral is on LH side.

Table 45-11. Molded Case Switches

| | |
|-------------------|--|
| Catalog Number | |
| EGK2125KSG | |
| EGK3125KSG | |
| EGK4125KSG | |

Note: Molded case switches may open above 1250 A.