

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.

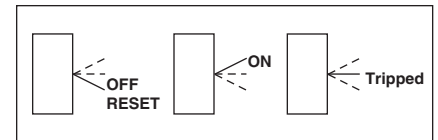


Figure 12-2. Positions of the Toggle Handle Drive

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.

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.

Electrical Characteristics

Table 12-2. 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							
Number of Poles	1	2, 3, 4	2, 3, 4		1	2, 3, 4		1	2, 3, 4		2, 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							
	480 Vac	—	18	25	—	35	—	65	100	25	35	65	100	150	200	35	50	65	100	150	200							
	600 Vac ③	—	—	18	—	22	—	25	35	18	18	25	35	50	50	18	25	35	50	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							
IEC 60947-2	220 – 240 Vac	<i>I_{CU}</i>	25	25	35	85	85	100	100	200	65	85	100	200	200	200	65	85	100	200	200	200						
		<i>I_{CS}</i>	25	25	35	43	43	50	50	200	65	85	100	200	200	200	65	85	100	200	200	200						
	380 – 415 Vac	<i>I_{CU}</i>	—	18	25	—	40	—	70	100	25	40	70	100	150	200	35	50	70	100	150	200						
		<i>I_{CS}</i>	—	18	25	—	30	—	35	100	25	40	70	100	150	200	35	50	70	100	150	200						
	660 – 690 Vac	<i>I_{CU}</i>	—	—	—	—	—	—	—	—	12	12	14	16	18	18	12	20	25	30	35	35						
		<i>I_{CS}</i>	—	—	—	—	—	—	—	—	6	6	7	12	14	14	6	10	13	15	18	18						
125/250 Vdc ④	<i>I_{CU}</i>	10 ⑥	10	10	35 ⑥	35	42 ⑥	42	42	10	22	22	42	50	50	22	22	42	42	50	50							
	<i>I_{CS}</i>	10 ⑥	10	10	35 ⑥	35	42 ⑥	42	42	10	22	22	42	50	50	22	22	42	42	50	50							
Ampere Range	15 – 160 A ①									20 – 250 A						100 – 630 A ②												
Trip Units F = Fixed A = Adjustable T = Thermal M = Magnetic	FT-FM AT-FM									FT-AM AT-AM Electronic (Digitrip RMS 310)						FT-AM AT-AM Electronic (Digitrip RMS 310)												
Thermal Magnetic	Interchangeable	—									■						■											
	Built-in	■									■						■											
Thermal Magnetic	Fixed Thermal	■									■						■											
	Adjustable Thermal	■									■						■											
Electronic rms ⑤	LS	—									■						■ ④											
	LSI	—									■						■ ④											
Electronic rms ⑤	LSG	—									■						■ ④											
	LSIG	—									■						■ ④											
Dimensions Inches (mm)	1-Pole	H			W			D			H			W			D			H			W			D		
		5.50 (139.7)			1.00 (25.4)			2.99 (76.0)			—			—			—			—			—			—		
	2-Pole	—			2.00 (50.8)			—			7.00 (177.8)			4.13 (105.0)			3.57 (87.4)			—			—			—		
	3-Pole	—			3.00 (76.2)			—			—			—			—			10.13 (258.0)			5.48 (140.0)			4.09 (104.0)		
4-Pole	—			4.00 (101.6)			—			—			5.34 (135.6)			—			—			7.22 (183.0)			—			
Weight (approximate) lbs. (kg)	1-Pole	2-Pole		3-Pole		4-Pole		2-Pole		3-Pole		4-Pole		3-Pole		4-Pole		3-Pole		4-Pole								
	0.85 (0.39)	1.57 (0.71)		2.28 (1.04)		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												

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 NG and RG

Table 12-2. Electrical Characteristics (Continued)

Maximum Rated Current (Amperes)		NG ^①					RG ^①		
		800, 1200			1600 ^②	800	1600, 2000, 2500		
Breaker Type		S	H	C ^③	S	U	H	C ^③	
Number of Poles		2, 3, 4			3	3	3, 4		
Breaker Capacity (kA rms) ac 50 – 60 Hz									
NEMA, UL, CSA	240 Vac	85	100	200	—	200	125	200	
	480 Vac	50	65	100	—	150	65	100	
	600 Vac	25	35	65	—	65	50	65	
IEC 60947-2	220 – 240 Vac	I_{cu}	85	100	200	85	—	135	200
		I_{cs}	85	100	100	85	—	100	100
	380 – 415 Vac	I_{cu}	50	70	100	50	—	70	100
		I_{cs}	50	50	50	50	—	50	50
	660 – 690 Vac	I_{cu}	20 ^④	25 ^④	35	20 ^④	—	25 ^④	35 ^④
		I_{cs}	10	13	18	10	—	13	18
	250 Vdc	I_{cu}	—	—	—	—	—	—	—
		I_{cs}	—	—	—	—	—	—	—
Ampere Range		400 – 1200 A			1600 A	800 A	800 – 2500 A		
Trip Units		Electronic					Electronic (Digitrip RMS 310, 610 and 910)		
Interchangeable		—					—		
Built-in		■					■		
Electronic ^⑤	LI	—					■ ^⑥		
	LS	■					■		
	LSI	■					■		
	LIG	—					■ ^⑥		
	LSG	■					■		
	LSIG	■					■		
Dimensions Inches (mm)	1-Pole	H	W	D	H	W	D		
	2-Pole	—	—	—	—	—	—		
	3-Pole	16.00 (406.0)	8.25 (210.0)	5.50 (140.0)	16.00 (406.0)	15.50 (394.0)	9.75 (229.0)		
	4-Pole	—	11.13 (280.0)	—	—	20.00 (508.0)	—		
Weight (approximate) lbs. (kg)		3-Pole		4-Pole		3-Pole		4-Pole	
		46.8 (21.3)		62.0 (28.3)		103.0 (47.0)		118.4 (54.0)	
Utilization Category		A					A		

^① The NG and RG MCCBs use metric threading in their line and load terminals. If English (Imperial) threading is needed, use Series C ND and RD MCCBs. Contact Eaton for more information.

^② NG 1600 ampere frame is not UL or CSA listed.

^③ Not KEMA-KEUR listed.

^④ IEC 60947-2 H.5 Annex H is not KEMA-KEUR tested.

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

^⑥ Available only on Digitrip 610 and 910 trip units.

Frame Sizes EG through RG

Table 12-3. EG through RG Electrical Characteristics

Technical Data	EG		JG		LG		NG		RG	
Maximum Rated Current I_n 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		⑤		⑤		—		—	
■ Circuit Breakers for Plant Protection	⑥		⑥		⑥		—		—	
– At 40°C	100%	100%	100%	100%	100%	100%	100%	100%		
– At 50°C	96%	92%	96%	94%	96%	91%	91%	91%		
– At 55°C	93%	87%	94%	90%	93%	86%	85%	85%		
– At 60°C	91%	83%	92%	87%	90%	82%	81%	81%		
– At 70°C	86%	73%	88%	80%	84%	70%	—	—		
■ Circuit Breakers for Motor Protection	—		100%		100%		—		—	
– At 40°C	—		100%		100%		—		—	
– At 50°C	—		100%		100%		—		—	
– At 55°C	—		100%		100%		—		—	
– At 60°C	—		100%		100%		—		—	
– At 70°C	—		90%		90%		—		—	
■ Circuit Breakers for Starter Combinations and Isolating Circuit Breakers	—		—		—		—		—	
– At 40°C	100%	100%	100%	100%	100%	100%	100%	100%		
– At 50°C	100%	100%	100%	100%	100%	91%	91%	91%		
– At 55°C	96%	96%	96%	95%	95%	85%	85%	85%		
– At 60°C	91%	82%	82%	90%	90%	81%	81%	81%		
– At 70°C	86%	88%	88%	84%	84%	—	—	—		
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	
	42 kA Max.		42 kA Max.		42 kA Max.		⑦		⑦	
	42 kA Max.		42 kA Max.		42 kA Max.		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 12-2 on Page 12-5									
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 12-3. EG through RG Electrical Characteristics (Continued)

Technical Data	EG	JG	LG		NG	RG
Conductor Cross Sections and Terminal Types for Main Conductors <ul style="list-style-type: none"> ■ Solid or Stranded ■ Finely Stranded with End Sleeve ■ Bus Bar Tightening Torque for Box Terminals Tightening Torque for Bus Bar Connection Pieces	Box Terminals 2.5 to 95 mm ² 2.5 to 50/70 mm ² — 5.6 Nm 5.6 Nm	Box Terminals 50 to 150 mm ² 35 to 120 mm ² — 20 Nm 15 Nm	Box Terminals 95 to 240 mm ² 70 to 150 mm ² — 42 Nm 30 Nm	Flat Bar Terminals — — 600 A 31 Nm 6 Nm	Flat Bar Terminals — — Optional 31 Nm 50 Nm	Flat Bar Terminals — — Optional — 20 Nm
Conductor Cross Sections for Auxiliary Circuits with Terminal Connection or Terminal Strip <ul style="list-style-type: none"> ■ Solid ■ Finely Stranded with End Sleeve ■ With Brought-out Cable Ends ■ Tightening Torque for Fitting Screws 	0.75 to 2.5 mm ² 0.75 to 2.5 mm ²	0.75 to 2.5 mm ² 0.75 to 2.5 mm ² 0.82 (AWG 18) mm ² 0.8 to 1.4 Nm	0.75 to 2.5 mm ² 0.75 to 2.5 mm ² 0.82 (AWG 18) mm ² 0.8 to 1.4 Nm		Up to 2x4 mm ² Up to 2x2.5 mm ² 0.82 (AWG 18) mm ² 0.8 to 1.4 Nm	Up to 2x4 mm ² Up to 2x2.5 mm ² 0.82 (AWG 18) mm ² 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) <ul style="list-style-type: none"> ■ For Plant Protection ■ As Isolating Circuit Breaker ■ For Starter Combinations ■ For Motor Protection 	40 W 40 W 40 W —	45 W 45 W 45 W 45 W	400 A: 65 W 65 W 65 W 65 W	600 A: 120 W 120 W 120 W 120 W	87/210 W 87/210 W — —	220/270/400 W 220/270/400 W — —
Permissible Mounting Position						
Arc Spacing — Suitable for Reverse-Feed Applications	Yes (Except HMCPE)	Yes	Yes		Yes	Yes

Frame Sizes EG through RG

Table 12-3. 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%	35 – 70% 85 – 110%	35 – 70% 85 – 110%	35 – 70% 85 – 110%	35 – 70% 85 – 110%
Power Consumption in Continuous Operation at: ■ 50/60 Hz 12 Vac ■ 50/60 Hz 24 Vac ■ 50/60 Hz 48 – 60 Vac ■ 50/60 Hz 110 – 127 Vac ■ 50/60 Hz 208 – 240 Vac ■ 50/60 Hz 380 – 500 Vac ■ 50/60 Hz 525 – 600 Vac ■ 12 Vdc ■ 24 Vdc ■ 48 – 60 Vdc ■ 110 – 125 Vdc ■ 220 – 250 Vdc Maximum Opening Time	0.95 VA 0.72 VA 1.15 – 1.78 VA 0.96 – 1.25 VA 1.28 – 1.68 VA 2.2 – 3.9 VA 3.4 – 4.3 VA 0.88 W 0.70 W 1.12 – 1.76 W 0.94 – 1.21 W 1.45 – 1.86 W 50 ms	1.9 VA 3.9 VA 2.5 – 3.8 VA 1.8 – 2.4 VA 2.7 – 3.8 VA 3.4 – 5.8 VA 3.4 – 4.3 VA 1.6 W 3.1 W 2.0 – 3.1 W 1.6 – 2.2 W 3.1 – 4 W 50 ms	1.9 VA 3.9 VA 2.5 – 3.8 VA 1.8 – 2.4 VA 2.7 – 3.8 VA 3.4 – 5.8 VA 3.4 – 4.3 VA 1.6 W 3.1 W 2.0 – 3.1 W 1.6 – 2.2 W 3.1 – 4 W 50 ms	1.9 VA 2.4 VA 2.3 – 4.1 VA 3.4 – 4.2 VA 4.8 – 6.5 VA 6.8 – 12.0 VA — 2.6 W 3.6 W 3.5 – 5.5 W 2.9 – 3.6 W 4.8 – 6.3 W 62 ms	2.9 VA 3.1 VA 3.4 – 6.0 VA 3.3 – 3.8 VA 4.2 – 7.2 VA 3.8 – 10.0 VA — 3.4 W 4.3 W 4.8 – 7.2 W 3.3 – 3.8 W 6.6 – 7.5 W 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 ■ 50/60 Hz 48 – 60 Vac ■ 50/60 Hz 48 – 127 Vac ■ 50/60 Hz 110 – 240 Vac ■ 50/60 Hz 380 – 440 Vac ■ 50/60 Hz 380 – 600 Vac ■ 50/60 Hz 480 – 600 Vac ■ 12 – 24 Vdc ■ 48 – 60 Vdc ■ 110 – 125 Vdc ■ 220 – 250 Vdc Maximum Load Duration Maximum Opening Time	10 – 41 VA 139 – 210 VA — 83 – 360 VA — 418 – 1080 VA — 29 – 120 W 475 – 720 W 99 – 121 W — Interrupts Automatically 50 ms	87 – 405 VA 710 – 1105 VA — 66 – 432 VA 127 – 188 VA — 34 – 60 VA 164 – 631 W 830 – 1580 W 112 – 150 W 40 – 58 W 50 ms	87 – 405 VA 710 – 1105 VA — 66 – 432 VA 127 – 188 VA — 34 – 60 VA 164 – 631 W 830 – 1580 W 112 – 150 W 40 – 58 W 50 ms	98 – 475 VA 24 – 50 VA — 67 – 432 VA 76 – 110 VA — 19 – 42 VA 145 – 610 W 67 – 102 W 121 – 150 W 46 – 55 W 62 ms	612 VA 403 – 666 VA — 396 – 1896 VA 1596 – 2156 VA — 230 – 384 VA 396 W 341 – 528 W 264 – 350 W 374 – 475 W 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

Frame Sizes EG through LG

DC Switching Duty

The EG- to LG-Frame circuit breakers are also suitable for switching dc currents.

The NG- and RG-Frame circuit breakers are not suitable for dc currents due to the solid-state overcurrent release system.

For switching dc currents, however, the maximum permissible dc voltage per conducting path has to be considered.

For voltages higher than 250 volts, the series connection of two or three conducting paths is required.

As the current has to flow through all conducting paths so as to maintain the thermal tripping characteristics, the following circuit arrangements are recommended. With dc, the trip values of the instantaneous short circuit release ("n" release) are increased by 30 to 40%.

Table 12-4. For 3- and 4-Pole Circuit Breakers

Proposed Circuit	Maximum Permissible Vdc U _e	Remarks
 NSI-5178a	250 Vdc	Double-pole switching. If there is no risk of an earth fault, or if any earth fault which occurs is immediately eliminated (earth fault monitoring), the maximum permissible dc voltage can be 600 volts.
 NSI-5179a	440 Vdc	Double-pole switching (earthed system). The earthed pole must always be assigned to the individual conducting path, so that two paths are always in series in the event of an earth fault.
 NSI-5180	600 Vdc	Single-pole switching (earthed system). Three conducting paths in series. The earthed pole must be assigned to the nonswitched conducting path.
 NSI-5181	750 Vdc	Single-pole switching (earthed system). Four conducting paths in series. The earthed pole must be assigned to the nonswitched conducting path.

Series G Electronic Trip Units

Multi-Function Electronic Trip Units for All Applications

Digitrip RMS Trip Units

True rms Sensing

Digitrip RMS Trip Units utilize our patented microprocessor-based intelligence to provide true rms sensing, permitting increased accuracy and reliable system protection. True rms sensing is not susceptible to nuisance tripping when waveforms containing high harmonic currents are present.

Digitrip RMS 310+

Digitrip RMS 310+ Electronic Trip Units are available with Cutler-Hammer Circuit Breakers JG and LG. They are selectable long time delay (t_{LD}) and pickup settings (I_p). A rating plug is not required. The Digitrip 310+ offers true rms sensing, is front adjustable and has an optional local display of current and cause of trip.

Rating Plugs

If rating plugs are needed for N- and R-Frame, they are marked for 50/60 Hz applications. Both fixed and adjustable rating plugs are available, providing further flexibility when applied to selectively coordinated systems.

Curve Shaping

When selectively coordinated systems are called for, Digitrip RMS 310+ will provide a cost-effective solution for a variety of applications.

The standard Digitrip RMS 310+ includes an adjustable short time pickup setting encompassing an I^2t ramp function which provides the basic LS curve shaping function. JG- and LG-Frames have an adjustable long time delay.

JG- and LG-Frames have selectable long time delay (t_{LD}) and pickup settings (I_p). A rating plug is not required.

The optional Digitrip RMS 310+ provides additional flat response short time delay adjustments on an instantaneous setting to provide LSI curve shaping capability.

Digitrip RMS 310+ Trip Units are available with ground fault pickup and flat response ground fault delay which provides the trip unit with full function LSG and LSIG curve shaping flexibility.

Note: Contact factory for availability of ground fault for LG-Frame trip unit.

Digitrip RMS 310+ Trip Units can effectively coordinate with both sophisticated upstream power breakers as well as downstream thermal magnetic breakers...making Digitrip RMS 310+ Trip Units the cost-effective reliable choice for selectively coordinated systems.

Thermal Memory

All Digitrip RMS Trip Units incorporate a long delay. Thermal memory prevents the system from cumulative overheating due to repeated overcurrent events that may occur in quick succession.

Field Testing

A field test kit is available for Digitrip RMS 310+ trip units.

Digitrip RMS 610 and 910



RMS 610

RMS 910

Digitrip RMS 610 and 910 Trip Units are available with Cutler-Hammer R-Frame Circuit Breakers 800 through 2500 amperes. Digitrip 610 and 910 Trip Units provide unparalleled system protection with the added convenience of a local display.

Curve Shaping

Digitrip RMS 610 and 910 Trip Units are available with up to nine curve shaping choices achieved by adjusting up to seven switches on the front of the unit for optimum system coordination. Maximum curve shaping flexibility is provided by dependent long and short delay adjustments that are long delay pickup (I_p) based, depicted on the front of the unit by the blue portion of the time-current curve.

Additional coordination capability can be provided by utilizing the short delay and ground fault zone selective interlocking features available on these trip units.

Series G Electronic Trip Units**System Diagnostics**

Digitrip RMS 610 and 910 models of trip units provide long delay, short delay, instantaneous, and ground fault cause of trip LEDs on the front of the unit. Their display shows a magnitude of trip information, as well as remote signal contacts, for improved system alarming.

System Monitoring

Digitrip 610 and 910 Trip Units have the capability to monitor phase currents, as well as neutral or ground currents. This information is displayed on a large digital display mounted on the unit.

Digitrip RMS 910 Trip Units can also provide the user with power and energy monitoring capability. Peak power demand, present power demand, and total energy, as well as forward and reverse energy can be monitored with this unit.

Digitrip RMS 910 Trip Units have the additional capability of monitoring line-to-line voltage, as well as system power factor. Both parameters are displayed in the digital display window and are supported by LEDs to indicate which parameter is being displayed.

Harmonics Monitoring

Digitrip RMS 910 Trip Units are capable of displaying values of current harmonics in the digital display window. Percentage of harmonic content can be monitored for each phase, up to the 27th harmonic. Additionally, a total harmonic distortion value can be calculated and displayed.

Communications

Digitrip RMS 910 units have built-in communications options to allow all protection, monitoring, and control information to be transmitted back to a central location via the Cutler-Hammer PowerNet™ system.

Field Testing

Integral field testing capability is provided on all 610 and 910 Trip Units. No additional test set is needed to perform both trip and no trip field testing.

Digitrip RMS Electronic Trip Unit Selection Guide

Table 12-5. Digitrip RMS Electronic Trip Unit Selection Guide

Digitrip	RMS 310	RMS 610	RMS 910
	<p>JG LG/NG RG</p>		

Breaker Type

Breaker Type	RMS 310	RMS 610	RMS 910
Cutler-Hammer Frame(s)	JG-, LG-, NG- and RG-Frames	RG-Frame	RG-Frame
Ampere Rating	20 – 2500 A	800 – 2500 A	800 – 2500 A
Interrupting Rating at 415 V	35, 70, 100 kA	70, 100 kA	70, 100 kA

Trip Unit Sensing

Trip Unit Sensing	RMS 310	RMS 610	RMS 910
rms Sensing	Yes	Yes	Yes

Protection and Coordination

Protection	Ordering Options	LS, LSG	LSI, LSI ¹	LI, LS, LSI, LIG, LSG, LSI ¹	LI, LS, LSI, LIG, LSG, LSI ¹
Protection	Fixed Rating Plug (I_N) ^①	Yes	Yes	Yes	Yes
	Overtemperature Trip	Yes	Yes	Yes	Yes
	Adjustable Rating Plug (I_N) ^①	Yes	Yes	No	No
Long Delay	Long Delay Setting	0.5 – 1.0 (I_N) ^②	0.5 – 1.0 (I_N) ^②	0.5 – 1.0 x (I_N)	0.5 – 1.0 x (I_N)
	Long Delay Time I^2t at 6x	10 Seconds ^②	10 Seconds ^②	2 – 24 Seconds	2 – 24 Seconds
	Long Delay Thermal Memory	Yes	Yes	Yes	Yes
	High Load Alarm	No	No	0.85 x I_r	0.85 x I_r
Short Delay	Short Delay Setting	Var/Frame ^③	Var/Frame ^③	200 – 600% S1 & S2 x (I_r)	200 – 600% S1 & S2 x (I_r)
	Short Delay Time I^2t	100 ms	No	100, 300, 500 ms	100, 300, 500 ms
	Short Delay Time Flat	No	1 – 300 ms	100 – 500 ms	100 – 500 ms
	Short Delay Time ZSI	No	No	Yes	Yes
Instantaneous	Instantaneous Setting	No	200 – 800% x (I_N) ^④	200 – 600% M1 & M2 x (I_N)	200 – 600% M1 & M2 x (I_N)
	Discriminator	No	No	Yes ^⑤	Yes ^⑤
	Instantaneous Override	Yes	Yes	Yes	Yes
Ground Fault	Ground Fault Setting	Var/Frame ^⑥	Var/Frame ^⑥	25 – 100% x (I_N) ^⑥	25 – 100% x (I_N) ^⑥
	Ground Fault Delay I^2t at .62x	No	No	100, 300, 500 ms	100, 300, 500 ms
	Ground Fault Delay Flat	1 – 500 ms ^⑦	1 – 500 ms ^⑦	100 – 500 ms	100 – 500 ms
	Ground Fault ZSI	No	No	Yes	Yes
	Ground Fault Thermal Memory	No	No	Yes	Yes

System Diagnostics

System Diagnostics	RMS 310	RMS 610	RMS 910
Cause of Trip LEDs	No	No	Yes
Magnitude of Trip Information	No	No	Yes
Remote Signal Contacts	No	No	Yes

System Monitoring

System Monitoring	RMS 310	RMS 610	RMS 910
Digital Display	No	No	Yes
Current	No	No	Yes
Voltage	No	No	No
Power and Energy	No	No	No
Power Quality — Harmonics	No	No	No
Power Factor	No	No	No

System Communications

System Communications	RMS 310	RMS 610	RMS 910
PowerNet	No	No	No

Field Testing

Field Testing	RMS 310	RMS 610	RMS 910
Testing Method	Test Set	Test Set	Integral

① JG- and LG-Frames have selectable settings instead of a rating plug.
 ② JG-, LG- and NG-Frames have adjustable long delay times of 2 – 24 seconds.
 ③ JG/LG: 2X – 14X (I_N); NG: 2X – 8X (I_N);
 RG: 2X – 8X (I_N); 2500 ampere RG-Frame
 200 – 600% x (I_N).

④ JG-Frame also has a 14X setting.
 ⑤ LS, LSG only.
 ⑥ Not to exceed 1200 amperes.

⑦ JG- and LG-Frames are Instantaneous, 120 ms.
 NG- and RG-Frames are Instantaneous, 100,
 300 and 500 ms.
Note: I_N = Rating plug rating.
 I_r = Long delay setting.

EG-Frame



Eaton's Cutler-Hammer EG

Product Description

- EG breaker is HACR rated.

Technical Data and Specifications

Table 12-6. 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	35	25	25	18	—	—	—	—	—	—	—	10	10	—	—
	2, 3, 4	—	25	25	—	—	18	18	18	—	—	—	—	—	10	10
EGE125	2, 3, 4	—	35	35	—	—	25	25	25	18	—	—	—	—	10	10
EGS125	1	100	85	43	35	22	—	—	—	—	—	—	35	35	—	—
	2, 3, 4	—	85	43	—	—	40	30	35	22	—	—	—	—	35	35
EGH125	1	200	100	50	65	30	—	—	—	—	—	—	42	42	—	—
	2, 3, 4	—	100	50	—	—	70	35	65	25	—	—	—	—	42	42
EGC125	3, 4	—	200	200	—	—	100	100	100	35	—	—	—	—	42	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 12-7. Dimensions in Inches (mm)

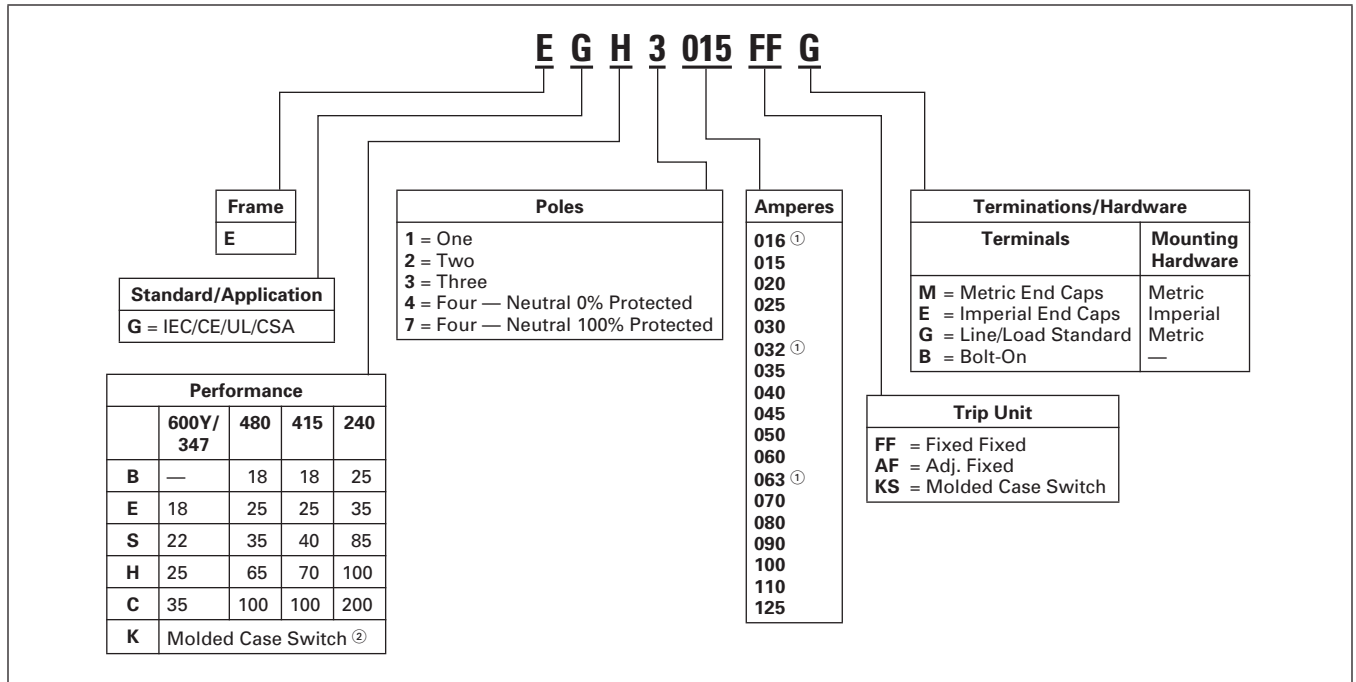
Number of Poles	Width	Height	Depth
1	1.00 (25.4)	5.50 (139.7)	2.99 (75.9)
2	2.00 (50.8)	5.50 (139.7)	2.99 (75.9)
3	3.00 (76.2)	5.50 (139.7)	2.99 (75.9)
4	4.00 (101.6)	5.50 (139.7)	2.99 (75.9)

Table 12-8. 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)

Product Selection

Table 12-9. Main Catalog Numbering System



① Cannot be UL rated.

② Available only as 125 and 160 A sizes.

EG-Frame

Product Selection

Table 12-10. 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	Price U.S. \$	Fixed Thermal Fixed Magnetic	Price U.S. \$	Fixed Thermal Fixed Magnetic	Price U.S. \$	Adjustable ② Thermal Fixed Magnetic	Price U.S. \$	Fixed Thermal Fixed Magnetic	Price U.S. \$	Adjustable Thermal Fixed Magnetic	Price U.S. \$
18/18												
15	EGB1015FFG		EGB2015FFG		EGB3015FFG		—		EGB4015FFG		—	
16	EGB1016FFG		EGB2016FFG		EGB3016FFG		—		EGB4016FFG		—	
20	EGB1020FFG		EGB2020FFG		EGB3020FFG		—		EGB4020FFG		EGB4020AFG	
25	EGB1025FFG		EGB2025FFG		EGB3025FFG		EGB3025AFG		EGB4025FFG		EGB4025AFG	
30	EGB1030FFG		EGB2030FFG		EGB3030FFG		—		EGB4030FFG		—	
32	EGB1032FFG		EGB2032FFG		EGB3032FFG		EGB3032AFG		EGB4032FFG		EGB4032AFG	
35	EGB1035FFG		EGB2035FFG		EGB3035FFG		—		EGB4035FFG		—	
40	EGB1040FFG		EGB2040FFG		EGB3040FFG		EGB3040AFG		EGB4040FFG		EGB4040AFG	
45	EGB1045FFG		EGB2045FFG		EGB3045FFG		—		EGB4045FFG		—	
50	EGB1050FFG		EGB2050FFG		EGB3050FFG		EGB3050AFG		EGB4050FFG		EGB4050AFG	
60	EGB1060FFG		EGB2060FFG		EGB3060FFG		—		EGB4060FFG		—	
63	EGB1063FFG		EGB2063FFG		EGB3063FFG		EGB3063AFG		EGB4063FFG		EGB4063AFG	
70	EGB1070FFG		EGB2070FFG		EGB3070FFG		—		EGB4070FFG		—	
80	EGB1080FFG		EGB2080FFG		EGB3080FFG		EGB3080AFG		EGB4080FFG		EGB4080AFG	
90	EGB1090FFG		EGB2090FFG		EGB3090FFG		—		EGB4090FFG		—	
100	EGB1100FFG		EGB2100FFG		EGB3100FFG		EGB3100AFG		EGB4100FFG		EGB4100AFG	
125	EGB1125FFG		EGB2125FFG		EGB3125FFG		EGB3125AFG		EGB4125FFG		EGB4125AFG	
25/25												
15	—		EGE2015FFG		EGE3015FFG		—		EGE4015FFG		—	
16	—		EGE2016FFG		EGE3016FFG		—		EGE4016FFG		—	
20	—		EGE2020FFG		EGE3020FFG		—		EGE4020FFG		EGB4020AFG	
25	—		EGE2025FFG		EGE3025FFG		EGB3025AFG		EGE4025FFG		EGB4025AFG	
30	—		EGE2030FFG		EGE3030FFG		—		EGE4030FFG		—	
32	—		EGE2032FFG		EGE3032FFG		EGB3032AFG		EGE4032FFG		EGB4032AFG	
35	—		EGE2035FFG		EGE3035FFG		—		EGE4035FFG		—	
40	—		EGE2040FFG		EGE3040FFG		EGB3040AFG		EGE4040FFG		EGB4040AFG	
45	—		EGE2045FFG		EGE3045FFG		EGB3050AFG		EGE4045FFG		—	
50	—		EGE2050FFG		EGE3050FFG		—		EGE4050FFG		EGB4050AFG	
60	—		EGE2060FFG		EGE3060FFG		—		EGE4060FFG		—	
63	—		EGE2063FFG		EGE3063FFG		EGB3063AFG		EGE4063FFG		EGB4063AFG	
70	—		EGE2070FFG		EGE3070FFG		—		EGE4070FFG		—	
80	—		EGE2080FFG		EGE3080FFG		EGB3080AFG		EGE4080FFG		EGB4080AFG	
90	—		EGE2090FFG		EGE3090FFG		—		EGE4090FFG		—	
100	—		EGE2100FFG		EGE3100FFG		EGB3100AFG		EGE4100FFG		EGB4100AFG	
125	—		EGE2125FFG		EGE3125FFG		EGB3125AFG		EGE4125FFG		EGB4125AFG	
40/35												
15	EGS1015FFG		EGS2015FFG		EGS3015FFG		—		EGS4015FFG		—	
16	EGS1016FFG		EGS2016FFG		EGS3016FFG		—		EGS4016FFG		—	
20	EGS1020FFG		EGS2020FFG		EGS3020FFG		—		EGS4020FFG		EGS4020AFG	
25	EGS1025FFG		EGS2025FFG		EGS3025FFG		EGB3025AFG		EGS4025FFG		EGS4025AFG	
30	EGS1030FFG		EGS2030FFG		EGS3030FFG		—		EGS4030FFG		—	
32	EGS1032FFG		EGS2032FFG		EGS3032FFG		EGB3032AFG		EGS4032FFG		EGS4032AFG	
35	EGS1035FFG		EGS2035FFG		EGS3035FFG		—		EGS4035FFG		—	
40	EGS1040FFG		EGS2040FFG		EGS3040FFG		EGB3040AFG		EGS4040FFG		EGS4040AFG	
45	EGS1045FFG		EGS2045FFG		EGS3045FFG		—		EGS4045FFG		—	
50	EGS1050FFG		EGS2050FFG		EGS3050FFG		EGB3050AFG		EGS7050FFG		EGS4050AFG	
60	EGS1060FFG		EGS2060FFG		EGS3060FFG		—		EGS7060FFG		—	
63	EGS1063FFG		EGS2063FFG		EGS3063FFG		EGB3063AFG		EGS7063FFG		EGS4063AFG	
70	EGS1070FFG		EGS2070FFG		EGS3070FFG		—		EGS7070FFG		—	
80	EGS1080FFG		EGS2080FFG		EGS3080FFG		EGB3080AFG		EGS7080FFG		EGS4080AFG	
90	EGS1090FFG		EGS2090FFG		EGS3090FFG		—		EGS7090FFG		—	
100	EGS1100FFG		EGS2100FFG		EGS3100FFG		EGB3100AFG		EGS7100FFG		EGS4100AFG	
125	EGS1125FFG		EGS2125FFG		EGS3125FFG		EGB3125AFG		EGS7125FFG		EGS4125AFG	

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 12-10. 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	Price U.S. \$	Fixed Thermal Fixed Magnetic	Price U.S. \$	Fixed Thermal Fixed Magnetic	Price U.S. \$	Adjustable ② Thermal Fixed Magnetic	Price U.S. \$	Fixed Thermal Fixed Magnetic	Price U.S. \$	Adjustable Thermal Fixed Magnetic	Price U.S. \$
70/65												
15	EGH1015FFG		EGH2015FFG		EGH3015FFG		—		EGH4015FFG		—	
16	EGH1016FFG		EGH2016FFG		EGH3016FFG		—		EGH4016FFG		—	
20	EGH1020FFG		EGH2020FFG		EGH3020FFG		EGH3020AFG		EGH4020FFG		EGH4020AFG	
25	EGH1025FFG		EGH2025FFG		EGH3025FFG		EGH3025AFG		EGH4025FFG		EGH4025AFG	
30	EGH1030FFG		EGH2030FFG		EGH3030FFG		—		EGH4030FFG		—	
32	EGH1032FFG		EGH2032FFG		EGH3032FFG		EGH3032AFG		EGH4032FFG		EGH4032AFG	
35	EGH1035FFG		EGH2035FFG		EGH3035FFG		—		EGH4035FFG		—	
40	EGH1040FFG		EGH2040FFG		EGH3040FFG		EGH3040AFG		EGH4040FFG		EGH4040AFG	
45	EGH1045FFG		EGH2045FFG		EGH3045FFG		—		EGH4045FFG		—	
50	EGH1050FFG		EGH2050FFG		EGH3050FFG		EGH3050AFG		EGH4050FFG		—	
60	EGH1060FFG		EGH2060FFG		EGH3060FFG		—		EGH4060FFG		—	
63	EGH1063FFG		EGH2063FFG		EGH3063FFG		EGH3063AFG		EGH4063FFG		EGH4063AFG	
70	EGH1070FFG		EGH2070FFG		EGH3070FFG		—		EGH4070FFG		—	
80	EGH1080FFG		EGH2080FFG		EGH3080FFG		EGH3080AFG		EGH4080FFG		EGH4080AFG	
90	EGH1090FFG		EGH2090FFG		EGH3090FFG		—		EGH4090FFG		—	
100	EGH1100FFG		EGH2100FFG		EGH3100FFG		EGH3100AFG		EGH4100FFG		EGH4100AFG	
125	EGH1125FFG		EGH2125FFG		EGH3125FFG		EGH3125AFG		EGH4125FFG		EGH4125AFG	
100/100												
15	—		—		EGC3015FFG		—		EGC7015FFG		—	
16	—		—		EGC3016FFG		—		EGC7016FFG		—	
20	—		—		EGC3020FFG		EGC3020AFG		EGC7020FFG		EGC7020AFG	
25	—		—		EGC3025FFG		EGC3025AFG		EGC7025FFG		EGC7025AFG	
30	—		—		EGC3030FFG		—		EGC7030FFG		—	
32	—		—		EGC3032FFG		EGC3032AFG		EGC7032FFG		EGC7032AFG	
35	—		—		EGC3035FFG		—		EGC7035FFG		—	
40	—		—		EGC3040FFG		EGC3040AFG		EGC7040FFG		EGC7040AFG	
45	—		—		EGC3045FFG		—		EGC7045FFG		—	
50	—		—		EGC3050FFG		EGC3050AFG		EGC7050FFG		EGC7050AFG	
60	—		—		EGC3060FFG		—		EGC7060FFG		—	
63	—		—		EGC3063FFG		EGC3063AFG		EGC7063FFG		EGC7063AFG	
70	—		—		EGC3070FFG		—		EGC7070FFG		—	
80	—		—		EGC3080FFG		EGC3080AFG		EGC7080FFG		EGC7080AFG	
90	—		—		EGC3090FFG		—		EGC7090FFG		—	
100	—		—		EGC3100FFG		EGC3100AFG		EGC7100FFG		EGC7100AFG	
125	—		—		EGC3125FFG		EGC3125AFG		EGC7125FFG		EGC7125AFG	

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 12-11. Molded Case Switches

Catalog Number	Price U.S. \$
EGK3125KSG	
EGK7125KSG	

Note: Molded case switches may open above 1250 A.

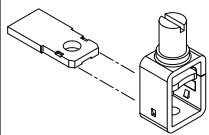
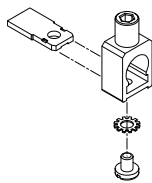
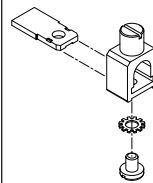
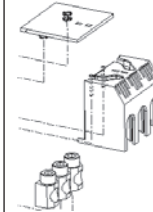
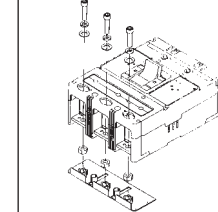

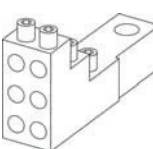
EG-Frame

Table 12-12. EG Bolt-On Complete Breaker (Includes Frame, Trip Unit and Mounting Hardware)

Max. Cont. Amps	1-Pole		2-Pole		3-Pole	
	Fixed Thermal Fixed Magnetic	Price U.S. \$	Fixed Thermal Fixed Magnetic	Price U.S. \$	Fixed Thermal Fixed Magnetic	Price U.S. \$
18 kAIC at 480 Vac						
15	EGB1015FFB		EGB2015FFB		EGB3015FFB	
20	EGB1020FFB		EGB2020FFB		EGB3020FFB	
25	EGB1025FFB		EGB2025FFB		EGB3025FFB	
30	EGB1030FFB		EGB2030FFB		EGB3030FFB	
35	EGB1035FFB		EGB2035FFB		EGB3035FFB	
40	EGB1040FFB		EGB2040FFB		EGB3040FFB	
45	EGB1045FFB		EGB2045FFB		EGB3045FFB	
50	EGB1050FFB		EGB2050FFB		EGB3050FFB	
60	EGB1060FFB		EGB2060FFB		EGB3060FFB	
63	EGB1070FFB		EGB2070FFB		EGB3070FFB	
70	EGB1080FFB		EGB2080FFB		EGB3080FFB	
80	EGB1090FFB		EGB2090FFB		EGB3090FFB	
90	EGB1100FFB		EGB2100FFB		EGB3100FFB	
100	EGB1110FFB		EGB2110FFB		EGB3110FFB	
125	EGB1125FFB		EGB2125FFB		EGB3125FFB	
35 kAIC at 480 Vac						
15	EGS1015FFB		EGS2015FFB		EGS3015FFB	
20	EGS1020FFB		EGS2020FFB		EGS3020FFB	
25	EGS1025FFB		EGS2025FFB		EGS3025FFB	
30	EGS1030FFB		EGS2030FFB		EGS3030FFB	
35	EGS1035FFB		EGS2035FFB		EGS3035FFB	
40	EGS1040FFB		EGS2040FFB		EGS3040FFB	
45	EGS1045FFB		EGS2045FFB		EGS3045FFB	
50	EGS1050FFB		EGS2050FFB		EGS3050FFB	
60	EGS1060FFB		EGS2060FFB		EGS3060FFB	
63	EGS1070FFB		EGS2070FFB		EGS3070FFB	
70	EGS1080FFB		EGS2080FFB		EGS3080FFB	
80	EGS1090FFB		EGS2090FFB		EGS3090FFB	
90	EGS1100FFB		EGS2100FFB		EGS3100FFB	
100	EGS1110FFB		EGS2110FFB		EGS3110FFB	
125	EGS1125FFB		EGS2125FFB		EGS3125FFB	
65 kAIC at 480 Vac						
15	EGH1015FFB		EGH2015FFB		EGH3015FFB	
20	EGH1020FFB		EGH2020FFB		EGH3020FFB	
25	EGH1025FFB		EGH2025FFB		EGH3025FFB	
30	EGH1030FFB		EGH2030FFB		EGH3030FFB	
35	EGH1035FFB		EGH2035FFB		EGH3035FFB	
40	EGH1040FFB		EGH2040FFB		EGH3040FFB	
45	EGH1045FFB		EGH2045FFB		EGH3045FFB	
50	EGH1050FFB		EGH2050FFB		EGH3050FFB	
60	EGH1060FFB		EGH2060FFB		EGH3060FFB	
63	EGH1070FFB		EGH2070FFB		EGH3070FFB	
70	EGH1080FFB		EGH2080FFB		EGH3080FFB	
80	EGH1090FFB		EGH2090FFB		EGH3090FFB	
90	EGH1100FFB		EGH2100FFB		EGH3100FFB	
100	EGH1110FFB		EGH2110FFB		EGH3110FFB	
125	EGH1125FFB		EGH2125FFB		EGH3125FFB	

12

Selection Guide and Ordering Information

						
3T125EF	3TA125EF	3TA150EF	3TA160EFK	EF2RTWK, 2-Pole – Metric EF3RTWK, 3-Pole – Metric EF4RTWK, 4-Pole – Metric EF2RTDK, 2-Pole – Imperial EF3RTDK, 3-Pole – Imperial EF4RTDK, 4-Pole – Imperial	Control Wire Terminal Kit GCWTK	Multiwire Connectors

Line and Load Terminals

EG-Frame circuit breakers and molded case switches have line and load terminals as standard equipment.

Table 12-13. Line and Load Terminals

Max. Breaker Amps	Terminal Body Material	Wire Type	Metric Wire Range mm ²	AWG Wire Range	Catalog Number Package of 3 Terminals	Price U.S. \$
Standard Cu/Al Pressure Type Terminals						
125	Steel	Cu	2.5-95	#14-3/0	3T125EF ①	
125 125/160	Aluminum Aluminum	Cu/Al Cu/Al	2.5-50 16-95	#14-1/0 #6-3/0	3TA125EF 3TA150EF	
160 160	Aluminum Aluminum	Cu/Al Cu/Al	35-120 35-120	#3-250 #3-250	3TA160EFK 4TA160EFK	

① Standard line and load terminals.

Insert collar enclosing conductor as shown. Locate nut on top of conductor and tighten securely with screw and washer.

Caution: Collar must surround conductor.

Insert collar enclosing conductor and center on extrusion. Tighten securely with screw and washer. Endcap kits are used on the E-Frame breaker line side to connect bus bar or similar electrical connections. Includes hardware.

Control Wire Terminal Kit

For use with steel or stainless steel standard line and load terminals only.

Table 12-14. Control Wire Terminal Kit

Package of 12 — Priced Individually	Catalog Number	Price U.S. \$
Control Wire Terminal Kit	5652B38G01	

Interphase Barriers

The interphase barrier is available for extended insulation between circuit breaker poles. Specify quantity when ordering.

Table 12-15. Interphase Barriers

Package of 2 — Priced Individually	Catalog Number	Price U.S. \$
Interphase Barriers	EIPBK	

Base Mounting Hardware

Metric base mounting hardware is included with a circuit breaker or molded case switch. (Included with breaker.)

Note: English mounting hardware kit can be supplied separate. Catalog number is **BMHE #6 – 32 x 3 inches.**

Table 12-16. DIN Rail Mounting

DIN Rail Adapter	Catalog Number	Price U.S. \$
3- or 4-Pole	EF34DIN	

Multiwire Connectors

Field-installed multiwire connectors for the load side (OFF) end terminals. They are used to distribute the load from the circuit breaker to multiple devices without the use of separate distribution terminal blocks.

Multiwire lug kits include mounting hardware, terminal shield insulators and tin-plated aluminum connectors to replace three mechanical load lugs. UL listed as used on the load side (OFF) end.

**Table 12-17. EG-Frame Multiwire Connectors
Ordering Information (Package of 3)**

Max. Amps	Wires per Terminal	Wire Size Range AWG Cu	Kit Catalog Number	Price U.S. \$
125	3	14 – 2	3TA125E3K	
125	6	14 – 6	3TA125E6K	

Terminal Shields

The terminal shield is available for line terminal areas in 3- and 4-pole circuit breakers. Special terminal shields are also available for use when an electrical (solenoid) operator is mounted on the circuit breaker. The standard style number by pole for each terminal shield is for a package of 10 and is priced per each package. Special terminal shields are packaged individually.

Table 12-18. Terminal Shields

Number of Poles	IP30 Protection	Price U.S. \$
	Catalog Numbers	
3	EFTS3K	
4	EFTS4K	

EG-Frame

Terminal End Covers (Gas Barrier)

The terminal end cover is available for 3-pole circuit breakers only. Two conductor opening sizes are available. Specify quantity (one per circuit breaker) when ordering.

Table 12-19. Terminal End Covers

Conductor Opening Diameter – Inches (mm)	Catalog Number	Price U.S. \$
6.35 (0.25)	EEC3K	
10.41 (0.41)	EEC4K	

Allowable Accessory Combinations

Different combinations of accessories can be supplied, depending on the types of accessories and the number of poles in the circuit breaker.

Table 12-20. Accessories

Description	Reference Page	1-Pole			2-Pole			3-Pole			4-Pole			
		Center	Left	Right	Left	Right	Left	Center	Right	Left	Center	Right	Neutral	
Internal Accessories (Only one internal accessory per pole)														
Alarm Lockout (Make/Break)	12-65			■					■				■	
Alarm Lockout (2Make/2Break)	12-65			■					■				■	
Auxiliary Switch (1A, 1B)	12-65			■					■				■	
Auxiliary Switch (2A, 2B)	12-65			■					■				■	
Auxiliary Switch and Alarm Switch Combination	12-65			■					■				■	
Shunt Trip — Standard	12-65						■				■			
Undervoltage Release Mechanism	12-65						■				■			
External Accessories														
End Cap Kit	12-19			●					●				●	
Control Wire Terminal Kit	12-19	●		●					●				●	
Multiwire Connectors	12-19	●		●					●				●	
Base Mounting Hardware	12-19	●		●					●				●	
Terminal Shields	12-19	●		●					●				●	
Terminal End Covers	12-20								●					
Interphase Barriers	12-19			●					●				●	
Non-Padlockable Handle Block	12-64	■	■					■					■	
Snap-On Padlockable Handle Lock Hasp	12-64	■	■					■					■	
Padlockable Handle Lock Hasp	12-64			■		□			□		□			□
Walking Beam Interlock — Requires Two Breakers	12-64								●				●	
Plug-in Adapters	12-66			●					●				●	
Electrical Operator	12-64								●					
Handle Mechanisms	12-67								●					
Modifications (Refer to Eaton)														
Moisture Fungus Treatment	12-73	●		●					●				●	
Freeze-Tested Circuit Breakers	—	●		●					●				●	
Marine Application	—	●		●					●				●	

■ Applicable in indicated pole position

□ May be mounted on left or right pole — not both

● Accessory available/Modification available

JG-Frame



Eaton's Cutler-Hammer J250

Product Description

- JG breaker is HACR rated.

Technical Data and Specifications

Table 12-21. UL 489/IEC 60947-2 Interrupting Capacity Ratings

Circuit Breaker Type	Number of Poles	Interrupting Capacity (kA Symmetrical Amperes)								Volts dc ^①
		Volts ac (50/60 Hz)								
		220 – 240		380 – 415		480	600	690		
		I _{cu}	I _{cs}	I _{cu}	I _{cs}			I _{cu}	I _{cs}	
JGE250	2, 3, 4	65	65	25	25	25	18	12	6	10
JGS250	2, 3, 4	85	85	40	40	35	18	12	6	22
JGH250	2, 3, 4	100	100	70	70	65	25	14	7	22
JGC250	3, 4	200	200	100	100	100	35	16	12	42
JGU250	3, 4	200	200	150	150	150	50	18	14	50
JGX250	3, 4	200	200	200	200	200	50	18	14	50

- ① dc ratings apply to substantially non-inductive circuits.
- ② 2-pole circuit breaker, or two poles of 3-pole circuit breaker.
- ③ Time constant is 3 milliseconds minimum at 10 kA and 8 milliseconds minimum at 22 kA.

Dimensions/Weights

Table 12-22. Dimensions in Inches (mm)

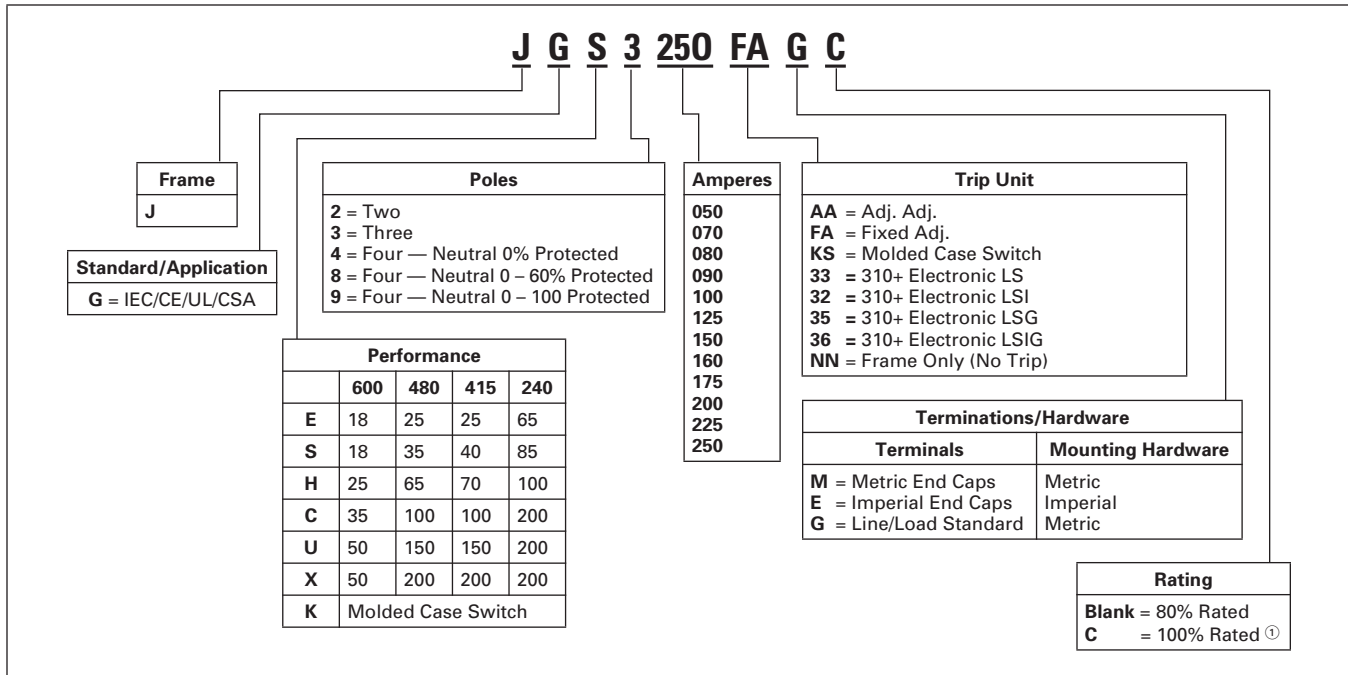
Number of Poles	Width	Height	Depth
2/3	4.13 (104.9)	7.00 (177.8)	3.57 (90.7)
4	5.34 (135.6)	7.00 (177.8)	3.57 (90.7)

Table 12-23. Approximate Shipping Weight in Lbs. (kg)

Breaker Type	Number of Poles	
	2/3	4
JGE, JGS, JGH, JGC, JGU, JGX	6 (2.7)	8 (3.6)

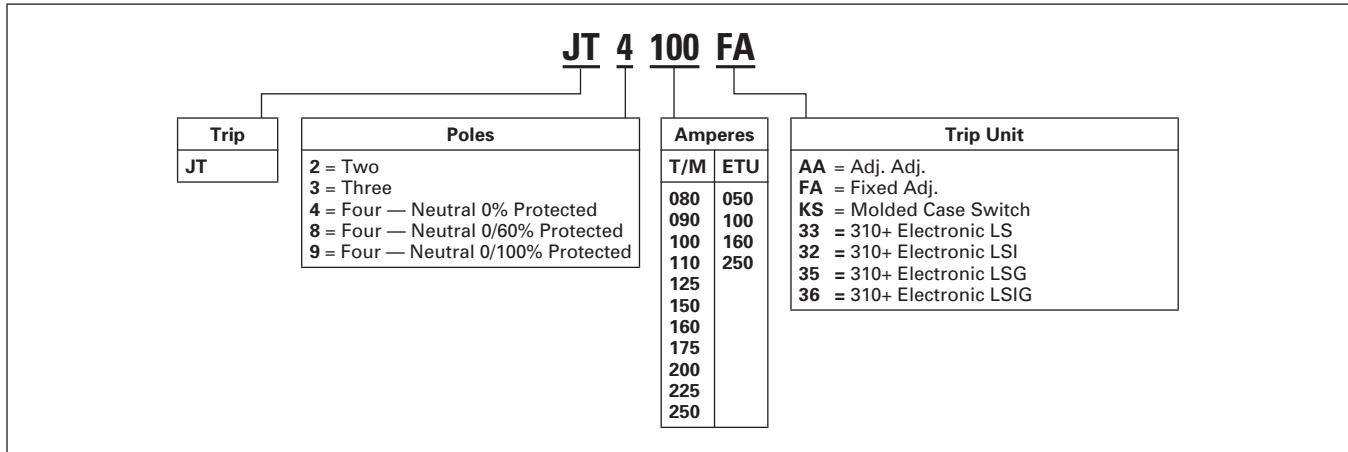
Product Selection

Table 12-24. Main Catalog Numbering System



① 100% rating only available on breakers with electronic trip unit.

Table 12-25. Trip Unit Catalog Numbering System



November 2008

JG-Frame

Product Selection

Table 12-26. Complete Breaker (Includes Frame, Trip Unit, Standard Terminals and Mounting Hardware) — IC Rating at 415/480 Volts

Maximum Continuous Amperes	Magnetic Range	2-Pole		3-Pole		4-Pole 0% ①				
		Fixed Thermal Adjustable Magnetic		Fixed Thermal Adjustable Magnetic		Fixed Thermal Adjustable Magnetic		Adjustable Thermal Adjustable Magnetic ②		
		Catalog Number	Price U.S. \$	Catalog Number	Price U.S. \$	Catalog Number	Price U.S. \$	Catalog Number	Price U.S. \$	
IEC/CE/UL/CSA 25/25										
70	350 – 700	JGE2070FAG		JGE3070FAG		—		JGE4070FAG		—
90	450 – 900	JGE2090FAG		JGE3090FAG		—		JGE4090FAG		—
100	500 – 1000	JGE2100FAG		JGE3100FAG		JGE3100AAG		JGE4100FAG		JGE4100AAG
125	625 – 1250	JGE2125FAG		JGE3125FAG		JGE3125AAG		JGE4125FAG		JGE4125AAG
150	750 – 1550	JGE2150FAG		JGE3150FAG		—		JGE4150FAG		—
160	800 – 1600	—		—		JGE3160AAG		—		JGE4160AAG
175	875 – 1750	JGE2175FAG		JGE3175FAG		—		JGE4175FAG		—
200	1000 – 2000	JGE2200FAG		JGE3200FAG		JGE3200AAG		JGE4200FAG		JGE4200AAG
225	1125 – 2250	JGE2225FAG		JGE3225FAG		—		JGE4225FAG		—
250	1250 – 2500	JGE2250FAG		JGE3250FAG		JGE3250AAG		JGE4250FAG		JGE4250AAG
IEC/CE/UL/CSA 40/35										
70	350 – 700	JGS2070FAG		JGS3070FAG		—		JGS4070FAG		—
90	450 – 900	JGS2090FAG		JGS3090FAG		—		JGS4090FAG		—
100	500 – 1000	JGS2100FAG		JGS3100FAG		JGS3100AAG		JGS4100FAG		JGS4100AAG
125	625 – 1250	JGS2125FAG		JGS3125FAG		JGS3125AAG		JGS4125FAG		JGS4125AAG
150	750 – 1550	JGS2150FAG		JGS3150FAG		—		JGS4150FAG		—
160	800 – 1600	—		—		JGS3160AAG		—		JGS4160AAG
175	875 – 1750	JGS2175FAG		JGS3175FAG		—		JGS4175FAG		—
200	1000 – 2000	JGS2200FAG		JGS3200FAG		JGS3200AAG		JGS4200FAG		JGS4200AAG
225	1125 – 2250	JGS2225FAG		JGS3225FAG		—		JGS4225FAG		—
250	1250 – 2500	JGS2250FAG		JGS3250FAG		JGS3250AAG		JGS4250FAG		JGS4250AAG
IEC/CE/UL/CSA 70/65										
70	350 – 700	JGH2070FAG		JGH3070FAG		—		JGH4070FAG		—
90	450 – 900	JGH2090FAG		JGH3090FAG		—		JGH4090FAG		—
100	500 – 1000	JGH2100FAG		JGH3100FAG		JGH3100AAG		JGH4100FAG		JGH4100AAG
125	625 – 1250	JGH2125FAG		JGH3125FAG		JGH3125AAG		JGH4125FAG		JGH4125AAG
150	750 – 1550	JGH2150FAG		JGH3150FAG		—		JGH4150FAG		—
160	800 – 1600	—		—		JGH3160AAG		—		JGH4160AAG
175	875 – 1750	JGH2175FAG		JGH3175FAG		—		JGH4175FAG		—
200	1000 – 2000	JGH2200FAG		JGH3200FAG		JGH3200AAG		JGH4200FAG		JGH4200AAG
225	1125 – 2250	JGH2225FAG		JGH3225FAG		—		JGH4225FAG		—
250	1250 – 2500	JGH2250FAG		JGH3250FAG		JGH3250AAG		JGH4250FAG		JGH4250AAG
IEC/CE/UL/CSA 100/100										
70	350 – 700	—		JGC3070FAG		—		JGC4070FAG		—
80	400 – 800	—		—		JGC3080AAG		—		JGC4080AAG
90	450 – 900	—		JGC3090FAG		—		JGC4090FAG		—
100	500 – 1000	—		JGC3100FAG		JGC3100AAG		JGC4100FAG		JGC4100AAG
125	625 – 1250	—		JGC3125FAG		JGC3125AAG		JGC4125FAG		JGC4125AAG
150	750 – 1550	—		JGC3150FAG		—		JGC4150FAG		—
160	800 – 1600	—		—		JGC3160AAG		—		JGC4160AAG
175	875 – 1750	—		JGC3175FAG		—		JGC4175FAG		—
200	1000 – 2000	—		JGC3200FAG		JGC3200AAG		JGC4200FAG		JGC4200AAG
225	1125 – 2250	—		JGC3225FAG		—		JGC4225FAG		—
250	1250 – 2500	—		JGC3250FAG		JGC3250AAG		JGC4250FAG		JGC4250AAG
IEC/CE/UL/CSA 150/150										
70	350 – 700	—		JGU3070FAG		—		JGU4070FAG		—
80	400 – 800	—		—		JGU3080AAG		—		JGU4080AAG
90	450 – 900	—		JGU3090FAG		—		JGU4090FAG		—
100	500 – 1000	—		JGU3100FAG		JGU3100AAG		JGU4100FAG		JGU4100AAG
125	625 – 1250	—		JGU3125FAG		JGU3125AAG		JGU4125FAG		JGU4125AAG
150	750 – 1550	—		JGU3150FAG		—		JGU4150FAG		—
160	800 – 1600	—		—		JGU3160AAG		—		JGU4160AAG
175	875 – 1750	—		JGU3175FAG		—		JGU4175FAG		—
200	1000 – 2000	—		JGU3200FAG		JGU3200AAG		JGU4200FAG		JGU4200AAG
225	1125 – 2250	—		JGU3225FAG		—		JGU4225FAG		—
250	1250 – 2500	—		JGU3250FAG		JGU3250AAG		JGU4250FAG		JGU4250AAG
IEC/CE/UL/CSA 200/200										
70	350 – 700	—		JGX3070FAG		—		JGX4070FAG		—
80	400 – 800	—		—		JGX3080AAG		—		JGX4080AAG
90	450 – 900	—		JGX3090FAG		—		JGX4090FAG		—
100	500 – 1000	—		JGX3100FAG		JGX3100AAG		JGX4100FAG		JGX4100AAG
125	625 – 1250	—		JGX3125FAG		JGX3125AAG		JGX4125FAG		JGX4125AAG
150	750 – 1550	—		JGX3150FAG		—		JGX4150FAG		—
160	800 – 1600	—		—		JGX3160AAG		—		JGX4160AAG
175	875 – 1750	—		JGX3175FAG		—		JGX4175FAG		—
200	1000 – 2000	—		JGX3200FAG		JGX3200AAG		JGX4200FAG		JGX4200AAG
225	1125 – 2250	—		JGX3225FAG		—		JGX4225FAG		—
250	1250 – 2500	—		JGX3250FAG		JGX3250AAG		JGX4250FAG		JGX4250AAG

① Change the fourth digit to 8 for adjustable 0 – 60% neutral protection, 9 for 0 – 100% neutral protection. Neutral is on LH side.

② IEC-EN 60947-2 only. Adjustment is .8 and 1.0.

Discount Symbol **CB-2**

Product Selection

Table 12-27. Thermal-Magnetic Trip Unit

Ampere Rating	Range	Catalog Number	Price U.S. \$	Catalog Number	Price U.S. \$	Catalog Number	Price U.S. \$	Range	Catalog Number	Price U.S. \$	Catalog Number	Price U.S. \$
70	350 – 700	JT2070FA		JT3070FA		—		—	JT4070FA		—	
80	400 – 800	—		—		JT3080AA ①		64 – 100	—		JT4080AA ①	
90	450 – 900	JT2090FA		JT3090FA		—		—	JT4090FA		—	
100	500 – 1000	JT2100FA		JT3100FA		JT3100AA ①		80 – 100	JT4100FA		JT4100AA ①	
125	625 – 1250	JT2125FA		JT3125FA		JT3125AA ①		100 – 125	JT4125FA		JT4125AA ①	
150	750 – 1500	JT2150FA		JT3150FA		—		—	JT4150FA		—	
160	800 – 1600	—		—		JT3160AA ①		128 – 160	—		JT4160AA ①	
175	875 – 1750	JT2175FA		JT3175FA		—		—	JT4175FA		—	
200	1000 – 2000	JT2200FA		JT3200FA		JT3200AA ①		160 – 200	JT4200FA		JT4200AA ①	
225	1125 – 2250	JT2225FA		JT3225FA		—		—	JT4225FA		—	
250	1250 – 2500	JT2250FA		JT3250FA		JT3250AA ①		200 – 250	JT4250FA		JT4250AA ①	

① Adjustable thermal trip units are typically used in IEC markets and are not UL or CSA listed.

Table 12-28. Molded Case Switches

Catalog Number	Price U.S. \$
JGK3250KSK JGK7250KSG	

Note: Molded case switches will trip above 2500 amperes.

Table 12-29. Components — Line and Load Terminal

Maximum Breaker Amperes	Terminal Body Material	Wire Type	AWG Wire Range No. Conductors	Metric Wire Range mm ²	Catalog Number	Price U.S. \$
Standard Cu/Al Pressure Terminals						
250	Aluminum	Cu/Al	4 – 350 kcmil	25 – 185	TA250FJ	
250	Stainless Steel	Cu	4 – 350 kcmil	25 – 185	T250FJ ②	

② Standard line and load terminals.

Product Selection

Table 12-30. Components — Frame — IC Rating at 415/480 Volts

Maximum Amperes	2-Pole		3-Pole		4-Pole 0%	
	Catalog Number	Price U.S. \$	Catalog Number	Price U.S. \$	Catalog Number	Price U.S. \$
25/25						
250	JGE2250NN		JGE3250NN		JGE4250NN	
40/35						
250	JGS2250NN		JGS3250NN		JGS4250NN	
70/65						
250	JGH2250NN		JGH3250NN		JGH4250NN	
100/100						
250	—		JGC3250NN		JGC4250NN	
150/150						
250	—		JGU3250NN		JGU4250NN	
200/200						
250	—		JGX3250NN		JGX4250NN	
25/25 ①						
250	—		JGE3250NNC		—	
40/35 ①						
250	—		JGS3250NNC		—	
70/65 ①						
250	—		JGH3250NNC		—	

① Components — 100% rated frame. To be used with electronic trip units only.

Table 12-31. Plug-in Test Kit

Voltage Rating	Catalog Number	Price U.S. \$
120 Vac	MTST120V	
230 Vac	MTST230V	

Table 12-32. Breaker Mount Ammeter

Description	Catalog Number	Price U.S. \$
Breaker Mount Ammeter	DIGVIEW	

Note: Use on electronic trip only.

Table 12-33. JG Electronic Trip Units

Ampere Rating	LS	Price U.S. \$	LSI	Price U.S. \$	LSG	Price U.S. \$	LSIG	Price U.S. \$	Neutral CT for LSG & LSIG ②	Price U.S. \$
3-Pole										
50	JT305033		JT305032		JT305035		JT305036		JGFCT050	
100	JT310033		JT310032		JT310035		JT310036		JGFCT100	
160	JT316033		JT316032		JT316035		JT316036		JGFCT160	
250	JT325033		JT325032		JT325035		JT325036		JGFCT250	
4-Pole ③										
50	JT405033		JT405032		JT405035		JT405036		—	
100	JT410033		JT410032		JT410035		JT410036		—	
160	JT416033		JT416032		JT416035		JT416036		—	
250	JT425033		JT425032		JT425035		JT425036		—	

② For use on a 3-pole breaker used in a 4-wire system if ground fault protection for the neutral is required.

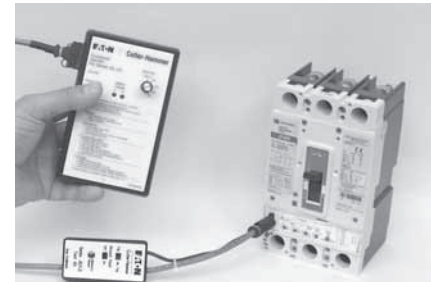
③ Neutral protection 4 = 0%, 6 = 60%, 7 = 100% electronic trip unit neutral protection is not adjustable.

Note: Long time pickup — no rating plug.
 250 Ampere Settings — 250, 225, 200, 175, 160, 150, 125, 100.
 160 Ampere Settings — 160, 150, 125, 110, 100, 90, 80, 63.
 100 Ampere Settings — 100, 90, 80, 70, 63, 50, 45, 40.
 50 Ampere Settings — 50, 45, 40, 32, 30, 25, 20.

Note: Adjustable long time delay — 2 – 24 seconds at 6 x I_r.
 Adjustable short time delay — Inst., 120, 300 ms



Digitrip 310+ Test Kit



Digitrip 310+ Test Kit Shown with JG MCCB



JG Digitrip 310+ Electronic Trip Unit



Ammeter

JG-Frame

Table 12-34. Complete Breaker with Electronic Trip Units

Ampere Rating	LS	Price U.S. \$	LSI	Price U.S. \$	LSG	Price U.S. \$	LSIG	Price U.S. \$	Neutral CT for LSG & LSIG ①	Price U.S. \$
IEC/UL/CSA 25/25 — 3-Pole										
50	JGE305033G		JGE305032G		JGE305035G		JGE305036G		JGFCT050	
100	JGE310033G		JGE310032G		JGE310035G		JGE310036G		JGFCT100	
160	JGE316033G		JGE316032G		JGE316035G		JGE316036G		JGFCT160	
250	JGE325033G		JGE325032G		JGE325035G		JGE325036G		JGFCT250	
IEC/UL/CSA 25/25 — 4-Pole ②										
50	JGE405033G		JGE405032G		JGE405035G		JGE405036G		—	
100	JGE410033G		JGE410032G		JGE410035G		JGE410036G		—	
160	JGE416033G		JGE416032G		JGE416035G		JGE416036G		—	
250	JGE425033G		JGE425032G		JGE425035G		JGE425036G		—	
IEC/UL/CSA 40/35 — 3-Pole										
50	JGS305033G		JGS305032G		JGS305035G		JGS305036G		JGFCT050	
100	JGS310033G		JGS310032G		JGS310035G		JGS310036G		JGFCT100	
160	JGS316033G		JGS316032G		JGS316035G		JGS316036G		JGFCT160	
250	JGS325033G		JGS325032G		JGS325035G		JGS325036G		JGFCT250	
IEC/UL/CSA 40/35 — 4-Pole ②										
50	JGS405033G		JGS405032G		JGS405035G		JGS405036G		—	
100	JGS410033G		JGS410032G		JGS410035G		JGS410036G		—	
160	JGS416033G		JGS416032G		JGS416035G		JGS416036G		—	
250	JGS425033G		JGS425032G		JGS425035G		JGS425036G		—	
IEC/UL/CSA 70/65 — 3-Pole										
50	JGH305033G		JGH305032G		JGH305035G		JGH305036G		JGFCT050	
100	JGH310033G		JGH310032G		JGH310035G		JGH310036G		JGFCT100	
160	JGH316033G		JGH316032G		JGH316035G		JGH316036G		JGFCT160	
250	JGH325033G		JGH325032G		JGH325035G		JGH325036G		JGFCT250	
IEC/UL/CSA 70/65 — 4-Pole ②										
50	JGH405033G		JGH405032G		JGH405035G		JGH405036G		—	
100	JGH410033G		JGH410032G		JGH410035G		JGH410036G		—	
160	JGH416033G		JGH416032G		JGH416035G		JGH416036G		—	
250	JGH425033G		JGH425032G		JGH425035G		JGH425036G		—	
IEC/UL/CSA 100/100 — 3-Pole										
50	JGC305033G		JGC305032G		JGC305035G		JGC305036G		JGFCT050	
100	JGC310033G		JGC310032G		JGC310035G		JGC310036G		JGFCT100	
160	JGC316033G		JGC316032G		JGC316035G		JGC316036G		JGFCT160	
250	JGC325033G		JGC325032G		JGC325035G		JGC325036G		JGFCT250	
IEC/UL/CSA 100/100 — 4-Pole ②										
50	JGC405033G		JGC405032G		JGC405035G		JGC405036G		—	
100	JGC410033G		JGC410032G		JGC410035G		JGC410036G		—	
160	JGC416033G		JGC416032G		JGC416035G		JGC416036G		—	
250	JGC435033G		JGC425032G		JGC425035G		JGC425036G		—	
IEC/UL/CSA 150/150 — 3-Pole										
50	JGU305033G		JGU305032G		JGU305035G		JGU305036G		JGFCT050	
100	JGU310033G		JGU310032G		JGU310035G		JGU310036G		JGFCT100	
160	JGU316033G		JGU316032G		JGU316035G		JGU316036G		JGFCT160	
250	JGU335033G		JGU325032G		JGU325035G		JGU325036G		JGFCT250	
IEC/UL/CSA 150/150 — 4-Pole ②										
50	JGU405033G		JGU405032G		JGU405035G		JGU405036G		—	
100	JGU410033G		JGU410032G		JGU410035G		JGU410036G		—	
160	JGU416033G		JGU416032G		JGU416035G		JGU416036G		—	
250	JGU435033G		JGU425032G		JGU425035G		JGU425036G		—	
IEC/UL/CSA 200/200 — 3-Pole										
50	JGX305033G		JGX305032G		JGX305035G		JGX305036G		JGFCT050	
100	JGX310033G		JGX310032G		JGX310035G		JGX310036G		JGFCT100	
160	JGX316033G		JGX316032G		JGX316035G		JGX316036G		JGFCT160	
250	JGX325033G		JGX325032G		JGX325035G		JGX325036G		JGFCT250	
IEC/UL/CSA 200/200 — 4-Pole ②										
50	JGX405033G		JGX405032G		JGX405035G		JGX405036G		—	
100	JGX410033G		JGX410032G		JGX410035G		JGX410036G		—	
160	JGX416033G		JGX416032G		JGX416035G		JGX416036G		—	
250	JGX425033G		JGX425032G		JGX425035G		JGX425036G		—	

① Required for 4-wire systems if neutral protection is required.

② Neutral protection 4 = 0%, 6 = 60%, 7 = 100% electronic trip unit neutral protection is not adjustable.

JG-Frame

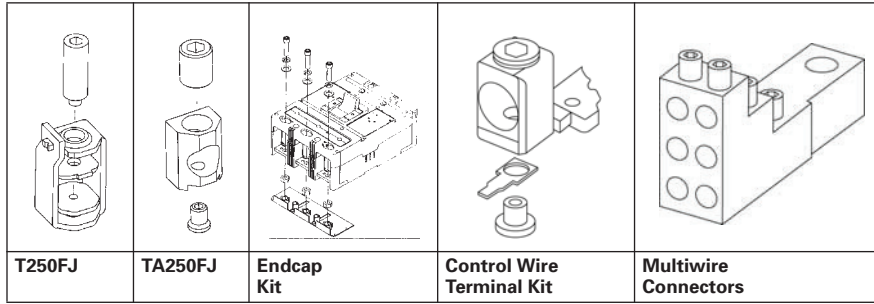
Table 12-35. JG 100% Rated Circuit Breaker

Ampere Rating	LS		LSI		LSG		LSIG		Neutral CT for LSG & LSIG ①	
	Catalog Number	Price U.S. \$	Catalog Number	Price U.S. \$	Catalog Number	Price U.S. \$	Catalog Number	Price U.S. \$	Catalog Number	Price U.S. \$
IEC/UL/CSA 25/25										
50	JGE305033GC		JGE305032GC		JGE305035GC		JGE305036GC		JGFCT050	
100	JGE310033GC		JGE310032GC		JGE310035GC		JGE310036GC		JGFCT100	
160	JGE316033GC		JGE316032GC		JGE316035GC		JGE316036GC		JGFCT160	
250	JGE325033GC		JGE325032GC		JGE325035GC		JGE325036GC		JGFCT250	
IEC/UL/CSA 40/35										
50	JGS305033GC		JGS305032GC		JGS305035GC		JGS305036GC		JGFCT050	
100	JGS310033GC		JGS310032GC		JGS310035GC		JGS310036GC		JGFCT100	
160	JGS316033GC		JGS316032GC		JGS316035GC		JGS316036GC		JGFCT160	
250	JGS325033GC		JGS325032GC		JGS325035GC		JGS325036GC		JGFCT250	
IEC/UL/CSA 70/65										
50	JGH305033GC		JGH305032GC		JGH305035GC		JGH305036GC		JGFCT050	
100	JGH310033GC		JGH310032GC		JGH310035GC		JGH310036GC		JGFCT100	
160	JGH316033GC		JGH316032GC		JGH316035GC		JGH316036GC		JGFCT160	
250	JGH325033GC		JGH325032GC		JGH325035GC		JGH325036GC		JGFCT250	

① Required for 4-wire systems if neutral protection is required.

JG-Frame

Selection Guide and Ordering Information



Line and Load Terminals

JG-Frame circuit breakers include Cu/Al terminals T250FJ as standard. When optional copper only terminals are required, order by catalog number.

Table 12-36. Line and Load Terminals

Maximum Breaker Amps	Terminal Body Material	Wire Type	Metric Wire Range mm ²	AWG Wire Range/ Number of Conductors	Catalog Number	Price U.S. \$
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Standard Pressure Type Terminals

250	Stainless Steel	Cu	25 – 185	#4 – 350 (1)	T250FJ ①②	
250	Aluminum	Cu/Al	25 – 185	#4 – 350 (1)	TA250FJ ①	

- ① Individually packed.
- ② Standard line and load.
- ③ Contact factory for availability.

Endcap Kits

Endcap kits are used on J250-Frame breaker line side to connect bus bar or similar electrical connections. Includes hardware.

Table 12-37. Kit Catalog Number

Number of Poles	Catalog Number		Price U.S. \$
	Metric	Imperial	
3	FJ3RTWK	FJ3RTDK	
4	FJ4RTWK	FJ4RTDK	

Control Wire Terminal Kit

For use with aluminum or copper terminals only.

Table 12-38. Control Wire Terminal Kit

Control Wire Terminal Kit	Catalog Number	Price U.S. \$
Package of 14 — Priced Individually	FJCWTK	

Multiwire Connectors

Field-installed multiwire connectors for the load side (OFF) end terminals. They are used to distribute the load from the circuit breaker to multiple devices without the use of separate distribution terminal blocks.

Multiwire lug kits include terminal shield, mounting hardware, insulators and tin-plated aluminum connectors to replace three mechanical load lugs. UL listed as used on the load side (OFF) end.

Table 12-39. JG-Frame Multiwire Connectors Ordering Information (Package of 3)

Max. Amps	Wires per Terminal	Wire Size Range AWG Cu	Kit Catalog Number	Price U.S. \$
250	3	14 – 2	3TA250FJ3	
250	6	14 – 6	3TA250FJ6	

Base Mounting Hardware

Base mounting hardware is included with a circuit breaker or molded case switch. (Included with breaker.)

Table 12-40. Terminal Shields IP30

Location	Number of Poles	Catalog Number	Price U.S. \$
Line or Load	2, 3, 4	FJTS3K FJTS4K	

Table 12-41. Interphase Barriers

Package of 2	Number of Poles	Catalog Number	Price U.S. \$
3		FJIPBK	
4		FJIPBK4	

Allowable Accessory Combinations

Different combinations of accessories can be supplied, depending on the types of accessories and the number of poles in the circuit breaker.

Table 12-42. Accessories

Description	Reference Page	2-, 3-Pole			4-Pole			
		Left	Center	Right	Left	Center	Right	Neu.
Internal Accessories (Only One Internal Accessory Per Pole)								
Alarm Lockout (Make/Break)	12-65			■			■	
Auxiliary Switch (1A, 1B)	12-65			■			■	
Auxiliary Switch (2A, 2B)	12-65			■			■	
Auxiliary Switch and Alarm Switch Combination	12-65			■			■	
Shunt Trip — Standard	12-65	■			■			
Undervoltage Release Mechanism	12-65	■			■			
External Accessories								
End Cap Kit	12-28		●				●	
Control Wire Terminal Kit	12-28		●				●	
Multiwire Connectors	12-28		●				●	
Base Mounting Hardware	12-28		●				●	
Interphase Barriers	12-28		●				●	
Padlockable Handle Block	12-64		■			■		
Padlockable Handle Lock Hasp	12-64	□			□			□
Key Interlock Kit	12-64	□			□			□
Sliding Bar Interlock — Requires Two Breakers	12-64		●					
Electrical Operator	12-64		●				●	
Plug-in Adapters	12-66		●				●	
Handle Mechanisms	12-67		●				●	
Earth Leakage/Ground Fault Protector	12-62		●				●	
Drawout Cassette	12-66		●				●	
Digitrip 310+ Test Kit	12-25		●				●	
Ammeter/Cause of Trip Display	12-25		●				●	
Modifications (Refer to Eaton)								
Moisture Fungus Treatment	12-73		●				●	
Freeze-Tested Circuit Breakers	—		●				●	
Marine/Naval Application, UL Supplement SA and SB	①		●				●	

■ Applicable in indicated pole position □ May be mounted on left or right pole — not both ● Accessory available/Modification available

① Contact Eaton

LG-Frame

LG-Frame



Typical LG-Frame Circuit Breaker

Product Description

- LG breaker is HACR rated.

Interrupting Capacity Ratings

Table 12-43. UL 489/IEC 60947-2 Interrupting Capacity Ratings

Circuit Breaker Type	Number of Poles	Interrupting Capacity (kA rms Symmetrical Amperes) (kA)									
		Volts ac (50/60 Hz)								Volts dc ^①	
		240 – 240		380 – 415		480	600	690		250 ^{②③}	
		Icu	Ics	Icu	Ics			Icu	Ics	Icu	Ics
LGE630	3, 4	65	65	35	35	35	18	12	6	22	22
LGS630	3, 4	85	85	50	50	50	25	20	10	22	22
LGH630	3, 4	100	100	70	70	65	35	25	13	42	42
LGC630	3, 4	200	200	100	100	100	50	30	15	42	42
LGU630	3, 4	200	200	150	150	150	65	35	18	50	50
LGX630	3, 4	200 ^⑤	200	200	200	200	65	35	18	50	50

^① dc rating apply to substantially non-inductive circuits.

^② 2-pole circuit breaker, or two poles of 3-pole circuits.

^③ Time constant is 3 milliseconds minimum at 10 kA and 8 milliseconds minimum at – kA.

^④ 3-poles in series. 750 Vdc ratings available (4-poles in series, not UL listed). Contact Eaton.

^⑤ IEC rating is 300 kA @ 240 Vac.

Dimensions/Weights

Table 12-44. Dimensions in Inches (mm)

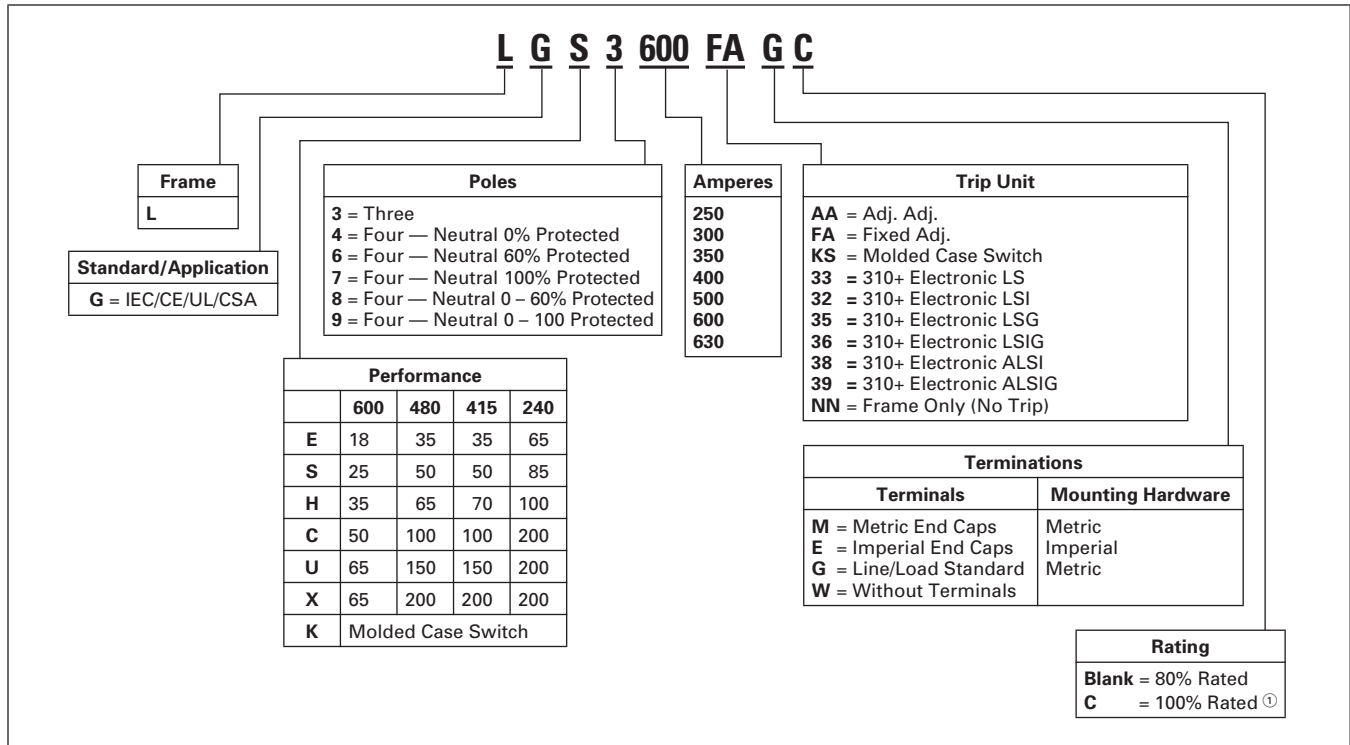
Number of Poles	Width	Height	Depth
2/3	5.48 (139.2)	10.13 (257.3)	4.09 (103.9)
4	7.22 (183.4)	10.13 (257.3)	4.09 (103.9)

Table 12-45. Weight in Lbs (kg)

Breaker Type	Number of Poles	
	2/3	4
LGE, LGS, LGH, LGC, LGU, LGX	16 (7.3)	20 (9.1)

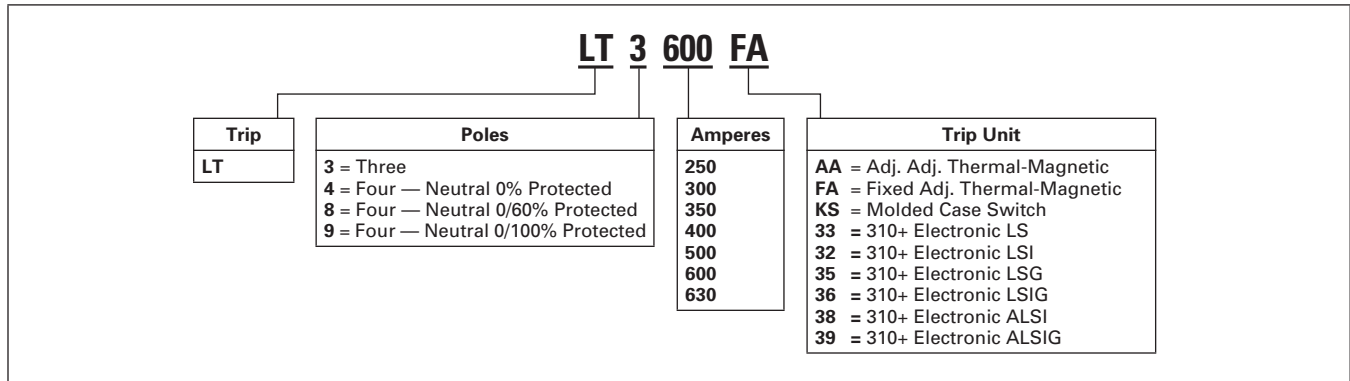
Product Selection

Table 12-46. Main Catalog Numbering System



① 100% rating only available on breakers with electronic trip unit.

Table 12-47. Trip Unit Catalog Numbering System



LG-Frame, 630 Amperes

Table 12-48. Complete Breaker (Includes Frame, Trip Unit, Standard Terminals and Mounting Hardware) ①②

Ampere Rating	3-Pole ③		4-Pole (0%) ④		3-Pole ③		4-Pole (0%) ④	
	Fixed Thermal Adj. Magnetic	Adj. Thermal Adj. Magnetic ⑤⑥	Fixed Thermal Adj. Magnetic	Adj. Thermal Adj. Magnetic ⑤⑥	Fixed Thermal Adj. Magnetic	Adj. Thermal Adj. Magnetic ⑤⑥	Fixed Thermal Adj. Magnetic	Adj. Thermal Adj. Magnetic ⑤⑥
IC Rating: 35 kAIC at 415 and 480 Vac					IC Rating: 50 kAIC at 415 and 480 Vac			
250	LGE3250FAG	LGE3250AAG	LGE4250FAG	LGE4250AAG	LGS3250FAG	LGS3250AAG	LGS4250FAG	LGS4250AAG
300	LGH3300FAG	—	LGE4300FAG	—	LGS3300FAG	—	LGS4350FAG	—
320	—	LGE3320AAG	—	LGE4320AAG	—	LGS3320AAG	—	LGS4320AAG
350	LGE3350FAG	—	LGE4350FAG	—	LGS3350FAG	—	LGS4350FAG	—
400	LGE3400FAG	LGE3400AAG	LGE4400FAG	LGE4400AAG	LGS3400FAG	LGS3400AAG	LGS4400FAG	LGS4400AAG
500	LGE3500FAG	LGE3500AAG	LGE4500FAG	LGE4500AAG	LGS3500FAG	LGS3500AAG	LGS4500FAG	LGS4500AAG
600	LGE3600FAG	—	LGE4600FAG	—	LGS3600FAG	—	LGS4600FAG	—
630 ⑤	—	LGE3630AAG	—	LGE4630AAG	—	LGS3630AAG	—	LGS4630AAG
IC Rating: 70 kAIC at 415 Vac, 65 kAIC at 480 Vac					IC Rating: 100 kAIC at 415 and 480 Vac			
250	LGH3250FAG	LGH3250AAG	LGH4250FAG	LGH4250AAG	LGC3250FAG	LGC3250AAG	LGC4250FAG	LGC4250AAG
300	LGH3300FAG	—	LGH4300FAG	—	LGC3300FAG	—	LGC4300FAG	—
320	—	LGH3320AAG	—	LGH4320AAG	—	LGC3320AAG	—	LGC4320AAG
350	LGH3350FAG	—	LGH4350FAG	—	LGC3350FAG	—	LGC4350FAG	—
400	LGH3400FAG	LGH3400AAG	LGH4400FAG	LGH4400AAG	LGC3400FAG	LGC3400AAG	LGC4400FAG	LGC4400AAG
500	LGH3500FAG	LGH3500AAG	LGH4500FAG	LGH4500AAG	LGC3500FAG	LGC3500AAG	LGC4500FAG	LGC4500AAG
600	LGH3600FAG	—	LGH4600FAG	—	LGC3600FAG	—	LGC4600FAG	—
630 ⑤	—	LGH3630AAG	—	LGH4630AAG	—	LGC3630AAG	—	LGC4630AAG
IC Rating: 150 kAIC at 415 and 480 Vac					IC Rating: 200 kAIC at 415 and 480 Vac			
250	LGU3250FAG	LGU3250AAG	LGU4250FAG	LGU4250AAG	LGX3250FAG	LGX3250AAG	LGX4250FAG	LGX4250AAG
300	LGU3300FAG	—	LGU4300FAG	—	LGX3300FAG	—	LGX4300FAG	—
320	—	LGU3320AAG	—	LGU4320AAG	—	LGX3320AAG	—	LGX4320AAG
350	LGU3350FAG	—	LGU4350FAG	—	LGX3350FAG	—	LGX4350FAG	—
400	LGU3400FAG	LGU3400AAG	LGU4400FAG	LGU4400AAG	LGX3400FAG	LGX3400AAG	LGX4400FAG	LGX4400AAG
500	LGU3500FAG	LGU3500AAG	LGU4500FAG	LGU4500AAG	LGX3500FAG	LGX3500AAG	LGX4500FAG	LGX4500AAG
600	LGU3600FAG	—	LGU4600FAG	—	LGX3600FAG	—	LGX4600FAG	—
630 ⑤	—	LGU3630AAG	—	LGU4630AAG	—	LGX3630AAG	—	LGX4630AAG

- ① Replace suffix "G" with "W" for no line and load terminals.
- ② See Table 12-49 below for prices.
- ③ For 2-pole applications, use two outer poles.
- ④ Neutral protection is indicated by the fourth character: 4 = 0%, 7 = 100%, 8 = adjustable 0 – 60% and 9 = 0 – 100%. Neutral is on LH side.
- ⑤ 320/630 amperes is not a UL or CSA listed rating. 600 amperes is the maximum UL and CSA rating for the LG.
- ⑥ Adjustable thermal units are typically used in IEC markets and are not UL or CSA listed.

Table 12-49. Complete Breaker Prices (Includes Frame, Trip Unit, Standard Terminals and Mounting Hardware)

Catalog Number	Price U.S. \$	Catalog Number	Price U.S. \$	Catalog Number	Price U.S. \$	Catalog Number	Price U.S. \$
LGE3250FAG		LGE3250AAG		LGE4250FAG		LGE4250AAG	
LGE3300FAG		LGE3320AAG		LGE4300FAG		LGE4320AAG	
LGE3350FAG		LGE3400AAG		LGE4350FAG		LGE4400AAG	
LGE3500FAG		LGE3500AAG		LGE4500FAG		LGE4500AAG	
LGE3600FAG		LGE3630AAG		LGE4600FAG		LGE4630AAG	
LGS3250FAG		LGS3250AAG		LGS4250FAG		LGS4250AAG	
LGS3300FAG		LGS3320AAG		LGS4300FAG		LGS4320AAG	
LGS3350FAG		LGS3400AAG		LGS4350FAG		LGS4400AAG	
LGS3500FAG		LGS3500AAG		LGS4500FAG		LGS4500AAG	
LGS3600FAG		LGS3630AAG		LGS4600FAG		LGS4630AAG	
LGH3250FAG		LGH3250AAG		LGH4250FAG		LGH4250AAG	
LGH3300FAG		LGH3320AAG		LGH4300FAG		LGH4320AAG	
LGH3350FAG		LGH3400AAG		LGH4350FAG		LGH4400AAG	
LGH3500FAG		LGH3500AAG		LGH4500FAG		LGH4500AAG	
LGH3600FAG		LGH3630AAG		LGH4600FAG		LGH4630AAG	
LGC3250FAG		LGC3250AAG		LGC4250FAG		LGC4250AAG	
LGC3300FAG		LGC3320AAG		LGC4300FAG		LGC4320AAG	
LGC3350FAG		LGC3400AAG		LGC4350FAG		LGC4400AAG	
LGC3500FAG		LGC3500AAG		LGC4500FAG		LGC4500AAG	
LGC3600FAG		LGC3630AAG		LGC4600FAG		LGC4630AAG	
LGU3250FAG		LGU3250AAG		LGU4250FAG		LGU4250AAG	
LGU3300FAG		LGU3320AAG		LGU4300FAG		LGU4320AAG	
LGU3350FAG		LGU3400AAG		LGU4350FAG		LGU4400AAG	
LGU3500FAG		LGU3500AAG		LGU4500FAG		LGU4500AAG	
LGU3600FAG		LGU3630AAG		LGU4600FAG		LGU4630AAG	
LGX3250FAG		LGX3250AAG		LGX4250FAG		LGX4250AAG	
LGX3300FAG		LGX3320AAG		LGX4300FAG		LGX4320AAG	
LGX3350FAG		LGX3400AAG		LGX4350FAG		LGX4400AAG	
LGX3500FAG		LGX3500AAG		LGX4500FAG		LGX4500AAG	
LGX3600FAG		LGX3630AAG		LGX4600FAG		LGX4630AAG	

Discount Symbol **CB-2**

Table 12-50. Thermal-Magnetic Trip Unit

Ampere Rating	3-Pole ①				4-Pole (0%) ②			
	Fixed Thermal/Adj. Magnetic	Price U.S. \$	Adj. Thermal/Adj. Magnetic ③	Price U.S. \$	Fixed Thermal/Adj. Magnetic	Price U.S. \$	Adj. Thermal/Adj. Magnetic ③	Price U.S. \$
250	LT3250FA		LT3250AA		LT4250FA		LT4250AA	
300	LT3300FA		—		LT4300FA		—	
320	—		LT3320AA		—		LT4320AA	
350	LT3350FA		—		LT4350FA		—	
400	LT3400FA		LT3400AA		LT4400FA		LT4400AA	
500	LT3500FA		LT3500AA		LT4500FA		LT4500AA	
600	LT3600FA		—		LT4600FA		—	
630	—		LT3630AA		—		LT4630AA	

① For 2-pole applications, use two outer poles.

② Neutral protection is indicated by the third character: 4 = 0%, 7 = 100%, 8 = adjustable 0 – 60% and 9 = 0 – 100%

③ Adjustable thermal, adjustable magnetic trip units are typically used in IEC markets and are not UL or CSA listed.

Table 12-51. Molded Case Switches

Ampere Rating	Number of Poles	Catalog Number	Price U.S. \$
400	3 ④ 4	LGK3400KSG LGK4400KSG	
630 ⑤	3 ④ 4	LGK3630KSG LGK4630KSG	

④ For 2-pole applications, use two outer poles.

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

Note: Molded case switches will trip above 6300 amperes.

Table 12-52. Breaker Frame Only

Ampere Rating ⑥	IC Rating at 415/480 V	3-Pole ⑦		4-Pole (0%)	
		Catalog Number	Price U.S. \$	Catalog Number	Price U.S. \$
630	35/35	LGE3630NN		LGE4630NN	
630 ⑧	35/35	LGE3630NNWC		—	
630	50/50	LGS3630NN		LGS4630NN	
630 ⑧	50/50	LGS3630NNWC		—	
630	70/65	LGH3630NN		LGH4630NN	
630 ⑧	70/65	LGH3630NNWC		—	
630	100/100	LGC3630NN		LGC4630NN	
630	150/150	LGU3630NN		LGU4630NN	
630	200/200	LGX3630NN		LGX4630NN	

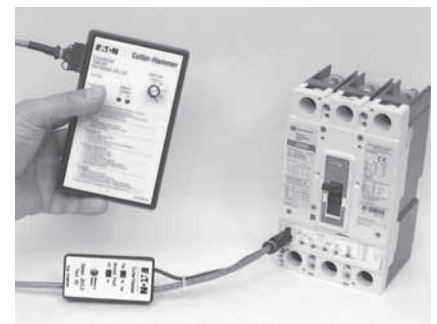
⑥ 630 amperes is not a UL or CSA listed rating. 600 amperes is the maximum UL and CSA rating for the LG.

⑦ For 2-pole applications, use two outer poles.

⑧ 100% rated frame. For use with electronic trip units only.



Digitrip 310+ Test Kit



Digitrip 310+ Test Kit Shown with JG MCCB

Frame Size LG, 630 Amperes (600 Amperes UL, CSA)

Table 12-53. Electronic Trip Units — Digitrip 310+

Ampere Rating	LS		LSI		LSG		LSIG		Neutral CT for LSG & LSIG ①	
	Catalog Number	Price U.S. \$	Catalog Number	Price U.S. \$	Catalog Number	Price U.S. \$	Catalog Number	Price U.S. \$	Catalog Number	Price U.S. \$
3-Pole										
250	LT325033		LT325032		LT325035		LT325036		LGFC250	
400	LT340033		LT340032		LT340035		LT340036		LGFC2400	
600	LT360033		LT360032		LT360035		LT360036		LGFC2600	
630 ②	LT363033		LT363032		LT363035		LT363036		LGFC2600	
4-Pole ③										
250	LT425033		LT425032		LT425035		LT425036		—	
400	LT440033		LT440032		LT440035		LT440036		—	
600	LT460033		LT460032		LT460035		LT460036		—	
630 ②	LT463033		LT463032		LT463035		LT463036		—	

- ① Required for 4-wire systems if neutral protection is desired.
- 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 Neutral protection: 4= 0%, 6 = 60%, 7 = 100%. Electronic trip unit neutral protection is not adjustable.

Note: Long time pickup — no rating plug needed.
 630 Ampere Settings — 630, 600, 500, 400, 350, 315, 300, 250 (315, 630 are IEC ratings only).
 600 Ampere Settings — 600, 500, 450, 400, 350, 315, 300, 250 (315 is IEC rating only).
 400 Ampere Settings — 400, 350, 315, 300, 250, 225, 200, 160 (315 is IEC rating only).
 250 Ampere Settings — 250, 225, 200, 175, 160, 150, 125, 100 (160 is IEC rating only).

Note: Adjustable long time delay — 2 – 24 seconds at $6 \times I_r$.
 Adjustable short time delay — Inst., 120, 300 ms.

Table 12-54. Plug-in Test Kit

Voltage Rating	Catalog Number	Price U.S. \$
120 Vac	MTST120V	
230 Vac	MTST230V	

Note: IL Number is 5721B13.

Table 12-55. Breaker Mount Ammeter

Description	Catalog Number	Price U.S. \$
Breaker Mount Ammeter	DIGIVIEW	

Note: Use on electronic trip only.



LG Digitrip 310+ Electronic Trip Unit



Ammeter

**Table 12-56. IC Rating at 415/480 V — Complete LG Breakers with Electronic Trip Unit
(Includes Frame, Trip Unit, Standard Terminals and Mounting Hardware) ①**

Ampere Rating	LS	Price U.S. \$	LSI	Price U.S. \$	LSG	Price U.S. \$	LSIG	Price U.S. \$	Neutral CT for LSG & LSIG ②	Price U.S. \$
3-Pole ③ — IC Rating: 35 kAIC at 415 and 480 Vac										
250	LGE325033G		LGE325032G		LGE325035G		LGE325036G		LGFACT250	
400	LGE340033G		LGE340032G		LGE340035G		LGE340036G		LGFACT400	
600	LGE360033G		LGE360032G		LGE360035G		LGE360036G		LGFACT600	
630 ④	LGE363033G		LGE363032G		LGE363035G		LGE363036G		LGFACT600	
4-Pole ⑤ — IC Rating: 35 kAIC at 415 and 480 Vac										
250	LGE425033G		LGE425032G		LGE425035G		LGE425036G		—	
400	LGE440033G		LGE440032G		LGE440035G		LGE440036G		—	
600	LGE460033G		LGE460032G		LGE460035G		LGE460036G		—	
630 ④	LGE463033G		LGE463032G		LGE463035G		LGE463036G		—	
3-Pole ③ — IC Rating: 50 kAIC at 415 and 480 Vac										
250	LGS325033G		LGS325032G		LGS325035G		LGS325036G		LGFACT250	
400	LGS340033G		LGS340032G		LGS340035G		LGS340036G		LGFACT400	
600	LGS360033G		LGS360032G		LGS360035G		LGS360036G		LGFACT600	
630 ④	LGS363033G		LGS363032G		LGS363035G		LGS363036G		LGFACT600	
4-Pole ⑤ — IC Rating: 50 kAIC at 415 and 480 Vac										
250	LGS425033G		LGS425032G		LGS425035G		LGS425036G		—	
400	LGS440033G		LGS440032G		LGS440035G		LGS440036G		—	
600	LGS460033G		LGS460032G		LGS460035G		LGS460036G		—	
630 ④	LGS463033G		LGS463032G		LGS463035G		LGS463036G		—	
3-Pole ③ — IC Rating: 70 kAIC at 415 Vac, 65 kAIC at 480 Vac										
250	LGH325033G		LGH325032G		LGH325035G		LGH325036G		LGFACT250	
400	LGH340033G		LGH340032G		LGH340035G		LGH340036G		LGFACT400	
600	LGH360033G		LGH360032G		LGH360035G		LGH360036G		LGFACT600	
630 ④	LGH363033G		LGH363032G		LGH363035G		LGH363036G		LGFACT600	
4-Pole ⑤ — IC Rating: 70 kAIC at 415 Vac, 65 kAIC at 480 Vac										
250	LGH425033G		LGH425032G		LGH425035G		LGH425036G		—	
400	LGH440033G		LGH440032G		LGH440035G		LGH440036G		—	
600	LGH460033G		LGH460032G		LGH460035G		LGH460036G		—	
630 ④	LGH463033G		LGH463032G		LGH463035G		LGH463036G		—	
3-Pole ③ — IC Rating: 100 kAIC at 415 Vac and 480 Vac										
250	LGC325033G		LGC325032G		LGC325035G		LGC325036G		LGFACT250	
400	LGC340033G		LGC340032G		LGC340035G		LGC340036G		LGFACT400	
600	LGC360033G		LGC360032G		LGC360035G		LGC360036G		LGFACT600	
630 ④	LGC363033G		LGC363032G		LGC363035G		LGC363036G		LGFACT600	
4-Pole ⑤ — IC Rating: 100 kAIC at 415 Vac and 480 Vac										
250	LGC425033G		LGC425032G		LGC425035G		LGC425036G		—	
400	LGC440033G		LGC440032G		LGC440035G		LGC440036G		—	
600	LGC460033G		LGC460032G		LGC460035G		LGC460036G		—	
630 ④	LGC463033G		LGC463032G		LGC463035G		LGC463036G		—	
3-Pole ③ — IC Rating: 150 kAIC at 415 Vac and 480 Vac										
250	LGU325033G		LGU325032G		LGU325035G		LGU325036G		LGFACT250	
400	LGU340033G		LGU340032G		LGU340035G		LGU340036G		LGFACT400	
600	LGU360033G		LGU360032G		LGU360035G		LGU360036G		LGFACT600	
630 ④	LGU363033G		LGU363032G		LGU363035G		LGU363036G		LGFACT600	
4-Pole ⑤ — IC Rating: 150 kAIC at 415 Vac and 480 Vac										
250	LGU425033G		LGU425032G		LGU425035G		LGU425036G		—	
400	LGU440033G		LGU440032G		LGU440035G		LGU440036G		—	
600	LGU460033G		LGU460032G		LGU460035G		LGU460036G		—	
630 ④	LGU463033G		LGU463032G		LGU463035G		LGU463036G		—	
3-Pole ③ — IC Rating: 200 kAIC at 415 Vac and 480 Vac										
250	LGX325033G		LGX325032G		LGX325035G		LGX325036G		LGFACT250	
400	LGX340033G		LGX340032G		LGX340035G		LGX340036G		LGFACT400	
600	LGX360033G		LGX360032G		LGX360035G		LGX360036G		LGFACT600	
630 ④	LGX363033G		LGX363032G		LGX363035G		LGX363036G		LGFACT600	
4-Pole ⑤ — IC Rating: 200 kAIC at 415 Vac and 480 Vac										
250	LGX425033G		LGX425032G		LGX425035G		LGX425036G		—	
400	LGX440033G		LGX440032G		LGX440035G		LGX440036G		—	
600	LGX460033G		LGX460032G		LGX460035G		LGX460036G		—	
630 ④	LGX463033G		LGX463032G		LGX463035G		LGX463036G		—	

① Replace suffix "G" with "W" for no line and load terminals.

② Required for 4-wire systems if neutral protection is desired.

③ For 2-pole applications, use two outer poles.

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

⑤ Neutral protection: 4 = 0%, 6 = 60%, 7 = 100%. Electronic trip unit neutral protection is not adjustable.

Frame Size LG, 630 Amperes (600 Amperes UL, CSA)

Table 12-57. LG 100% Rated Electronic Breaker

Ampere Rating	LS		LSI		LSG		LSIG		Neutral CT for LSG & LSIG ②	
	Catalog Number	Price U.S. \$	Catalog Number	Price U.S. \$	Catalog Number	Price U.S. \$	Catalog Number	Price U.S. \$	Catalog Number	Price U.S. \$
IEC/UL/CSA 35 kAIC at 415 and 480 Vac										
250	LGE325033GC		LGE325032GC		LGE325035GC		LGE325036GC		LGFACT250	
400	LGE340033GC		LGE340032GC		LGE340035GC		LGE340036GC		LGFACT400	
600	LGE360033GC		LGE360032GC		LGE360035GC		LGE360036GC		LGFACT600	
630 ①	LGE363033GC		LGE363032GC		LGE363035GC		LGE363036GC		LGFACT600	
IEC/UL/CSA 50 kAIC at 415 and 480 Vac										
250	LGS325033GC		LGS325032GC		LGS325035GC		LGS325036GC		LGFACT250	
400	LGS340033GC		LGS340032GC		LGS340035GC		LGS340036GC		LGFACT400	
600	LGS360033GC		LGS360032GC		LGS360035GC		LGS360036GC		LGFACT600	
630 ①	LGS363033GC		LGS363032GC		LGS363035GC		LGS363036GC		LGFACT600	
IEC/UL/CSA 70 kAIC at 415 and 480 Vac										
250	LGH325033GC		LGH325032GC		LGH325035GC		LGH325036GC		LGFACT250	
400	LGH340033GC		LGH340032GC		LGH340035GC		LGH340036GC		LGFACT400	
600	LGH360033GC		LGH360032GC		LGH360035GC		LGH360036GC		LGFACT600	
630 ①	LGH363033GC		LGH363032GC		LGH363035GC		LGH363036GC		LGFACT600	

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

② Required for 4-wire systems if neutral protection is required.

LG Electronic Breaker with Arcflash Reduction Maintenance System™



LG with Arcflash Reduction Maintenance System

Series G LG circuit breakers are available with the Arcflash Reduction Maintenance System integrated into the electronic trip units helping to improve safety by providing a simple and reliable method to reduce fault clearing time. The Arcflash Reduction Maintenance System unit utilizes a separate analog trip circuit that provides faster interruption times than the standard (digital) “instantaneous” protection. Work locations downstream of a circuit breaker with an Arcflash Reduction Maintenance System unit can have a significantly lower incident energy level, reducing arc flash potential to the system.

Table 12-58. LG Electronic Breaker with Arcflash Reduction Maintenance System

Ampere Rating	Catalog Number					
	ALSI	Price U.S. \$	ALSIG	Price U.S. \$	Neutral CT for LSG & LSIG ③	Price U.S. \$
IEC/UL/CSA 35 kAIC at 415 and 480 Vac						
250	LGE325038G		LGE365039G		LGFACT250	
400	LGE340038G		LGE340039G		LGFACT400	
600	LGE360038G		LGE360039G		LGFACT600	
630	LGE363038G		LGE363039G		LGFACT600	
IEC/UL/CSA 50 kAIC at 415 and 480 Vac						
250	LGS325038G		LGS365039G		LGFACT250	
400	LGS340038G		LGS340039G		LGFACT400	
600	LGS360038G		LGS360039G		LGFACT600	
630	LGS363038G		LGS363039G		LGFACT600	
IEC/UL/CSA 70 kAIC at 415 and 480 Vac						
250	LGH325038G		LGH365039G		LGFACT250	
400	LGH340038G		LGH340039G		LGFACT400	
600	LGH360038G		LGH360039G		LGFACT600	
630	LGH363038G		LGH363039G		LGFACT600	
IEC/UL/CSA 100 kAIC at 415 and 480 Vac						
250	LGC325038G		LGC365039G		LGFACT250	
400	LGC340038G		LGC340039G		LGFACT400	
600	LGC360038G		LGC360039G		LGFACT600	
630	LGC363038G		LGC363039G		LGFACT600	
IEC/UL/CSA 150 kAIC at 415 and 480 Vac						
250	LGU325038G		LGU365039G		LGFACT250	
400	LGU340038G		LGU340039G		LGFACT400	
600	LGU360038G		LGU360039G		LGFACT600	
630	LGU363038G		LGU363039G		LGFACT600	
IEC/UL/CSA 200 kAIC at 415 and 480 Vac						
250	LGX325038G		LGX365039G		LGFACT250	
400	LGX340038G		LGX340039G		LGFACT400	
600	LGX360038G		LGX360039G		LGFACT600	
630	LGX363038G		LGX363039G		LGFACT600	

③ Required for 4-wire systems if neutral protection is required.

Table 12-59. LG Electronic Trip Units with Arcflash Reduction Maintenance System

Ampere Rating	Catalog Number					
	ALSI	Price U.S. \$	ALSIG	Price U.S. \$	Neutral CT for LSG & LSIG ④	Price U.S. \$
250	LT325038		LT325039		LGFACT250	
400	LT340038		LT340039		LGFACT400	
600	LT360038		LT360039		LGFACT600	
630	LT363038		LT363039		LGFACT600	

④ Required for 4-wire systems if neutral protection is required.

Discount Symbol CB-2

Line and Load Terminals

Table 12-60. Line and Load Terminals

Maximum Breaker Amperes	Terminal Body Material	Wire Type	AWG Wire Range/ Number of Conductors	Metric Wire Range (mm ²)	Number of Terminals Included	Catalog Number	Price U.S. \$
400	Aluminum	Cu/Al	500 – 750 (1)	240 – 380 (1)	3	3TA631LK ①	
400	Aluminum	Cu/Al	500 – 750 (1)	240 – 380 (1)	4	4TA631LK ①	
400	Copper	Cu	500 – 750 (1)	240 – 380 (1)	3	3T631LK ①	
400	Copper	Cu	500 – 750 (1)	240 – 380 (1)	4	4T631LK ①	
630	Aluminum	Cu/Al	2 – 500 (2)	35 – 240 (2)	3	3TA632LK ①②	
630	Aluminum	Cu/Al	2 – 500 (2)	35 – 240 (2)	4	4TA632LK ①②	
630	Copper	Cu	2 – 500 (2)	35 – 240 (2)	3	3T632LK ①	
630	Copper	Cu	2 – 500 (2)	35 – 240 (2)	4	4T632LK ①	
400	Aluminum	Cu/Al	2 – 500 (1)	35 – 240 (1)	1	TA350LK ②	
400	Copper	Cu	2 – 500 (1)	35 – 240 (1)	1	T350LK	

① Includes LTS3K (3-pole) or LTS4K (4-pole) terminal covers.

② Standard terminal included with complete breaker.

Table 12-61. Terminal Covers

Description	Catalog Number	Price U.S. \$
3-Pole Terminal Cover ③	LTS3K	
4-Pole Terminal Cover ③	LTS4K	

③ Included in TA631L, T631L, TA632L kits listed above.

Table 12-62. End Cap Kits (MIO Metric Nuts)

Number of Poles	Catalog Number	Price U.S. \$
3	L3RTWK	
4	L4RTWK	

Table 12-63. Control Wire Terminal Kit

Description	Terminal Body Type	Catalog Number	Price U.S. \$
3-Pole Kit	Aluminum	3TA632LKW	
4-Pole Kit	Aluminum	4TA632LKW	
3-Pole Kit	Copper	3T632LKW	
4-Pole Kit	Copper	4T632LKW	

Table 12-64. Terminal Extensions

Number of Poles	Catalog Number	Price U.S. \$
3	LGTEW3	
4	LGTEW4	

Table 12-65. Terminal Spreaders

Number of Poles	Catalog Number	Price U.S. \$
3	LGTES3	
4	LGTES4	

Table 12-66. Handle Extension

Description	Catalog Number	Price U.S. \$
Handle Extension	HEXLG	

Table 12-67. Interphase Barrier

Package of 2	Catalog Number	Price U.S. \$
Interphase Barrier	IPB3	

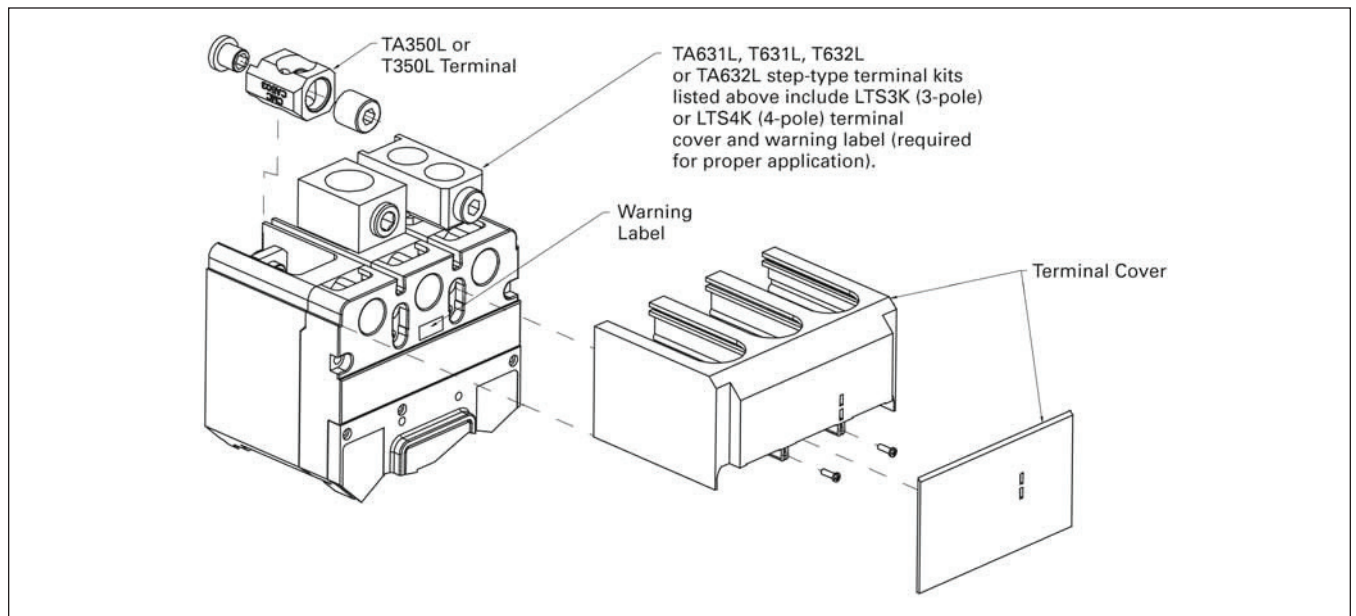


Figure 12-3. Terminals and Terminal Cover for the LG Breaker — Includes LTS3K (3-Pole) or LTS4K (4-Pole) Terminal Covers

Note: Extended terminal covers add 2.13 inches (54.0 mm) to breaker length.

LG-Frame

Allowable Accessory Combinations

Different combinations of accessories can be supplied, depending on the types of accessories and the number of poles in the circuit breaker.

Table 12-68. Accessories

Description	Reference Page	3-Pole			4-Pole			
		Left	Center	Right	Left	Center	Right	Neu.
Internal Accessories (Only One Internal Accessory Per Pole)								
Alarm Lockout (Make/Break)	12-65			■			■	
Auxiliary Switch (1A, 1B)	12-65			■			■	
Auxiliary Switch (2A, 2B)	12-65			■			■	
Auxiliary Switch and Alarm Switch Combination	12-65			■			■	
Shunt Trip — Standard	12-65	■			■			
Undervoltage Release Mechanism	12-65	■			■			
External Accessories								
End Cap Kit	12-37		●			●		
Handle Extension	12-37		●			●		
Terminal Cover	12-37		●			●		
Padlockable Handle Block	12-64		■			■		
Padlockable Handle Lock Hasp	12-64	□		□	□		□	
Key Interlock Kit	12-64	□		□	□		□	
Sliding Bar Interlock — Requires Two Breakers	12-64		●					
Electrical Operator	12-64		●			●		
Plug-in Adapters	12-66		●			●		
Rear Connecting Studs	12-64		●			●		
Handle Mechanisms	12-67		●			●		
Earth Leakage/Ground Fault Protector	12-62		●			●		
Drawout Cassette	12-66		●			●		
Digitrip 310+ Test Kit	12-33		●			●		
Ammeter/Cause of Trip Display	12-33		●			●		
Modifications (Refer to Eaton)								
Moisture Fungus Treatment	12-73		●			●		
Freeze-Tested Circuit Breakers	—		●			●		
Marine/Naval Application, UL Supplement SA and SB	①		●			●		

■ Applicable in indicated pole position

□ May be mounted on left or right pole — not both

● Accessory available/Modification available

① Contact Eaton.

NG-Frame



Typical NG-Frame Circuit Breaker

Technical Data and Specifications

Table 12-69. UL 489/IEC 60947-2 Interrupting Capacity Ratings ①

Circuit Breaker Type	Number of Poles	240 (UL)	Interrupting Capacity (kA Symmetrical Amperes)							
			Volts ac (50/60 Hz)							
			220 – 240		380 – 415		480	600	690	
I _{cu}	I _{cs}	I _{cu}	I _{cs}	I _{cu}	I _{cs}					
NGS ①	2, 3, 4	65	85	85	50	50	50	25	20	10
NGH	2, 3, 4	100	100	100	70	50	65	35	25	13
NGC	2, 3, 4	200	200	100	100	50	100	65	35	18

① 1600 amperes is not a UL or CSA listed rating. 1200 amperes is the maximum UL and CSA rating for NG.

Product Description

- All Cutler-Hammer NG-Frame Circuit Breakers by Eaton Corporation are suitable for reverse feed use.
- All NG-Frame circuit breakers are HACR rated.

NG-Frame

NG-Frame Digitrip Specifications

Table 12-70. Specifications

Trip Unit Type	Digitrip RMS 310	Digitrip OPTIM 550	Digitrip OPTIM 1050	
rms Sensing	Yes	Yes	Yes	
Breaker Type				
Frame	N	N	N	
Ampere Range	400 A – 1200 A	400 A – 1200 A	400 A – 1200 A	
Interrupting Rating at 480 Volts	50, 65, 100 (kA)	50, 65, 100 (kA)	50, 65, 100 (kA)	
Protection				
Ordering Options	LS, LSG	LSI, LSIG	LSI, LSIG, LSI(A)	LSI(A), LISG
Fixed Rated Plug (I_N)	Yes	Yes	Yes	Yes
Overtemperature Trip	Yes	Yes	Yes	Yes
Long Delay Protection (L)				
Adjustable Rating Plug (I_N)	Yes	Yes	No	No
Long Delay Pickup	0.5 – 1.0 (I_N) ^①	0.5 – 1.0 (I_N) ^①	0.4 – 1.0 (I_N)	0.4 – 1.0 (I_N)
Long Delay Time I^2t	12 Seconds	12 Seconds	2 – 24 Seconds	2 – 24 Seconds
Long Delay Time I^4t	No	No	1 – 5 Seconds	1 – 5 Seconds
Long Delay Thermal Memory	Yes	Yes	Yes	Yes
High Load Alarm	No	No	No	0.5 – 1.0 I_r
Short Delay Protection (S)				
Short Delay Pickup	200 – 800% (I_N)	200 – 800% (I_N)	150 – 800% (I_r)	150 – 800% (I_r)
Short Delay Time I^2t	100 ms	No	100 – 500 ms	100 – 500 ms
Short Delay Time Flat	No	Inst – 300 ms	100 – 500 ms	100 – 500 ms
Short Delay Time Zone Selective Interlocking	No	No	Yes	Yes
Instantaneous Protection (I)				
Instantaneous Pickup	No	200 – 800% (I_N)	200 – 800% (I_N)	200 – 800% (I_N)
Discriminator	No	No	Yes	Yes
Instantaneous Override	Yes	Yes	Yes	Yes
Ground Fault Protection (G)				
Ground Fault Alarm	No	No	20 – 100% (I_S)	20 – 100% (I_S)
Ground Fault Pickup	1 – 5 I_g (160 A)	1 – 5 I_g (160 A)	20 – 100% (I_S)	20 – 100% (I_S)
Ground Fault Delay I^2t	No	No	100 – 500 ms	100 – 500 ms
Ground Fault Delay Flat	Inst – 500 ms	Inst – 500 ms	100 – 500 ms	100 – 500 ms
Ground Fault Zone Selective Interlocking	No	No	Yes ^②	Yes
Ground Fault Thermal Memory	Yes	Yes	Yes	Yes
System Diagnostics				
Status LEDs	Yes	Yes	Yes	Yes
Cause of Trip LEDs	No	No	Yes	Yes
Magnitude of Trip Information	No	No	Yes	Yes
Remote Signal Contact — Ground Alarm	Yes ^③	Yes ^③	Yes ^②	Yes
Local Auxiliary and Bell Alarm Contact	Optional	Optional	Optional	Included
System Monitoring				
Digital Display	No	No	Yes ^④	Yes ^④
Current	No	No	Yes	Yes
Power and Energy	No	No	No	Yes
Power Quality — Harmonics	No	No	No	Yes
Power Factor	No	No	No	Yes
Communications				
Cutler-Hammer PowerNet	No	No	No ^⑤	Yes
Testing				
Testing Method	Test Set	OPTIMizer, BIM, Cutler-Hammer PowerNet	OPTIMizer, BIM, Cutler-Hammer PowerNet	

① Adjust by rating plug.

② Zone interlock kit.

③ With separate ground fault alarm unit (GFAU).

④ By OPTIMizer/BIM.

⑤ Eaton's Cutler-Hammer PowerNet kit.

Legend: BIM = Breaker Interface Module

(A) = GF Alarm

 I_S = Sensor Rating I_N = Rating Plug I_r = Long Delay Pickup Setting

NG-Frame

Dimensions/Weights

Table 12-71. Dimensions in Inches (mm)

Number of Poles	Width	Height	Depth
2, 3	8.25 (209.6)	16.00 (406.4)	5.50 (139.7)
4	11.13 (282.6)	16.00 (406.4)	5.50 (139.7)

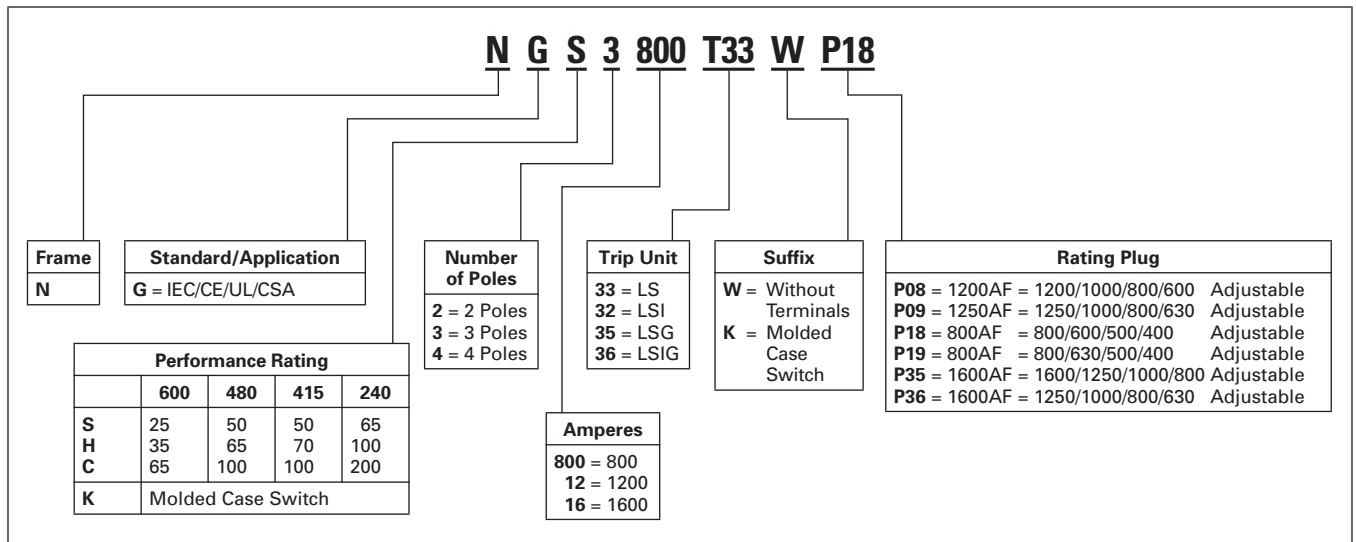
Table 12-72. Approximate Shipping Weight in Lbs. (kg)

Breaker Type	Complete Breaker		
	Number of Poles		
	2	3	4
NGS, NGH, NGC	37 (16.8)	45 (20.4)	58 (26.3)

Product Selection

This information is presented only as an aid to understanding Catalog Numbers. It is not to be used to build Catalog Numbers for circuit breakers or trip units.

Table 12-73. Circuit Breaker/Frame Catalog Numbering System



Frame Size NG, 1200 Amperes 50 kA at 480 Vac or 415 Vac

NG-Frame, 1200 Amperes — Selection Guide and Ordering Information

Table 12-74. Type NGS Standard Interrupting Capacity — U_e Max. 690 Vac, 50 kA I_{cu} at 480 Vac or 415 Vac ①

Maximum Continuous Ampere Rating at 40°C ②③	Number of Poles	Circuit Breaker Frame Including Digitrip RMS 310 Electronic Trip Unit with Adjustable Rating Plugs — Catalog Number ④				Interchangeable Rating Plugs (Order as Individual Component)		Included with Breaker
		LS	LSI	LSG	LSIG	Fixed Rating Plug	Adj. Rating Plug	
Short Time Range Short Time Delay Ground Fault Pickup Ground Fault Delay		2 – 8 x I_n — — —	2 – 8 x I_n 1 – 300 ms — —	2 – 8 x I_n — 200 – 1200 A 1 – 500 ms	2 – 8 x I_n 1 – 300 ms 200 – 1200 A 1 – 500 ms	Ampere Rating	Catalog Number	Adjustable Ampere Settings Catalog Number
800	2-Pole	NGS2800T33WP18	NGS2800T32WP18	NGS2800T35WP18	NGS2800T36WP18	400	8NES400T	400/500/600/800 A8NES800T1
						450	8NES450T	
						500	8NES500T	
						550	8NES550T	
	600	8NES600T	400/500/600/800 A8NES800T1					
	630	8NES630T						
	700	8NES700T						
	800	8NES800T						
	3-Pole	NGS3800T33WP18	NGS3800T32WP18	NGS3800T35WP18	NGS3800T36WP18	400	8NES400T	400/500/600/800 A8NES800T1
450						8NES450T		
500						8NES500T		
550						8NES550T		
600	8NES600T	400/500/600/800 A8NES800T1						
630	8NES630T							
700	8NES700T							
800	8NES800T							
4-Pole ⑤	NGS4800T33WP18	NGS4800T32WP18	—	—	400	8NES400T	400/500/600/800 A8NES800T1	
					450	8NES450T		
					500	8NES500T		
					550	8NES550T		
600	8NES600T	400/500/600/800 A8NES800T1						
630	8NES630T							
700	8NES700T							
800	8NES800T							
1200 ⑥	2-Pole	NGS212T33WP08 ⑥	NGS212T32WP08 ⑥	NGS212T35WP08 ⑥	NGS212T36WP08 ⑥	600	12NES600T	600/800/ 1000/1200 A12NES1200T1
						630	12NES630T	
						700	12NES700T	
						800	12NES800T	
	900	12NES900T	600/800/ 1000/1200 A12NES1200T1					
	1000	12NES1000T						
	1200	12NES1200T						
	600	12NES600T		600/800/ 1000/1200 A12NES1200T1				
	630	12NES630T						
	700	12NES700T						
	800	12NES800T						
	900	12NES900T	600/800/ 1000/1200 A12NES1200T1					
1000	12NES1000T							
1200	12NES1200T							
600	12NES600T	600/800/ 1000/1200 A12NES1200T1						
630	12NES630T							
700	12NES700T							
800	12NES800T							
900	12NES900T	600/800/ 1000/1200 A12NES1200T1						
1000	12NES1000T							
1200	12NES1200T							

① See Table 12-75 on Page 12-43 for prices.

② For ac use only.

③ NG MCCBs are suitable for 40°C or 50°C applications. Order suffix V3 to eliminate standard 40°C labeling.

④ Order terminals separately.

⑤ Unprotected left pole neutral. Insert “E” for 100% neutral or “EH” for 60% neutral between “T33” or “T32” and “W” (e.g., NGS412T32EHWP08). Neutral is on LH side.

⑥ Non-UL listed NG 1250 with 1250 ampere trip unit is also available.

Note: NG MCCBs have metric threading on line and load conductors. Use ND MCCBs if imperial threading is required.

Frame Size NG, 1200 Amperes 50 kA at 480 Vac or 415 Vac

Table 12-75. Type NGS Standard Interrupting Capacity — U_e Max. 690 Vac, 50 kA I_{cu} at 480 Vac or 415 Vac Prices

Catalog Number	Price U.S. \$	Catalog Number	Price U.S. \$	Catalog Number	Price U.S. \$	Catalog Number	Price U.S. \$
A12NES1200T1 A8NES800T1 NGS212T32WP09 NGS212T33WP09 NGS212T35WP09		NGS212T36WP09 NGS2800T32WP19 NGS2800T33WP19 NGS2800T35WP19 NGS2800T36WP19		NGS312T32WP08 NGS312T33WP08 NGS312T35WP08 NGS312T36WP08 NGS3800T32WP19		NGS3800T33WP19 NGS3800T35WP19 NGS3800T36WP19 NGS412T32WP08 NGS412T33WP08	
NGS4800T32WP19 NGS4800T33WP19 8NES400T 8NES450T 8NES500T		8NES550T 8NES600T 8NES630T 8NES700T 8NES800T		12NES1000T 12NES1200T 12NES600T 12NES630T 12NES700T		12NES800T 12NES900T — — —	

Table 12-76. Molded Case Switches ①②

Ampere Rating	U_e Maximum 690 Vac					
	3-Pole		Catalog Number	Price U.S. \$	4-Pole	
					Catalog Number	Price U.S. \$
800	MCS Only without Line and Load Terminals	NGK3800KSW		MCS Only without Line and Load Terminals	NGK4800KSW	
1200	MCS Only without Line and Load Terminals	NGK312KSW		MCS Only without Line and Load Terminals	NGK412KSW	
1250	MCS Only without Line and Load Terminals	NGK3125KSW		MCS Only without Line and Load Terminals	NGK4125KSW	

① For ac use only. Molded case switch will trip above 14,000 amperes.

② For 2-pole applications, use outer poles of 3-pole molded case switch.

Frame Size NG, 1200 Amperes 65 kA at 480 Vac, 70 kA at 415 Vac

Table 12-77. Type NGH High Interrupting Capacity — U_g Max. 690 Vac, 65 kA I_{CU} at 480 Vac, 70 kA I_{CU} at 415 Vac ①

Maximum Continuous Ampere Rating at 40°C ②③	Number of Poles	Circuit Breaker Frame Including Digitrip RMS 310 Electronic Trip Unit with Adjustable Rating Plugs — Catalog Number ④				Interchangeable Rating Plugs (Order as Individual Component)		Included with Breaker
		L – Adjustable Long Delay Pickup (By Adjustable Rating Plug) S – Adjustable Short Delay Pickup with Fixed Short Delay Time (I^2t Response) or Adjustable Short Delay Time (Flat Response) I – Adjustable Instantaneous Pickup by Setting Short Delay Time to Instantaneous G – Adjustable Ground Fault Pickup with Adjustable Ground Fault Delay (Flat Response)				Fixed Rating Plug	Adjustable Rating Plug	
		LS	LSI	LSG	LSIG			
Short Time Range Short Time Delay Ground Fault Pickup Ground Fault Delay	$2 - 8 \times I_n$ — — —	$2 - 8 \times I_n$ 1 – 300 ms — —	$2 - 8 \times I_n$ — 200 – 1200 A 1 – 500 ms	$2 - 8 \times I_n$ 1 – 300 ms 200 – 1200 A 1 – 500 ms	Ampere Rating	Catalog Number	Adjustable Ampere Settings Catalog Number	
800	2-Pole	NGH2800T33WP18	NGH2800T32WP18	NGH2800T35WP18	NGH2800T36WP18	400	8NES400T	400/500/ 600/800 A8NES800T1
						450	8NES450T	
						500	8NES500T	
						550	8NES550T	
	600	8NES600T						
	630	8NES630T						
	700	8NES700T						
	800	8NES800T						
	3-Pole	NGH3800T33WP18	NGH3800T32WP18	NGH3800T35WP18	NGH3800T36WP18	400	8NES400T	400/500/ 600/800 A8NES800T1
450						8NES450T		
500						8NES500T		
550						8NES550T		
600	8NES600T							
630	8NES630T							
700	8NES700T							
800	8NES800T							
4-Pole ⑤	NGH4800T33WP18	NGH4800T32WP18	—	—	400	8NES400T	400/500/ 600/800 A8NES800T1	
					450	8NES450T		
					500	8NES500T		
					550	8NES550T		
600	8NES600T							
630	8NES630T							
700	8NES700T							
800	8NES800T							
1200 ⑥	2-Pole	NGH212T33WP08 ⑥	NGH212T32WP08 ⑥	NGH212T35WP08 ⑥	NGH212T36WP08 ⑥	600	12NES600T	600/800/ 1000/1200 A12NES1200T1
						630	12NES630T	
						700	12NES700T	
						800	12NES800T	
	900	12NES900T						
	1000	12NES1000T						
	1200	12NES1200T						
	3-Pole	NGH312T33WP08 ⑥		NGH312T32WP08 ⑥	NGH312T35WP08 ⑥	NGH312T36WP08 ⑥	600	12NES600T
			630				12NES630T	
			700				12NES700T	
			800				12NES800T	
	900	12NES900T						
1000	12NES1000T							
1200	12NES1200T							
4-Pole ⑤	NGH412T33WP08 ⑥	NGH412T32WP08 ⑥		—	—	600	12NES600T	600/800/ 1000/1200 A12NES1200T1
			630			12NES630T		
			700			12NES700T		
			800			12NES800T		
900	12NES900T							
1000	12NES1000T							
1200	12NES1200T							

① See Table 12-78 on Page 12-45 for prices.

② For ac use only.

③ NG MCCBs are suitable for 40°C or 50°C applications. Order suffix V3 to eliminate standard 40°C labeling.

④ Order terminals separately.

⑤ Unprotected left pole neutral. Insert "E" for 100% neutral or "EH" for 60% neutral between "T33" or "T32" and "W" (e.g., NGH412T32EHWP08). Neutral is on LH side.

⑥ Non-UL listed NG 1250 with 1250 ampere trip unit is also available.

Note: NG MCCBs have metric threading on line and load conductors. Use ND MCCBs if imperial threading is required.

Frame Size NG, 1200 Amperes 65 kA at 480 Vac, 70 kA at 415 Vac

Table 12-78. Type NGS Standard Interrupting Capacity — U_e Max. 690 Vac, 50 kA I_{CU} at 480 Vac or 415 Vac Prices

Catalog Number	Price U.S. \$	Catalog Number	Price U.S. \$	Catalog Number	Price U.S. \$	Catalog Number	Price U.S. \$
A12NES1200T1 A8NES800T1 NGH212T32WP08 NGH212T33WP08 NGH212T35WP08		NGH212T36WP08 NGH2800T32WP19 NGH2800T33WP19 NGH2800T35WP19 NGH2800T36WP19		NGH312T32WP08 NGH312T33WP08 NGH312T35WP08 NGH312T36WP08 NGH3800T32WP19		NGH3800T33WP19 NGH3800T35WP19 NGH3800T36WP19 NGH412T32WP08 NGH412T33WP08	
NGH4800T32WP19 NGH4800T33WP19 8NES400T 8NES450T 8NES500T		8NES550T 8NES600T 8NES630T 8NES700T 8NES800T		12NES1000T 12NES1200T 12NES600T 12NES630T 12NES700T		12NES800T 12NES900T — — —	

Discount Symbol CB-2

Frame Size NG, 1200 Amperes 100 kA at 480 Vac or 415 Vac

Table 12-79. Type NGC Very High Capacity — U_e Max. 690 Vac, 100 kA I_{cu} at 480 Vac or 415 Vac ①

Maximum Continuous Ampere Rating at 40°C ②③	Number of Poles	Circuit Breaker Frame Including Digitrip RMS 310 Electronic Trip Unit with Adjustable Rating Plugs — Catalog Number ④				Interchangeable Rating Plugs (Order as Individual Component)		Included with Breaker
		L – Adjustable Long Delay Pickup (By Adjustable Rating Plug) S – Adjustable Short Delay Pickup with Fixed Short Delay Time (I^2t Response) or Adjustable Short Delay Time (Flat Response) I – Adjustable Instantaneous Pickup by Setting Short Delay Time to Instantaneous G – Adjustable Ground Fault Pickup with Adjustable Ground Fault Delay (Flat Response)				Fixed Rating Plug		
Short Time Range Short Time Delay Ground Fault Pickup Ground Fault Delay		LS	LSI	LSG	LSIG	Ampere Rating	Catalog Number	Adjustable Ampere Settings Catalog Number
		$2 - 8 \times I_n$	$2 - 8 \times I_n$ 1 – 300 ms	$2 - 8 \times I_n$ 200 – 1200 A 1 – 500 ms	$2 - 8 \times I_n$ 1 – 300 ms 200 – 1200 A 1 – 500 ms			
800	2-Pole	NGC2800T33WP18	NGC2800T32WP18	NGC2800T35WP18	NGC2800T36WP18	400	8NES400T 8NES450T 8NES500T 8NES550T	400/500/600/800 A8NES800T1
						450		
						500		
	3-Pole	NGC3800T33WP18	NGC3800T32WP18	NGC3800T35WP18	NGC3800T36WP18	600	8NES600T 8NES630T 8NES700T 8NES800T	400/500/600/800 A8NES800T1
						630		
						700		
	4-Pole ⑤	NGC4800T33WP18	NGC4800T32WP18	—	—	800	8NES400T 8NES450T 8NES500T 8NES550T	400/500/600/800 A8NES800T1
						600		
						630		
1200 ⑥	2-Pole	NGC212T33WP08 ⑥	NGC212T32WP08 ⑥	NGC212T35WP08 ⑥	NGC212T36WP08 ⑥	400	12NES600T 12NES630T 12NES700T 12NES800T	600/800/ 1000/1200 A12NES1200T1
						450		
						500		
	3-Pole	NGC312T33WP08 ⑥	NGC312T32WP08 ⑥	NGC312T35WP08 ⑥	NGC312T36WP08 ⑥	600	12NES900T 12NES1000T 12NES1200T	600/800/ 1000/1200 A12NES1200T1
						630		
						700		
	4-Pole ⑤	NGC412T33WP08 ⑥	NGC412T32WP08 ⑥	—	—	800	12NES600T 12NES630T 12NES700T 12NES800T	600/800/ 1000/1200 A12NES1200T1
						900		
						1000		

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① See Table 12-80 on Page 12-47 for prices.
 ② For ac use only.
 ③ NG MCCBs are suitable for 40°C or 50°C applications. Order suffix V3 to eliminate standard 40°C labeling.
 ④ Order terminals separately.
 ⑤ Unprotected left pole neutral. Insert “E” for 100% neutral or “EH” for 60% neutral between “T33” or “T32” and “W” (e.g., NGC412T32EHWP08). Neutral is on LH side.
 ⑥ Non-UL listed NG 1250 with 1250 ampere trip unit is also available.
Note: NG MCCBs have metric threading on line and load conductors. Use ND MCCBs if imperial threading is required.

Frame Size NG, 1200 Amperes 100 kA at 480 Vac or 415 Vac

Table 12-80. Type NGC Very High Capacity — U_e Max. 690 Vac, 100 kA I_{cu} at 480 Vac or 415 Vac Prices

Catalog Number	Price U.S. \$	Catalog Number	Price U.S. \$	Catalog Number	Price U.S. \$	Catalog Number	Price U.S. \$
A12NES1200T1 A8NES800T1 NGC212T32WP08 NGC212T33WP08 NGC212T35WP08		NGC212T36WP08 NGC2800T32WP19 NGC2800T33WP19 NGC2800T35WP19 NGC2800T36WP19		NGC312T32WP08 NGC312T33WP08 NGC312T35WP08 NGC312T36WP08 NGC3800T32WP19		NGC3800T33WP19 NGC3800T35WP19 NGC3800T36WP19 NGC412T32WP08 NGC412T33WP08	
NGC4800T32WP19 NGC4800T33WP19 8NES400T 8NES450T 8NES500T		8NES550T 8NES600T 8NES630T 8NES700T 8NES800T		12NES1000T 12NES1200T 12NES600T 12NES630T 12NES700T		12NES800T 12NES900T — — —	

Discount Symbol CB-2

Frame Size NG, 1600 Amperes 50 kA at 415 Vac

Table 12-81. Type NGS Standard Interrupting Capacity — U_e Max. 690 Vac, 50 kA I_{CU} at 415 Vac

Maximum Continuous Ampere Rating at 40°C ①②	Number of Poles	Circuit Breaker Frame Including Digitrip RMS 310 Electronic Trip Unit and Rating Plugs								
		L – Adjustable Long Delay Pickup (By Adjustable Rating Plug) S – Adjustable Short Delay Pickup with Fixed Short Delay Time (I ² t Response) or Adjustable Short Delay Time (Flat Response) I – Adjustable Instantaneous Pickup by Setting Short Delay Time to Instantaneous G – Adjustable Ground Fault Pickup with Adjustable Ground Fault Delay (Flat Response)								
		LS	Price U.S. \$	LSI	Price U.S. \$	LSG	Price U.S. \$	LSIG	Price U.S. \$	Adjustable Rating Plug
Short Time Range Short Time Delay Ground Fault Pickup Ground Fault Delay	2 – 8 x I _n — — —	2 – 8 x I _n I – 300 ms — —		2 – 8 x I _n I – 300 ms — —		2 – 8 x I _n — 200 – 1200 A I – 500 ms		2 – 8 x I _n I – 300 ms 200 – 1200 A I – 500 ms		
1600 ③	3-Pole ④ 4-Pole ④	NGS316T33WP35 NGS416T33WP35		NGS316T32WP35 NGS416T32WP35		NGS316T35WP35 —		NGS316T36WP35 —		800/ 1000/ 1250/ 1600

- ① For ac use only.
 - ② NG MCCBs are suitable for 40°C or 50°C applications. Order suffix V3 to eliminate standard 40°C labeling.
 - ③ No UL or CSA label is available for the 1600 ampere frame size.
 - ④ Unprotected left pole neutral. Insert "1" for 100% protected neutral or "6" for 60% protected neutral before "WP" suffix (e.g., **NGS416T336WP35**).
- Note:** NG 1600 MCCB uses metric threading on line and load conductors. The NG 1600 is not UL or CSA listed.

Line and Load Terminals

N-Frame circuit breakers do not include terminals as standard. When copper or Cu/Al terminals are required, order by catalog number.

Table 12-82. Line and Load Terminals

Maximum Breaker Amperes	Terminal Body Material	Wire Type	Metric Wire Range mm ²	AWG Wire Number of Conductors	Catalog Number ⑤	Price U.S. \$
1250 ⑥	Copper	Copper	95 – 185	3/0 – 400 (4)	T1200NB3M	

- ⑤ Optional Copper and Cu/Al Pressure Type Terminals
- ⑥ Single terminals individually packed.
- ⑦ Not suitable with 1600 ampere frame version.

Base Mounting Hardware

Base mounting hardware is included with a circuit breaker or molded case switch.

Table 12-83. Base Mounting Hardware ⑦

Number of Poles	Description	Catalog Number	Price U.S. \$
3- and 4-pole	Imperial Hardware: .3125 – 18 x 1.25 Pan-Head Steel Screws and Lock Washers	BMH5	
3- and 4-pole	Metric Hardware: M8 Pan-Head Steel Screws and Lock Washers	BMH5M	

- ⑦ Metric hardware included with breaker.

Terminal Shield

Table 12-84. Terminal Shield

Description	Catalog Number	Price U.S. \$
3-Pole Terminal Shield	NTS3K	

Conductor Extension Kit

Table 12-85. Conductor Extension Kit

Description	Catalog Number	Price U.S. \$
3-Pole Both Ends Metric	5104A24G04	
3-Pole Both Ends English	5104A24G02	

Keeper Nut

Not required on NG-Frame. Terminals are threaded.

Handle Extension

Included with breaker. Additional handle extensions are available.

Table 12-86. Handle Extension

Description	Catalog Number	Price U.S. \$
Single Handle Extension	HEX5	

Interphase Barriers

The interphase barriers provide additional electrical clearance between circuit breaker poles for special termination applications. Barriers are high dielectric insulating plates that are installed in the molded slots between the terminals. (Field installation only.)

Table 12-87. Interphase Barriers

Description	Catalog Number	Price U.S. \$
Interphase Barriers	IPB5	

Allowable Accessory Combinations

Different combinations of accessories can be supplied, depending on the types of accessories and the number of poles in the circuit breaker.

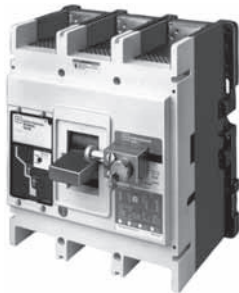
Table 12-88. Accessories

Description	Reference Page	3-Pole			4-Pole			
		Left	Center	Right	Left	Center	Right	Neu.
Internal Accessories (Only One Internal Accessory Per Pole)								
Alarm Lockout (Make/Break)	12-65	●		■	●		■	
Auxiliary Switch (1A, 1B)	12-65	●		■	●		■	
Auxiliary Switch (2A, 2B)	12-65	●		■	●		■	
Auxiliary Switch and Alarm Switch Combination	12-65	●		■	●		■	
Shunt Trip — Standard	12-65	■			■			
Undervoltage Release Mechanism	12-65	■			■			
External Accessories								
Base Mounting Hardware	12-48		●			●		
Interphase Barriers	12-48		●			●		
Non-Padlockable Handle Block	12-64		■			■		
Padlockable Handle Lock Hasp	12-64	□		□	□		□	
Key Interlock Kit	12-64	□		□	□		□	
Sliding Bar Interlock — Requires Two Breakers	12-64		●					
Electrical Operator	12-64		●			●		
Plug-in Adapters	12-66		●			●		
Rear Connecting Studs	12-64		●			●		
Handle Mechanisms	12-67		●			●		
Drawout Cassette	12-66		●			●		
Handle Extension	12-48		●			●		
Digitrip 310 Test Kit	12-268		●			●		
Modifications (Refer to Eaton)								
Moisture Fungus Treatment	12-73		●			●		
Freeze-Tested Circuit Breakers	—		●			●		
Marine/Naval Application, UL Supplement SA and SB	①		●			●		

■ Applicable in indicated pole position □ May be mounted on left or right pole — not both ● Accessory available/Modification available

① Contact Eaton

RG-Frame



RG-Frame Circuit Breaker

Product Description

- Cutler-Hammer RG-Frame Circuit Breakers by Eaton Corporation are available as frame (which includes trip unit), rating plug and terminals.
- All R-Frame circuit breakers are suitable for reverse feed use.

Technical Data and Specifications

Table 12-89. UL 489/CSA Interrupting Capacity Ratings ^①

Circuit Breaker Type	Number of Poles	Interrupting Capacity (kA Symmetrical Amperes)			
		Volts ac (50/60 Hz)			
		240	277	480	600
RGH	3, 4	125	—	65	50
RGC	3, 4	200	—	100	65

^① Utilization Category A circuit breakers.

Note: See Page 12-164 for Trip Unit Specifications.

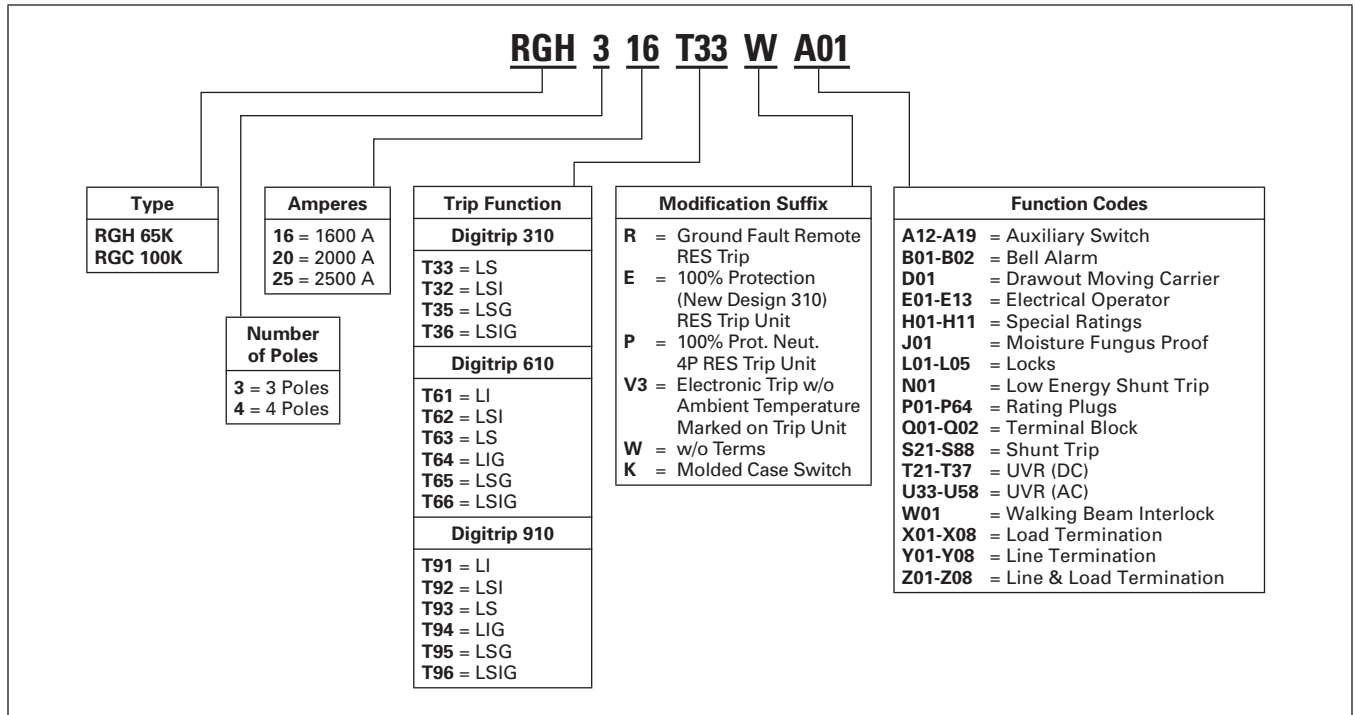
Table 12-90. IEC 947-2 Interrupting Capacity Ratings ^②

Circuit Breaker Type	Number of Poles	Interrupting Capacity (kA Symmetrical Amperes)			
		Volts ac (50/60 Hz)			
		240	415	690	
RGH	3, 4	I_{cu}	135	70	25
		I_{cs}	100	50	13
RGC	3, 4	I_{cu}	200	100	35
		I_{cs}	100	50	18

^② Utilization Category A circuit breakers.

Product Selection

Table 12-91. Circuit Breaker/Frame Catalog Numbering System



Dimensions/Weights

Table 12-92. Dimensions in Inches (mm)

Number of Poles	Width	Height	Depth
3	15.50 (393.7)	16.00 (406.4)	9.75 (247.7)
4	20.00 (508.0)	16.00 (406.4)	9.75 (247.7)

Table 12-93. Approximate Shipping Weight, Lbs. (kg)

Breaker Type	Complete Breaker	
	Number of Poles	
	3	4
1600 Amperes		
RGH, RGC	102 (46.3)	135 (61.2)
2000 Amperes		
RGH, RGC	102 (46.3)	135 (61.2)
2500 Amperes		
RGH, RGC	135 (61.2)	182 (82.6)

Frame Size RG, 2500 Amperes 65 kA at 480 Vac, 70 kA at 415 Vac — Digitrip 310 Trip Unit

RG-Frame, 2500 Amperes — Selection Guide and Ordering Information

Table 12-94. Type RGH with Digitrip 310 High Interrupting Capacity — U_e Maximum 690 Vac, 70 kA I_{cu} at 415 Vac ①

Maximum Continuous Ampere Rating at 40°C ②	Number of Poles	Circuit Breaker Frame Including Digitrip RMS 310 Electronic Trip Unit with Adjustable Rating Plugs — Catalog Number ③				Interchangeable Rating Plugs (Order as Individual Component)		Included with Breaker
		L – Adjustable Long Delay Pickup (By Adjustable Rating Plug) S – Adjustable Short Delay Pickup with Fixed Short Delay Time (I^2t Response) or Adjustable Short Delay Time (Flat Response) I – Adjustable Instantaneous Pickup by Setting Short Delay Time to Instantaneous G – Adjustable Ground Fault Pickup with Adjustable Ground Fault Delay (Flat Response)						
		LS	LSI	LSG ④	LSIG ④	Fixed Rating Plug		
Short Time Range Short Time Delay Ground Fault Pickup Ground Fault Delay	2 – 8 x I_n — — —	2 – 8 x I_n 1 – 300 ms — —	2 – 8 x I_n — 200 – 1200 A 1 – 500 ms	2 – 8 x I_n 1 – 300 ms 200 – 1200 A 1 – 500 ms	Ampere Rating	Catalog Number	Adjustable Ampere Settings Catalog Number	
1600 ②	3-Pole	RGH316T33WP08	RGH316T32WP08	RGH316T35WP08	RGH316T36WP08	800	16RES08T	800/1000/ 1200/1600 A16RES16T1
						1000	16RES10T	
						1200	16RES12T	
1250	16RES125T							
						1400	16RES14T	
						1500	16RES15T	
						1600	16RES16T	
2000	3-Pole	RGH320T33WP16	RGH320T32WP16	RGH320T35WP16	RGH320T36WP16	1000	20RES10T	1000/1200/ 1600/2000 A20RES20T1
						1200	20RES12T	
						1250	A20RES125T	
1400	A20RES14T							
						1600	A20RES16T	
						2000	A20RES20T	
2500	3-Pole	RGH325T33WP39	RGH325T32WP39	RGH325T35WP39	RGH325T36WP39	1200	25RES12T	1200/1600/ 2000/2500 A25RES25T1
						1250	25RES125T	
						1600	A25RES16T	
2000	A25RES20T							
						2500	A25RES25T	
1600 ②	4-Pole ⑥	RGH416T33WP08	RGH416T32WP08	—	—	800	16RES08T	800/1000/ 1200/1600 A16RES16T1
						1000	16RES10T	
						1200	16RES12T	
1250	16RES125T							
						1400	16RES14T	
						1500	16RES15T	
						1600	16RES16T	
2000	4-Pole ⑥	RGH420T33WP16	RGH420T32WP16	—	—	1000	20RES10T	1000/1200/ 1600/2000 A20RES20T1
						1200	20RES12T	
						1250	A20RES125T	
1400	A20RES14T							
						1600	A20RES16T	
						2000	A20RES20T	
2500	4-Pole ⑥	RGH425T33WP39	RGH425T32WP39	—	—	1200	25RES12T	1200/1600/ 2000/2500 A25RES25T1
						1250	25RES125T	
						1600	A25RES16T	
2000	A25RES20T							
						2500	A25RES25T	

① See Table 12-95 on Page 12-53 for prices.
 ② For SCR application, use 2000 ampere frame.
 ③ Order terminals separately. Mounting hardware not included.
 ④ Ground fault equipped trip units available with remote indicating panel. Add "R" to catalog number, e.g., "RGH316T35RW."
 ⑤ Additional IEC ratings are available on adjustable rating plugs. Contact your Eaton representative.
 ⑥ Unprotected left pole neutral. Add "P" to catalog number for 100% protected left pole neutral, add "E" for 60% protected, e.g., "RGH416T33PW", "RGH416T33EW."

Note: RG MCCBs have metric threading on line and load conductors. Use RD MCCBs if imperial threading is required.

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Frame Size RG, 2500 Amperes 65 kA at 480 Vac, 70 kA at 415 Vac — Digitrip 310 Trip Unit

Table 12-95. Type RGH with Digitrip 310 High Interrupting Capacity — U_e Maximum 690 Vac, 70 kA I_{CU} at 415 Vac Prices

Catalog Number	Price U.S. \$	Catalog Number	Price U.S. \$	Catalog Number	Price U.S. \$	Catalog Number	Price U.S. \$
A16RES16T1 20RES125T 20RES14T 20RES16T 20RES20T		A20RES20T1 25RES16T 25RES20T 25RES25T A25RES25T1		RGH316T32WP09 RGH316T33WP09 RGH316T35WP09 RGH316T36WP09 RGH320T32WP17		RGH320T33WP17 RGH320T35WP17 RGH320T36WP17 RGH325T32WP40 RGH325T33WP40	
RGH325T35WP40 RGH325T36WP40 RGH416T32WP09 RGH416T33WP09 RGH420T32WP17		RGH420T33WP17 RGH425T32WP40 RGH425T33WP40 16RES08T 16RES10T		16RES125T 16RES12T 16RES14T 16RES15T 16RES16T		20RES10T 20RES12T 25RES125T 25RES12T —	

Discount Symbol CB-2

Frame Size RG, 2500 Amperes 100 kA at 480 Vac, 415 Vac — Digitrip 310 Trip Unit

Table 12-96. Type RGC with Digitrip 310 Very High Interrupting Capacity — U_e Maximum 690 Vac, 100 kA I_{CU} at 415 Vac Page 12-54

Maximum Continuous Ampere Rating at 40°C ^②	Number of Poles	Circuit Breaker Frame Including Digitrip RMS 310 Electronic Trip Unit with Adjustable Rating Plugs — Catalog Number ^③				Interchangeable Rating Plugs (Order as Individual Component)		Included with Breaker ^③	
		L – Adjustable Long Delay Pickup (By Adjustable Rating Plug) S – Adjustable Short Delay Pickup with Fixed Short Delay Time (I^2t Response) or Adjustable Short Delay Time (Flat Response) I – Adjustable Instantaneous Pickup by Setting Short Delay Time to Instantaneous G – Adjustable Ground Fault Pickup with Adjustable Ground Fault Delay (Flat Response)				Fixed Rating Plug	Adjustable Rating Plug ^⑤		
Short Time Range Short Time Delay Ground Fault Pickup Ground Fault Delay		LS	LSI	LSG ^④	LSIG ^④	Ampere Rating	Catalog Number	Adjustable Ampere Settings Catalog Number	
1600 ^②	3-Pole	RGC316T33WP08	RGC316T32WP08	RGC316T35WP08	RGC316T36WP08	800 1000 1200 1250	16RES08T 16RES10T 16RES12T 16RES125T	800/1000/ 1200/1600 A16RES16T1	
						1400 1500 1600	16RES14T 16RES15T 16RES16T		
2000		RGC320T33WP16	RGC320T32WP16	RGC320T35WP16	RGC320T36WP16	1000 1200 1250	20RES10T 20RES12T A20RES125T	1000/1200/ 1600/2000 A20RES20T1	
						1400 1600 2000	A20RES14T A20RES16T A20RES20T		
2500		RGC325T33WP40	RGC325T32WP40	RGC325T35WP40	RGC325T36WP40	1200 1250 1600	25RES12T 25RES125T A25RES16T	1200/1600/ 2000/2500 A25RES25T1	
						2000 2500	A25RES20T A25RES25T		
1600 ^②	4-Pole ^⑥	RGC416T33WP08	RGC416T32WP08	—	—	800 1000 1200 1250	16RES08T 16RES10T 16RES12T 16RES125T	800/1000/ 1200/1600 A16RES16T1	
							1400 1500 1600	16RES14T 16RES15T 16RES16T	
2000		RGC420T33WP16	RGC420T32WP16	—	—	1000 1200 1250	20RES10T 20RES12T A20RES125T	1000/1200/ 1600/2000 A20RES20T1	
						1400 1600 2000	A20RES14T A20RES16T A20RES20T		
2500		RGC425T33WP40	RGC425T32WP40	—	—	1200 1250 1600	25RES12T 25RES125T A25RES16T	1200/1600/ 2000/2500 A25RES25T1	
						2000 2500	A25RES20T A25RES25T		

① See Table 12-97 on Page 12-55 for prices.

② For SCR application, use 2000 ampere frame.

③ Order terminals separately. Mounting hardware not included.

④ Ground fault equipped trip units available with remote indicating panel. Add "R" to catalog number, e.g., "RGH316T35RW."

⑤ Additional IEC ratings are available on adjustable rating plugs. Contact your Eaton representative.

⑥ Unprotected left pole neutral. Add "P" to catalog number for 100% protected left pole neutral, add "E" for 60% protected, e.g., "RGH416T33PW", "RGH416T33EW."

Note: RG MCCBs have metric threading on line and load conductors. Use RD MCCBs if imperial threading is required.

Table 12-97. Type RGH with Digitrip 310 High Interrupting Capacity — U_e Maximum 690 Vac, 70 kA I_{CU} at 415 Vac Prices

Catalog Number	Price U.S. \$	Catalog Number	Price U.S. \$	Catalog Number	Price U.S. \$	Catalog Number	Price U.S. \$
A16RES16T1 A20RES125T A20RES14T A20RES16T A20RES20T		A20RES20T1 A25RES16T A25RES20T A25RES25T A25RES25T1		RGC316T32WP09 RGC316T33WP09 RGC316T35WP09 RGC316T36WP09 RGC320T32WP17		RGC320T33WP17 RGC320T35WP17 RGC320T36WP17 RGC325T32WP40 RGC325T33WP40	
RGC325T35WP40 RGC325T36WP40 RGC416T32WP09 RGC416T33WP09 RGC420T32WP17		RGC420T33WP17 RGC425T32WP40 RGC425T33WP40 16RES08T 16RES10T		16RES125T 16RES12T 16RES14T 16RES15T 16RES16T		20RES10T 20RES12T 25RES125T 25RES12T —	

Table 12-98. Molded Case Switches ①

Ampere Rating	Number of Poles	Catalog Number	Price U.S. \$
1600 2000	3-Pole	RGK316WK RGK320WK	
1600 2000	4-Pole	RGK416WK RGK420WK	

① Molded case switch will trip above 17,500 amperes.

Frame Size RG, 1250 Amperes — Digitrip 610 & 910 Trip Units

Table 12-99. Type RG with Digitrip 610 and 910

Maximum Continuous Ampere Rating at 40°C	Number of Poles	Circuit Breaker Frame Including Digitrip RMS 610 and 910 Electronic Trip Unit with Rating Plugs Order as Individual Component — Catalog Number ①						Digitrip RMS Interchangeable Rating Plug (Order as Individual Component)	
		L – Adjustable Long Delay Pickup (I_L) with Adjustable Long Delay Time S – Adjustable Short Delay Pickup with Adjustable Short Delay Time (I^2t or Flat Response) I – Adjustable Instantaneous Pickup G – Adjustable Ground Fault Pickup with Adjustable Ground Fault Time Delay (I^2t or Flat Response)						Fixed Rating Plug	Catalog Number
		LI	LS	LSI	LIG	LSG	LSIG		
Long Delay Pickup Long Delay Time Short Time Range Short Time Delay Instantaneous Ground Fault Pickup Ground Fault Delay		0.5 – 1.0 x I_n 2 – 24 Seconds 2 – 6 x I_L 2 – 6 x M1 & M2 —	0.5 – 1.0 I_n 2 – 24 Seconds 2 – 6 x I_L 100 – 500 ms —	0.5 – 1.0 x I_n 2 – 24 Seconds 2 – 6 x I_L 100 – 500 ms 2 – 6 x M1 & M2 —	0.5 – 1.0 x I_n 2 – 24 Seconds 2 – 6 x I_L — 2 – 6 x M1 & M2 0.25 – 1.0 x I_n ② 100 – 500 ms	0.5 – 1.0 x I_n 2 – 24 Sec. 2 – 6 x I_L 100 – 500 ms — 0.25 – 1.0 x I_n ② 100 – 500 ms	0.5 – 1.0 x I_n 2 – 24 Seconds 2 – 6 x I_L 100 – 500 ms 2 – 6 x M1 & M2 0.25 – 1.0 x I_n ② 100 – 500 ms	Ampere Rating	Catalog Number

Type RGH with Digitrip 610 High Interrupting Capacity — U_e Max. 690 Vac, 70 kA I_{CU} at 415 Vac

1600	3-Pole	RGH316T61WP44	RGH316T63WP44	RGH316T62WP44	RGH316T64WP44	RGH316T65WP44	RGH316T66WP44	800 1000 1200 1250 1600	RP6R16A080 RP6R16A100 RP6R16A120 RP6R16A125 RP6R16A160
		Includes 1600 A Rating Plug							
2000		RGH320T61WP49	RGH320T63WP49	RGH320T62WP49	RGH320T64WP49	RGH320T65WP49	RGH320T66WP49	1000 1200 1250 1600 2000	RP6R20A100 RP6R20A120 RP6R20A125 RP6R20A160 RP6R20A200
		Includes 2000 A Rating Plug							
2500		RGH325T61WP53	RGH325T63WP53	RGH325T62WP53	RGH325T64WP53	RGH325T65WP53	RGH325T66WP53	1600 2000 2500	RP6R25A160 RP6R25A200 RP6R25A250
		Includes 2500 A Rating Plug							

Type RGC with Digitrip 610 Very High Interrupting Capacity — U_e Max. 690 Vac, 100 kA I_{CU} at 415 Vac

1600	3-Pole	RGC316T61WP44	RGC316T63WP44	RGC316T62WP44	RGC316T64WP44	RGC316T65WP44	RGC316T66WP44	800 1000 1200 1250 1600	RP6R16A080 RP6R16A100 RP6R16A120 RP6R16A125 RP6R16A160
		Includes 1600 A Rating Plug							
2000		RGC320T61WP49	RGC320T63WP49	RGC320T62WP49	RGC320T64WP49	RGC320T65WP49	RGC320T66WP49	1000 1200 1250 1600 2000	RP6R20A100 RP6R20A120 RP6R20A125 RP6R20A160 RP6R20A200
		Includes 2000 A Rating Plug							
2500		RGC325T61WP53	RGC325T63WP53	RGC325T62WP53	RGC325T64WP53	RGC325T65WP53	RGC325T66WP53	1600 2000 2500	RP6R25A160 RP6R25A200 RP6R25A250
		Includes 2500 A Rating Plug							

Type RGH with Digitrip 910 High Interrupting Capacity — U_e Max. 690 Vac, 70 kA I_{CU} at 415 Vac

1600	3-Pole	RGH316T91WP44	RGH316T93WP44	RGH316T92WP44	RGH316T94WP44	RGH316T95WP44	RGH316T96WP44	800 1000 1200 1250 1600	RP6R16A080 RP6R16A100 RP6R16A120 RP6R16A125 RP6R16A160
		Includes 1600 A Rating Plug							
2000		RGH320T91WP49	RGH320T93WP49	RGH320T92WP49	RGH320T94WP49	RGH320T95WP49	RGH320T96WP49	1000 1200 1250 1600 2000	RP6R20A100 RP6R20A120 RP6R20A125 RP6R20A160 RP6R20A200
		Includes 2000 A Rating Plug							
2500		RGH325T91WP53	RGH325T93WP53	RGH325T92WP53	RGH325T94WP53	RGH325T95WP53	RGH325T96WP53	1600 2000 2500	RP6R25A160 RP6R25A200 RP6R25A250
		Includes 2500 A Rating Plug							

Type RGC with Digitrip 910 Very High Interrupting Capacity — U_e Max. 690 Vac, 100 kA I_{CU} at 415 Vac

1600	3-Pole	RGC316T91WP44	RGC316T93WP44	RGC316T92WP44	RGC316T94WP44	RGC316T95WP44	RGC316T96WP44	800 1000 1200 1250 1600	RP6R16A080 RP6R16A100 RP6R16A120 RP6R16A125 RP6R16A160
		Includes 1600 A Rating Plug							
2000		RGC320T91WP49	RGC320T93WP49	RGC320T92WP49	RGC320T94WP49	RGC320T95WP49	RGC320T96WP49	1000 1200 1250 1600 2000	RP6R20A100 RP6R20A120 RP6R20A125 RP6R20A160 RP6R20A200
		Includes 2000 A Rating Plug							
2500		RGC325T91WP53	RGC325T93WP53	RGC325T92WP53	RGC325T94WP53	RGC325T95WP53	RGC325T96WP53	1600 2000 2500	RP6R25A160 RP6R25A200 RP6R25A250
		Includes 2500 A Rating Plug							

① Order terminals separately. Mounting hardware not included.

② Not to exceed 1200 ampere ground fault pickup.

Note: RG MCCBs have metric threading on line and load conductors. Use RD MCCBs if imperial threading is required.

Table 12-100. Type RG with Digitrip 610 and 910 Prices

Catalog Number	Price U.S. \$	Catalog Number	Price U.S. \$	Catalog Number	Price U.S. \$	Catalog Number	Price U.S. \$
RGC316T61WP44 RGC316T62WP44 RGC316T63WP44 RGC316T64WP44 RGC316T65WP44		RGC316T66WP44 RGC316T91WP44 RGC316T92WP44 RGC316T93WP44 RGC316T94WP44		RGC316T95WP44 RGC316T96WP44 RGC320T61WP49 RGC320T62WP49 RGC320T63WP49		RGC320T64WP49 RGC320T65WP49 RGC320T66WP49 RGC320T91WP49 RGC320T92WP49	
RGC320T93WP49 RGC320T94WP49 RGC320T95WP49 RGC320T96WP49 RGC325T61WP53		RGC325T62WP53 RGC325T63WP53 RGC325T64WP53 RGC325T65WP53 RGC325T66WP53		RGC325T91WP53 RGC325T92WP53 RGC325T93WP53 RGC325T94WP53 RGC325T95WP53		RGH316T61WP44 RGH316T62WP44 RGH316T63WP44 RGH316T64WP44 RGH316T65WP44	
RGH316T66WP44 RGH316T91WP44 RGH316T92WP44 RGH316T93WP44 RGH316T94WP44		RGH316T95WP44 RGH316T96WP44 RGH320T61WP49 RGH320T62WP49 RGH320T63WP49		RGH320T64WP49 RGH320T65WP49 RGH320T66WP49 RGH320T91WP49 RGH320T92WP49		RGH320T93WP49 RGH320T94WP49 RGH320T95WP49 RGH320T96WP49 RGH325T61WP53	
RGH325T62WP53 RGH325T63WP53 RGH325T64WP53 RGH325T65WP53 RGH325T66WP53		RGH325T91WP53 RGH325T92WP53 RGH325T93WP53 RGH325T94WP53 —		RGH325T95WP53 RGH325T96WP53 RP6R16A080 RP6R16A100 —		RP6R16A120 RP6R16A125 RP6R16A160 RP6R20A100 —	

Frame Size RG, 800 – 2500 Amperes

Line and Load Terminals

R-Frame circuit breakers use Cu/Al terminals as standard and copper only terminals as an option. Specify if factory installation is required.

Table 12-101. Line and Load Terminals

Maximum Breaker Amperes	Terminal Body Material	Wire Type	Hardware	AWG/kcmil Wire Range/ Number of Conductors	Metric Wire Range mm ²	Catalog Number	Price U.S. \$
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Wire Terminals

1600	Aluminum	Cu/Al	Metric	500 – 1000 (4)	300 – 500	TA1600RDM ①	
1600	Copper	Cu	Metric	1 – 600 (4)	50 – 300	T1600RDM ①	
2000	Aluminum	Cu/Al	Metric	2 – 600 (6)	35 – 300	TA2000RDM ②	

Rear Connectors

2000	Copper	—	Metric	—	—	B2016RDM ①	
2000	Copper	—	Metric	—	—	B2016RDLM ①	
2500	Copper	—	Metric	—	—	B2500RDM ①	

① Order one per pole — single terminals individually packed.

② Order one TA2000RD kit per 3-poles. Catalog number includes bus connection, terminals and hardware for either line side or load side of 3-pole breaker.

Note: RG MCCBs have metric threading on line and load conductors. Use RD MCCBs if imperial threading is required.

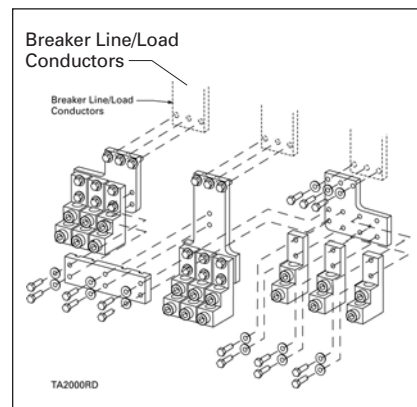


Figure 12-5. TA2000RD Wire Terminal

Note: Order one TA2000RDM kit per 3-poles. Catalog number includes bus connection, terminals and hardware for either line side or load side of 3-pole breaker.

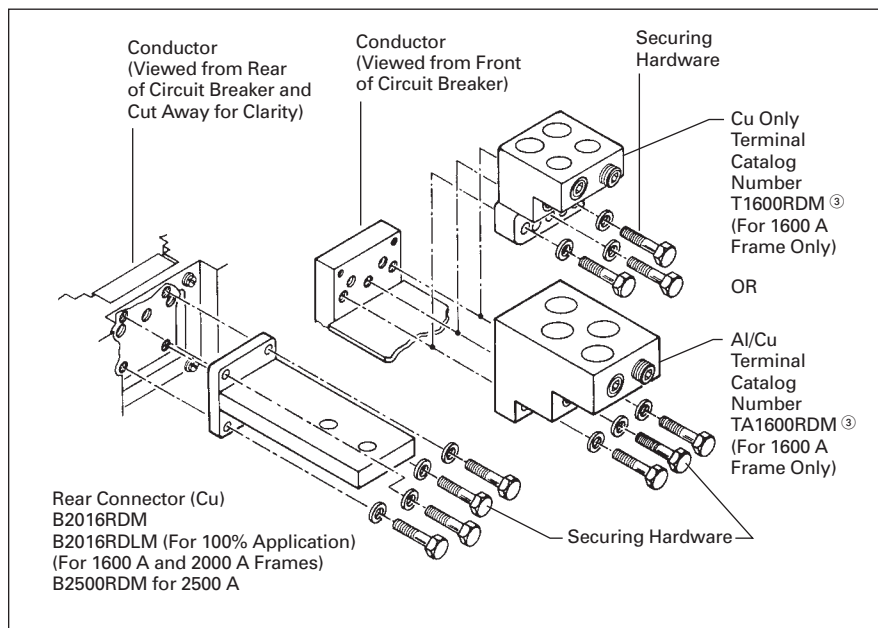


Figure 12-4. RD Rear Connector Exploded View

③ Order one per pole (or two per pole if line and load terminals are required) — single terminals individually packed.

Note: RG MCCBs have metric threading on line and load conductors. Use RD MCCBs if imperial threading is required.

Base Mounting Hardware

Supplied by customer.

Handle Extension

Included with breaker. Additional handle extensions are available.

Table 12-102. Handle Extension

Description	Catalog Number	Price U.S. \$
Single Handle Extension	HEX6	

Allowable Accessory Combinations

Different combinations of accessories can be supplied, depending on the types of accessories and the number of poles in the circuit breaker.

Table 12-103. Accessories

Description	Reference Page	3-Pole			4-Pole			
		Left	Center	Right	Left	Center	Right	Neu.
Internal Accessories (Only One Internal Accessory Per Pole)								
Alarm Lockout (Make/Break)	12-65			■			■	
Auxiliary Switch (1A, 1B)	12-65			■			■	
Auxiliary Switch (2A, 2B)	12-65			■			■	
Auxiliary Switch and Alarm Switch Combination	12-65			■			■	
Shunt Trip — Standard	12-65			●			●	
Undervoltage Release Mechanism	12-65			●			●	
External Accessories								
Base Mounting Hardware	12-58		●			●		
Padlockable Handle Lock Hasp	12-64	□		□	□		□	
Key Interlock Kit	12-64	□		□	□		□	
Electrical Operator	12-64		●			●		
Handle Mechanisms	12-67		●			●		
Drawout Cassette	12-66		●			●		
Handle Extension	12-58		●			●		
Digitrip 310 Test Kit	12-268		●			●		
Modifications (Refer to Eaton)								
Moisture Fungus Treatment	12-73		●			●		
Freeze-Tested Circuit Breakers	—		●			●		
Marine/Naval Application, UL Supplement SA and SB	①		●			●		

■ Applicable in indicated pole position □ May be mounted on left or right pole — not both ● Accessory available/Modification available

① Contact Eaton

Motor Circuit Protectors

Motor Circuit 480 Vac, Protectors — Selection Guide and Ordering Information

Table 12-104. EG-Frame — 480 Vac, 600Y/347 Vac Maximum ①

Continuous Amperes	Cam Setting	Motor Full Load Current Amperes ②	MCP Trip Setting ③	MCP Catalog Number	Price U.S. \$
3	A	.69 – .91	9	HMCPE003A0C	
	B	1.1 – 1.3	15		
	C	1.6 – 1.7	21		
	D	2.0 – 2.2	27		
	E	2.3 – 2.5	30		
	F	2.6 – 2.8	33		
7	A	1.5 – 2.0	21	HMCPE007C0C	
	B	2.6 – 3.1	35		
	C	3.7 – 3.9	49		
	D	4.8 – 5.2	63		
	E	5.3 – 5.7	70		
	F	5.8 – 6.1	77		
15	A	3.4 – 4.5	45	HMCPE015E0C	
	B	5.7 – 6.8	75		
	C	8.0 – 9.1	105		
	D	10.4 – 11.4	135		
	E	11.5 – 12.6	150		
	F	12.7 – 13.0	165		
30	A	3.9 – 9.1	90	HMCPE030H1C	
	B	11.5 – 13.7	150		
	C	16.1 – 18.3	210		
	D	20.7 – 22.9	270		
	E	23.0 – 25.2	300		
	F	25.3 – 26.1	330		
50	A	11.5 – 15.2	150	HMCPE050K2C	
	B	19.2 – 22.9	250		
	C	26.9 – 30.6	350		
	D	34.6 – 38.3	450		
	E	38.4 – 42.1	500		
	F	42.2 – 43.5	550		
70	A	16.1 – 30.6	210	HMCPE070M2C	
	B	26.9 – 32.2	350		
	C	37.6 – 42.9	490		
	D	48.4 – 53.7	630		
	E	53.8 – 59.1	700		
	F	59.2 – 60.9	770		
100	A	23.0 – 30.6	300	HMCPE100R3C	
	B	38.4 – 46.0	500		
	C	53.8 – 61.4	700		
	D	69.2 – 76.8	900		
	E	76.9 – 84.5	1000		
	F	84.6 – 87.0	1100		
100	A	38.4 – 46.0	500	HMCPE100T3C	
	B	57.6 – 65.2	750		
	C	76.9 – 84.5	1000		
	D	④	1250		
	E	④	1375		
	F	④	1500		

- ① UL listed for use with Cutler-Hammer Motor Starters.
- ② Motor FLA ranges are typical. The corresponding trip setting is at 13 times the minimum FLA value shown. Where a 13 times setting is required for an intermediate FLA value, alternate cam settings and/or MCP ratings should be used.
- ③ For dc applications, actual trip levels are approximately 40% higher than values shown.
- ④ Settings above 10 x I_n are for special applications. Where the ampere rating of the disconnecting means cannot be less than 115% of the motor full load ampere rating.

Table 12-105. JG-Frame — 600 Vac Maximum, 250 Vdc Maximum ⑤

Continuous Amperes	MCP Trip Range (Amperes)	MCP Catalog Number	Price U.S. \$
250	500 – 1000 625 – 1250 750 – 1500	HMCPJ250D5L HMCPJ250F5L HMCPJ250G5L	
	875 – 1750 1000 – 2000 1125 – 2250 1250 – 2500	HMCPJ250J5L HMCPJ250K5L HMCPJ250L5L HMCPJ250W5L	

⑤ UL listed for use with Cutler-Hammer Motor Starters.

Table 12-106. LG-Frame — 600 Vac Maximum, 250 Vdc Maximum ⑥⑦

Continuous Amperes	MCP Trip Range (Amperes)	MCP Catalog Number	Price U.S. \$
600	1250 – 2500 1500 – 3000 1750 – 3500	HMCPJ600L6G HMCPJ600N6G HMCPJ600R6G	
	2000 – 4000 2250 – 4500 2500 – 5000 3000 – 6000	HMCPJ600X6G HMCPJ600Y6G HMCPJ600P6G HMCPJ600M6G	

- ⑥ Equipped with an electromechanical trip device.
 - ⑦ UL listed for use with Cutler-Hammer Motor Starters.
- Note:** 800 and 1200 ampere, 600 Vac maximum motor circuit protectors are available as Series C HMCP product.

Motor Protector Circuit Breaker

**Series G Motor Protector
Circuit Breaker (MPCB)**



Product Description

- Eliminates need for separate overload relay.

Features

- IEC 60947-2.
- UL 489 rating.
- CSA C22.2
- Phase unbalance protection.
- Phase loss protection.
- Hot trip/cold trip.
- High load alarm.
- Pre-detection trip relay option.
- Class 10, 15, 20, 30 protection.

Applications

- Can be used with contactor to eliminate need for overload relay and still create manual motor control.
- Meets requirement for motor branch protection, including:
 - Disconnecting means
 - Branch circuit short circuit protection
 - Overload protection

Table 12-107. JGMPS and JGMPH Rating and Ampere Range

Maximum Rated Current (Amperes)			250	
Breaker Type			JGMPS	JGMPH
Breaker Capacity (kA rms) ac 50 – 60 Hz				
IEC 60947-2	220 – 240 Vac	I _{cu} I _{cs}	85 85	100 100
	380 – 415 Vac	I _{cu} I _{cs}	40 40	70 70
	660 – 690 Vac	I _{cu} I _{cs}	12 6	14 7
NEMA UL 489	240 Vac		85	100
	480 Vac		35	65
	600 Vac		25	35
Number of Poles			3	3
Ampere Range			50 – 250	50 – 250

Table 12-108. LGMPS and LGMPH Rating and Ampere Range

Maximum Rated Current (Amperes)			630 ②	
Breaker Type			LGMPH	LGMPH
Breaker Capacity (kA rms) ac 50 – 60 Hz				
IEC 60947-2	220 – 240 Vac	I _{cu} I _{cs}	85 85	100 100
	380 – 415 Vac	I _{cu} I _{cs}	50 50	70 70
	660 – 690 Vac	I _{cu} I _{cs}	20 10	25 13
NEMA UL 489	240 Vac		85	100
	480 Vac		50	65
	600 Vac		25	35
Number of Poles			3	3
Ampere Range			250 – 630 ①	250 – 630 ①

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

Table 12-109. JGMP Catalog Numbers

Continuous Amperes	35 kAIC		65 kAIC	
	Catalog Number	Price U.S. \$	Catalog Number	Price U.S. \$
50	JGMPS050G		JGMPH050G	
100	JGMPS100G		JGMPH100G	
160	JGMPS160G		JGMPH160G	
250	JGMPS250G		JGMPH250G	

Table 12-110. LGMP Catalog Numbers

Continuous Amperes	50 kAIC		65 kAIC	
	Catalog Number	Price U.S. \$	Catalog Number	Price U.S. \$
250	LGMPH250G		LGMPH250G	
400	LGMPH400G		LGMPH400G	
600	LGMPH600G		LGMPH600G	
630 ②	LGMPH630G		LGMPH630G	

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

Note: For pre-trip alarm option, order Style Number 5721B31G02.

30 mA Ground Fault (Earth Leakage) Modules

**30 mA Ground Fault
(Earth Leakage) Modules**



Clockwise from Left: JG, LG MCCBs Shown with Ground Fault (Earth Leakage) Modules

Product Description

Eaton offers a 3- and 4-pole 30 mA ground fault (earth leakage) protection module for JG and LG breakers. The module does not restrict the use of other breaker accessories. UL-listed modules are available for JG and LG MCCBs. The JG and LG modules are both bottom mounted for circuits up to 160 and 250 amperes (JG), or 400 and 630 amperes for the LG.

The module is completely self-contained since the current sensor, relay and power supply are located inside the product. Current pickup settings are selectable from 0.03 – 10 amperes for all IEC-rated modules and JG UL-listed module, and 0.03 – 30 amperes for the LG UL-listed modules. Time delays are also selectable from Instantaneous – 1.0 seconds for 0.10 ampere settings and above. A current pickup setting of 0.03 amperes defaults to an Instantaneous time setting regardless of the time dial's position. Two alarm contacts come as standard: a 50% pre-trip and a 100% after trip, both based only on earth leakage current levels.

Product Selection

Table 12-111. JG-Frame Ground Fault Modules, UL-Rated (Bottom Mounted, 120 – 480 Vac, 50/60 Hz)

Amperes	Poles	Catalog Number	Price U.S. \$
150	3	ELJBN3150W	
150	4	ELJBN4150W	
250	3	ELJBN3250W	
250	4	ELJBN4250W	

Table 12-112. JG-Frame Earth Leakage Modules, IEC (Bottom Mounted, 230 – 415 Vac, 50/60 Hz)

Amperes	Poles	Catalog Number	Price U.S. \$
160	3	ELJBE3160W	
160	4	ELJBE4160W	
250	3	ELJBE3250W	
250	4	ELJBE4250W	

Table 12-113. LG-Frame Ground Fault Modules, UL-Rated (Bottom Mounted, 120 – 480 Vac, 50/60 Hz)

Amperes	Poles	Catalog Number	Price U.S. \$
400	3	ELLBN3400W	
400	4	ELLBN4400W	
600	3	ELLBN3600W	
600	4	ELLBN4600W	

Table 12-114. LG-Frame Earth Leakage Modules, IEC (Bottom Mounted, 230 – 415 Vac, 50/60 Hz)

Amperes	Poles	Catalog Number	Price U.S. \$
400	3	ELLBE3400W	
400	4	ELLBE4400W	
630	3	ELLBE3630W	
630	4	ELLBE4630W	

Table 12-115. Dimensions for Assembled Breaker and Earth Leakage Module in Inches (mm)

Frame	Height	Width	Depth
3-Pole			
JG	11.25 (285.8)	4.13 (104.9)	3.57 (90.7)
LG	15.38 (390.7)	5.48 (139.2)	4.06 (103.1)
4-Pole			
JG	11.25 (285.8)	5.50 (139.7)	3.57 (90.7)
LG	15.38 (390.7)	7.23 (183.6)	4.06 (103.1)

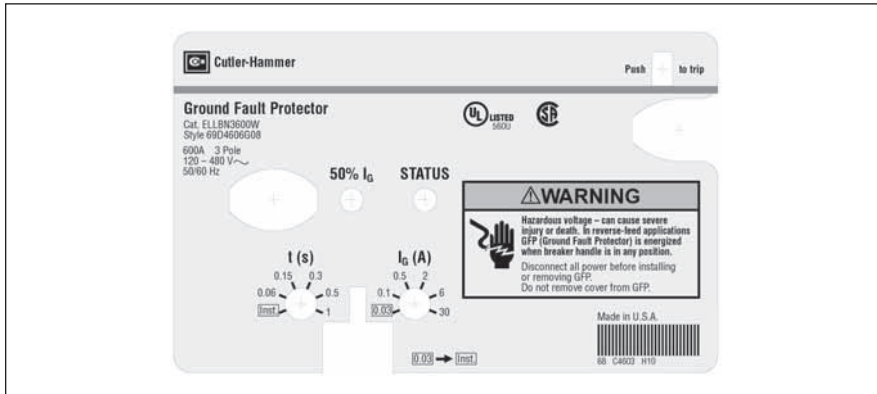


Figure 12-6. UL-Rated LG-Frame Earth Leakage Module Faceplate

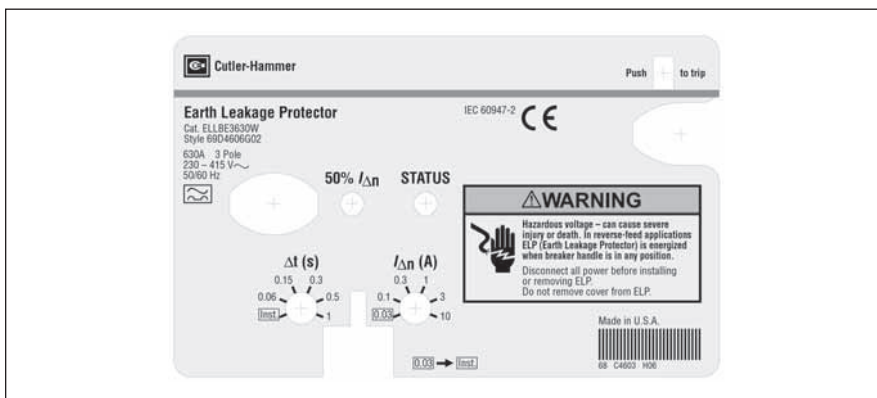


Figure 12-7. IEC-Rated LG-Frame Earth Leakage Module Faceplate

Discount Symbol **CB-2**

Special Features and Accessories

Internal Accessories

Alarm Lockout

The alarm switches operate when the circuit breaker is tripped by a short circuit or overcurrent, but also when it is tripped by a shunt trip or undervoltage release.

Auxiliary Switches

Auxiliary switches are used for signaling and control purposes. The various functions of the auxiliary switches (changeover) are shown in Figure 12-9.

Shunt Trips

The shunt trip is used for remote tripping.

The coil of the shunt trip is rated only for short-time operation.

It is not permissible with the circuit breaker open to apply a continuous opening command to the shunt trip in order to prevent the breaker from closing. This means that interlocking circuits with continuous commands may not be set up with shunt trips.

Undervoltage Releases

The circuit breaker cannot be closed until the undervoltage release is energized. If the release is not energized, the circuit breaker can only perform an idle switching operation.

Frequent idle switching actions should be avoided as they shorten the endurance of the circuit breaker.

Accessory Configurations for EG – RG Circuit Breakers

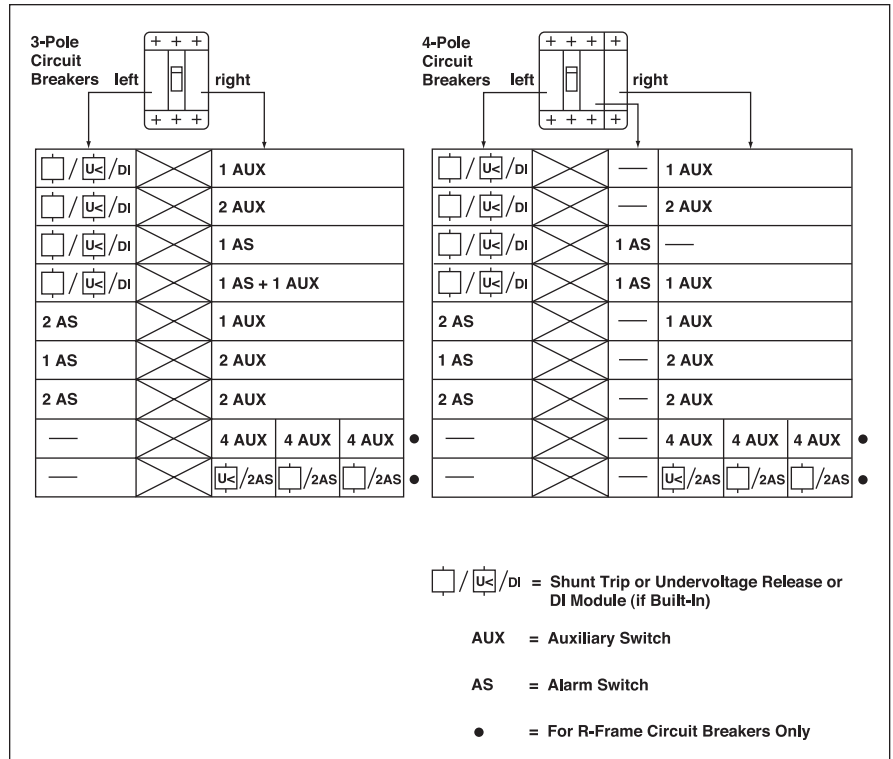


Figure 12-8. Internal Accessory Configurations

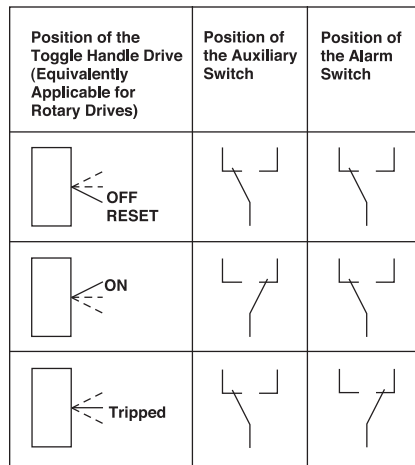


Figure 12-9. Contact Making by the Auxiliary and Alarm Switches as a Function of the Switching Position of the Circuit Breaker

Special Features and Accessories

Special Calibration

Special non-UL listed calibrations are available for certain ambient temperatures other than 40°C and for frequencies other than 50/60 Hz or dc. Reduced interrupting ratings will apply for 400 Hz applications.

50°C Calibration

Note: Breakers equipped with electronic trip units can operate reliably in ambient temperatures of 50°C. Add suffix "V3" to NG MCCBs to remove standard 40°C labeling.

Add suffix "V" to catalog number for complete thermal magnetic breaker when ordering listed ampere ratings for breakers to be used in 50°C ambients. 50°C ambient MCCBs are not UL listed.

Contact Eaton for availability.

Moisture-Fungus Treatment

All Cutler-Hammer Circuit Breaker cases are molded from glass-polyester which does not support the growth of fungus. Any parts which are susceptible to the growth of fungus will require special treatment.

Order by description.

Table 12-116. Calibrations and Treatment

Description	Frame									
	EG	Price U.S. \$	JG	Price U.S. \$	LG	Price U.S. \$	NG	Price U.S. \$	RG	Price U.S. \$
Special Calibration	✓		✓		✓		✓		✓	
Moisture-Fungus Treatment	✓		✓		✓		✓		✓	

Table 12-117. External Accessories and Test Kit

Description	Fit Type	Frame									
		EG	Price U.S. \$	JG	Price U.S. \$	LG	Price U.S. \$	NG	Price U.S. \$	RG	Price U.S. \$

External Accessories

Non-Padlockable Handle Block	Field	EFHB		—		—		LKD4		—	
Padlockable Handle Block	Field	EFPHB		—		—		—		—	
Padlockable Handle Block Off-Only	Field	EFPHBOFF		FJPHBOFF		LBHPOFF		—		—	
Padlockable Handle Lock Hasp	Field	EFPHL		FJPHL		LPHL		PLK5		HLK6	
Padlockable Handle Lock Hasp Off-Only	Field	EFPHLOFF		FJPHLOFF		LPHLOFF		PLK55OFF		HLK6OFF	
Kirk Key Interlock Kit ①②	Field	—		KYKJG		KYKLG		KYK4		KYK6	
Castell Key Interlock Kit ②③	Field	—		CTKJG		CTKLG		CTK4		CTK6	
Slide Bar Interlock ④	Field	EFSBI		FJSBI		LGSBI		SBK5		—	
Walking Beam Interlock ④	3-Pole	EG3WBI		JG3WBI		LG3WBI		WBL5		WBL6	
	4-Pole	EG4WBI		JG4WBI		LG4WBI		WBL5		—	
Electrical Operator ⑤	120 Vac	MOPEG240C		EOPFJ240C		EOPLG240C		EOP5T07		EOP6T08K	
	240 Vac	MOPEG240C		EOPFJ240C		EOPLG240C		EOP5T11		EOP6T11K	
	24 Vdc	MOPEG48D		EOPFJ24D		EOPLG24D		EOP5T21		—	
	48 Vdc	MOPEG48D		EOPFJ48D		EOPLG48D		EOP5T22		EOP6T21K	
	125 Vdc	MOPEG240C		EOPFJ240C		EOPLG240C		EOP5T26		—	
Plug-In Adapters	3-Pole	PAD3E		PAD3J		PAD3L		PAD53		—	
	4-Pole	PAD4E		PAD4J		PAD4L		—		—	
Rear Connecting Studs	Field	EFRCSDL		FJRCSDL		3P-LRCS3WK		—		—	
		EFRCSDS		FJRCSDS		4P-LRCS4WK		—		—	
		EFRCSWL		FJRCSWL		—		—		—	
		EFRCSWL		FJRCSWL		—		—		—	
		EFRCSWL		FJRCSWL		—		—		—	

Test Kit

Electronic Portable Test Kit	120 V 230 V	N/A N/A		MTST120V MTST230V		MTST120V MTST230V		STK2 —		STK2 —	
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① Provision only.

② See **Page 12-253** for bolt projection dimensions.

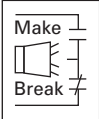
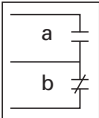
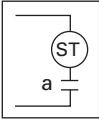
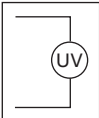
③ Castell bolt mounting hole must be 10 mm.

④ Requires two breakers.

⑤ Contact Eaton for availability of operators for EG- and NG-Frames before December 2004.

Accessories

Table 12-118. Accessories

Description	Pole Location	Frame		Price U.S. \$	NG	Price U.S. \$	RG ①	Price U.S. \$
		EG, JG & LG						
Field Fit Kit Catalog Numbers								
Alarm Lockout 	Make/Break	Left	—		A1L5LPK		—	
		Right	ALM1M1BEPK ②		A1L5RPK		A1L6RPK	
	2 Make/2 Break	Left	—		A2L5LPK		—	
		Right	ALM2M2BEPK ③		A2L5RPK		A2L6RPK	
Auxiliary Switch 	1A, 1B	Left	—		A1X5PK		—	
		Right	AUX1A1BPK		A1X5PK		—	
	2A, 2B	Left	—		A2X5PK		—	
		Right	AUX2A2BPK		A2X5PK		A2X6RPK	
	3A, 3B	Left	—		A3X5LPK		—	
		Right	—		A3X5RPK		—	
	4A, 4B	Left	—		—		—	
		Right	—		—		A4X6RPK	
	Auxiliary Switch / Alarm Lockout	Left	—		AA115LPK		—	
		Right	AUXALRMEPK ④		AA115RPK		—	
Shunt Trip — Standard 	120 Vac	Left	SNT120CPK ⑤		SNT5LP11K		—	
		Right	—		—		SNT6P11K	
	240 Vac	Left	SNT120CPK ⑤		SNT5LP11K		—	
		Right	—		—		SNT6P11K	
	12 Vdc	Left	SNT012CPK		—		—	
		Right	—		—		—	
	24 Vdc	Left	SNT060CPK		SNT5LP03K		—	
		Right	—		—		SNT6P03K	
	48 Vdc	Left	SNT060CPK		SNT5LP23K		—	
		Right	—		—		SNT6P23K	
	380 – 600 Vac	Left	SNT480CPK ⑥		—		—	
		Right	—		—		—	
220 – 250 Vdc or 380 – 440 Vac	—	—		SNT5LP14K		SNT6P14K		
480 – 600 Vac	—	—		SNT5LP18K		SNT6P18K		
Shunt Trip — Low Energy	Left	—		LST5LPK		—		
	Right	—		—		LST6RPK		
Undervoltage Release Mechanism 	110 – 127 Vac	Left	UVR120APK		UVH5LP08K		—	
		Right	—		—		UVH6RP08K	
	208 – 240 Vac	Left	UVR240APK		UVH5LP11K		—	
		Right	—		—		UVH6RP11K	
	24 Vdc, Vac	Left	UVR024CPK		UVH5LP21K ⑦		—	
		Right	—		—		UVH6RP21K ⑦	
	48 – 60 Vdc	Left	UVR048DPK		UVH5LP23K		—	
		Right	—		—		UVH6RP23K	
	12 Vdc, Vac	Left	UVR012CPK		—		—	
		Right	—		—		—	
	48 – 60 Vac	Left	UVR048APK		UVH5LP05K		—	
		Right	—		—		UVH6RP05K	
	120 Vdc	Left	UVR125DPK		UVH5LP26K		—	
		Right	—		—		UVH6RP26K	
	220 – 250 Vdc	Left	UVR250DPK		UVH5LP28K		—	
		Right	—		—		UVH6RP28K	
	380 – 500 Vac	Left	UVR480APK		UVH5LP29K		—	
		Right	—		—		UVH6RP29K	
	525 – 600 Vac	Left	UVR600APK		—		—	
		Right	—		—		—	
12 Vdc	Left	—		UVH5LP20K		—		
	Right	—		—		UVH6RP20K		
12 Vac	Left	—		UVH5LP02K		—		
	Right	—		—		UVH6RP02K		

① All accessories mount in the RH cavity which will accept one each of shunt trip, UVR, auxiliary switch and alarm switch.
 ② Part number for JG and LG is ALM1M1BJPK.

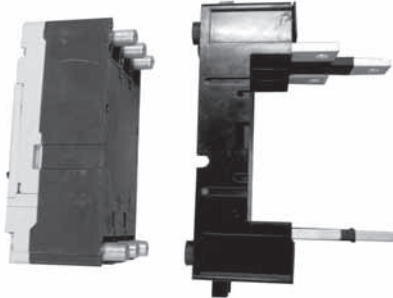
③ Part number for JG and LG is ALM2M2BJPK.
 ④ Part number for JG and LG is AUXALRMJPK.
 ⑤ 110 – 125 Vdc, 50/60 Hz.
 ⑥ 380 – 600 Vdc, 50/60 Hz.

⑦ 24 Vdc only use UVH5LP03K (NG) UVH6RP03K (RG) for 24 Vac.

Plug-in Blocks and Drawout Cassettes

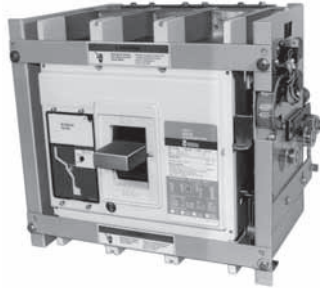
Plug-in Blocks

Plug-in adapters simplify installation and front removal of circuit breakers. Plug-ins are available for rear connection applications on 3- and 4-pole circuit breakers. Trip on drawout interlock kits are included. Stabs for EG, JG and LG plug-ins rotate 90° for flexible installation. Use terminal shields for IP30 protection.



LG Breaker with Plug-in Block

Drawout Cassette



Drawout Cassette



JG and LG Drawout Cassettes

The Drawout Cassette is available for use with JG, LG and NG, 3- and 4-pole breakers. Also available are drawout cassettes for use with the standard 3-pole 65 and 100 kA/480 Vac, 1600 ampere and 2000 ampere RG circuit breakers. The cassettes consist of two separate components: the movable mechanism, which attaches to the breaker, and the stationary mechanism, which houses in the cassette. The stationary mechanism is shipped separately for the RG frame breakers. For the JG, LG and NG drawout cassettes, all necessary parts for installation are included in the one catalog number.

Features of the drawout cassettes for the JG, LG and NG include:

- Trip on drawout — Breaker will trip if it is in the ON position when withdrawn from the cassette.
- Secondary Terminal Block — The drawout cassettes include a secondary terminal block for easier access when wiring low voltage accessories, including shunts and undervoltage releases.

The drawout mechanism has three primary positions:

- Connected — The breaker is fully connected to the primary stabs and secondary contacts.
- Disconnected — Both the primary stabs and the secondary contacts are disconnected.
- Withdraw — The breaker can be removed from the cassette.

Table 12-120. RG Drawout Cassette

Description	Catalog Number	Price U.S. \$
-------------	----------------	---------------

65 kA/480 Vac Version

Movable Mechanism	RD20DOM ②	
Stationary Mechanism	RD20DOS ③ RD20DOSS ④	

100 kA/480 Vac Version

Movable Mechanism	RDC20DOM ②	
Stationary Mechanism	RDC20DOS ③ RDC20DOSS ④	

② List price included in price of the stationary mechanism.

③ Without shutters.

④ With shutters.

Movable mechanism must be ordered with RG circuit breaker and is shipped mounted to circuit breaker frame. Stationary mechanism is ordered separately.

Table 12-121. JG, LG and NG Drawout Cassettes

Breaker Frame	Poles	Catalog Number	Price U.S. \$
JG	3	JG3DOM	
	4	JG4DOM	
LG	3	LG3DOM	
	4	LG4DOM	
NG	3	NG3DOM	
	4	NG4DOM	

Product Selection

Table 12-119. Plug-in Blocks

Breaker Frame	Poles	Catalog Number	Price U.S. \$
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EG-, JG- and LG-Frame Plug-in Blocks

EG	3	PAD3E	
EG	4	PAD4E	
JG	3	PAD3J	
JG	4	PAD4J	
LG	3	PAD3L	
LG	4	PAD4L	

Trip-on Drawout Interlock Kit ①

EG	3, 4	PIILEG	
JG	3, 4	PIILJG	
LG	3, 4	PIILLG	

Terminal Shields IP30

EG	3	EFTS3K	
EG	4	EFTS4K	
JG	3	FJTS3K	
JG	4	FJTS4K	
LG	3	LTS3K	
LG	4	LTS4K	

Position Switch

EG	3, 4	PADILE	
JG	3, 4	PADILJ	
LG	3, 4	PADILL	

① Included with plug-in block. Trips the breaker when breaker is removed from plug-in block.

Handle Mechanisms

Handle Mechanisms Overview

Handle mechanisms are used to operate molded case circuit breakers, molded case switches and motor circuit protectors. They are available in three basic configurations — Flange Mounted, Through-the-Door and Direct (Close-Coupled) — providing safe, dependable operation and ease of installation.

Flange Mounted

- Flex Shaft

Through-the-Door

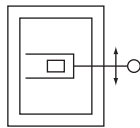
- Universal Rotary

Direct (Close Coupled)

- Universal Direct
- Euro IEC

Handle mechanisms are typically used on enclosed circuit breakers, control panels and motor control centers in many different applications. Eaton Electrical has a handle mechanism for virtually any need.

Flange Mounted Handle Mechanisms



The Flex Shaft™

Flange Mounted handle mechanisms mount on the flange of an enclosure door. The Flex Shaft is an extra heavy-duty mechanism that includes a flexible shaft in various lengths, 3 feet (0.9 m) through 10 feet (3 m) for use with various size enclosures.

The Flex Shaft handle will accept up to three padlock shackles, each with a maximum diameter of 3/8 inch (9.5 mm). Can be used with NEMA 12 fabricated enclosures. An optional handle is available for Flex Shaft that is suitable for use with NEMA 4 environments.

Flex Shaft comes preset from the factory, requiring only minor field adjustments on installation, which takes about 10 minutes — a significant time savings compared to installation of other types of flange handle mechanisms. The Flex Shaft mechanism also takes up less interior enclosure space than competitive designs and the handle fits standard flange cutouts. Flex Shaft handle can be remotely mounted from breaker, where an operator can use it by “funneling” the cable through conduit.

Flex Shaft is UL listed under File E64893 and meets CSA requirements.

Note: NEMA 4X handle mechanisms are available. Add Suffix X to the complete Catalog Number.

Note: When selecting the length of shaft, ensure minimum bending radius of 4 inches (101.6 mm) is maintained to operate properly.

The standard method of shipment includes the mechanism preset at the factory; however, minor field adjustments may be required.

Flex Shaft Ordering Information

Table 12-122. Flex Shaft Ordering Information

Breaker Frame	Flexible Shaft Length in Feet (m)									
	2 (0.61)		3 (.9)		4 (1.2)		5 (1.3)		6 (1.8)	
	Catalog Number	Price U.S. \$	Catalog Number	Price U.S. \$	Catalog Number	Price U.S. \$	Catalog Number	Price U.S. \$	Catalog Number	Price U.S. \$
EG	EHMFS02		EHMFS03		EHMFS04		EHMFS05		EHMFS06	
JG	N/A		JHMFS03		JHMFS04		JHMFS05		JHMFS06	
LG	N/A		—		LHMFS04		—		—	
NG	N/A		N/A		F5S04CI		F5S05CI		F5S06CI	
RG	N/A		N/A		F6S04		F6S05		F6S06	

Breaker Frame	Flexible Shaft Length in Feet (m)							
	7 (2.1)		8 (2.4)		9 (2.7)		10 (3.1)	
	Catalog Number	Price U.S. \$	Catalog Number	Price U.S. \$	Catalog Number	Price U.S. \$	Catalog Number	Price U.S. \$
EG	EHMFS07		EHMFS08		EHMFS09		EHMFS10	
JG	JHMFS07		JHMFS08		JHMFS09		JHMFS10	
LG	LHMFS07		—		—		LHMFS10	
NG	N/A		N/A		N/A		F5S10CI	
RG	N/A		N/A		N/A		N/A	

Note: Add Suffix L to the complete Catalog Number for 6-inch (152.4 mm) handle.

Note: 3-Pole only for EG, 3 and 4 Pole for JG and LG.

Note: EG and LG can be left or right-hand mounted.

Flex Shaft Accessories (E- through R-Frame)

Table 12-123. NEMA 12 Safety Door Hardware for Flex Shaft ①

Handle Length in Inches (mm)	Catalog Number ②	Price U.S. \$
4.00 (101.6)	C361KJ4	
6.00 (152.4)	C361KJ6	
Roller Latch ③	C361KR	

① Customer: Consult with box manufacturer for correct door hardware and any adapters required for assembly.

② The 1/4-inch x 1/2-inch (6.35 x 12.7 mm) standard mill rectangular locking bar is not supplied with these kits.

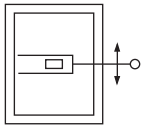
③ Third roller latch for use with 4- or 6-inch (101.6 or 152.4 mm) handle when 3 point latching is required.

Table 12-124. NEMA — IP Crossover

NEMA Type	IP Type
1	IP20
3R	IP55
12	IP54
4/4X	IP66

Handle Mechanisms

Through-the-Door Handle Mechanisms



Universal Rotary

The Cutler-Hammer Universal Rotary is suitable for use with NEMA 12 enclosure types. An optional NEMA 4/4X handle mechanism is also available. All rotary handle mechanisms include a handle "Lock Off," to prevent turning the breaker ON while in the OFF position. All Rotary handles indicate ON/OFF/Tripped/Reset positions, however, Universal Rotary has the added feature of international markings for ON (I) and OFF (O). The Universal Rotary is made of molded material. Inside handle is lockable.

The Universal Rotary mechanisms for EG, JG and LG MCCBs can be operated by hand with the door open or "locked off" to prevent operation with the door open.

For the NG-Frame MCCBs, a Cutler-Hammer Rotary with a metal handle (Table 12-126) is also available.

4/4X Handle Mechanism



EG-Frame



**JG & LG-Frames
(JG Shown)**

Table 12-125. Universal Rotary Ordering Information

Shaft Length in Inches (mm)	Handle Color	NEMA Rating	Complete Catalog Number ①		Price U.S. \$
			NEMA 1, 3R, 12	Price U.S. \$	
EG-Frame					
6.00 (152.4)	Black	1, 12	EHMVD06B		
12.00 (304.8)	Black	1, 12	EHMVD12B		
24.00 (609.6)	Black	1, 12	EHMVD24B		
6.00 (152.4)	Red	1, 12	EHMVD06R		
12.00 (304.8)	Red	1, 12	EHMVD12R		
24.00 (609.6)	Red	1, 12	EHMVD24R		
6.00 (152.4)	Black	4, 4X, 3R	EHMVD06BX		
12.00 (304.8)	Black	4, 4X, 3R	EHMVD12BX		
24.00 (609.6)	Black	4, 4X, 3R	EHMVD24BX		
6.00 (152.4)	Red	4, 4X, 3R	EHMVD06RX		
12.00 (304.8)	Red	4, 4X, 3R	EHMVD12RX		
24.00 (609.6)	Red	4, 4X, 3R	EHMVD24RX		
JG-Frame					
6.00 (152.4)	Black	1, 12	FJHMVD06B		
12.00 (304.8)	Black	1, 12	FJHMVD12B		
24.00 (609.6)	Black	1, 12	FJHMVD24B		
6.00 (152.4)	Red	1, 12	FJHMVD06R		
12.00 (304.8)	Red	1, 12	FJHMVD12R		
24.00 (609.6)	Red	1, 12	FJHMVD24R		
6.00 (152.4)	Black	4, 4X, 3R	FJHMVD06BX		
12.00 (304.8)	Black	4, 4X, 3R	FJHMVD12BX		
24.00 (609.6)	Black	4, 4X, 3R	FJHMVD24BX		
6.00 (152.4)	Red	4, 4X, 3R	FJHMVD06RX		
12.00 (304.8)	Red	4, 4X, 3R	FJHMVD12RX		
24.00 (609.6)	Red	4, 4X, 3R	FJHMVD24RX		
LG-Frame					
6.00 (152.4)	Black	1, 12	KLHMVD06B		
12.00 (304.8)	Black	1, 12	KLHMVD12B		
24.00 (609.6)	Black	1, 12	KLHMVD24B		
6.00 (152.4)	Red	1, 12	KLHMVD06R		
12.00 (304.8)	Red	1, 12	KLHMVD12R		
24.00 (609.6)	Red	1, 12	KLHMVD24R		
6.00 (152.4)	Black	4, 4X, 3R	KLHMVD06BX		
12.00 (304.8)	Black	4, 4X, 3R	KLHMVD12BX		
24.00 (609.6)	Black	4, 4X, 3R	KLHMVD24BX		
6.00 (152.4)	Red	4, 4X, 3R	KLHMVD06RX		
12.00 (304.8)	Red	4, 4X, 3R	KLHMVD12RX		
24.00 (609.6)	Red	4, 4X, 3R	KLHMVD24RX		
NG-Frame					
6.00 (152.4)	Black	1	HMVD5B		
6.00 (152.4)	Black	1	HMVD5BT ②		
6.00 (152.4)	Black	4, 4X, 3R	WHM5R06X		
12.00 (304.8)	Black	4, 4X, 3R	WHM5R12X		
16.00 (406.4)	Black	4, 4X, 3R	WHM5R16X		
24.00 (609.6)	Black	4, 4X, 3R	WHM5R24X		
RG-Frame					
9.00 (235.0)	Black	1	HMVD6B		

① Complete catalog number includes handle, mechanism, shaft and mounting hardware.

② Same as HMVD5B, except uses R-Frame T handle.

Table 12-126. Cutler-Hammer Rotary Ordering Information — NG-Frame

Shaft Length in Inches (mm)	Handle Color	Complete Catalog Number ③			
		NEMA 1, 3R, 12	Price U.S. \$	NEMA 4/4X	Price U.S. \$
6.00 (152.4)	Black	WHM5R06		WHM5R06X	
12.00 (304.8)	Black	WHM5R12		WHM5R12X	
16.00 (406.4)	Black	WHM5R16		WHM5R16X	
24.00 (609.6)	Black	WHM5R24		WHM5R24X	

③ Complete catalog number includes handle, mechanism, shaft and mounting hardware.

Handle Mechanisms

**Direct (Close-Coupled)
Handle Mechanisms**



Universal Direct (EG – LG)

Direct (Close-Coupled) Handle Mechanisms mount directly to the circuit breaker. They are used in shallow enclosures where the standard variable depth Through-the-Door type mechanism is not practical or cannot be used. They are typically for applications where high volume, standardized enclosures are being fabricated.

NEMA Ratings

Rated NEMA 1 and NEMA 12.

The Universal Direct handle mechanism is designed exclusively for the new Cutler-Hammer EG, JG and LG circuit breakers. It is available as standard with a door interlock to prevent opening the enclosure while the circuit breaker is in the ON position. It is also available without a door interlock.

The Universal Direct handle mechanism is UL 489 listed, IEC 60947-1/2 and meets CSA requirements.

The Euro IEC Direct handle mechanism is designed for NG and RG MCCBs. The Euro IEC Direct handle mechanism is 60947-112.

Table 12-127. Universal Direct Ordering Information

Frame	Black Handle Color				Red Handle Color	
	with Interlock	Price U.S. \$	without Interlock	Price U.S. \$	without Interlock	Price U.S. \$
	Catalog Number		Catalog Number		Catalog Number	
EG	EHMCCBI		EHMCCB		EHMCCR	
JG	—		JHMCCB		JHMCCR	
LG	—		LHMCCB		LHMCCR	

Table 12-128. Euro IEC Direct Ordering Information

Frame	Catalog Number	Price U.S. \$
	Black Handle	
NG	HMVD5B	
RG	HMVD6B	

Dimensions

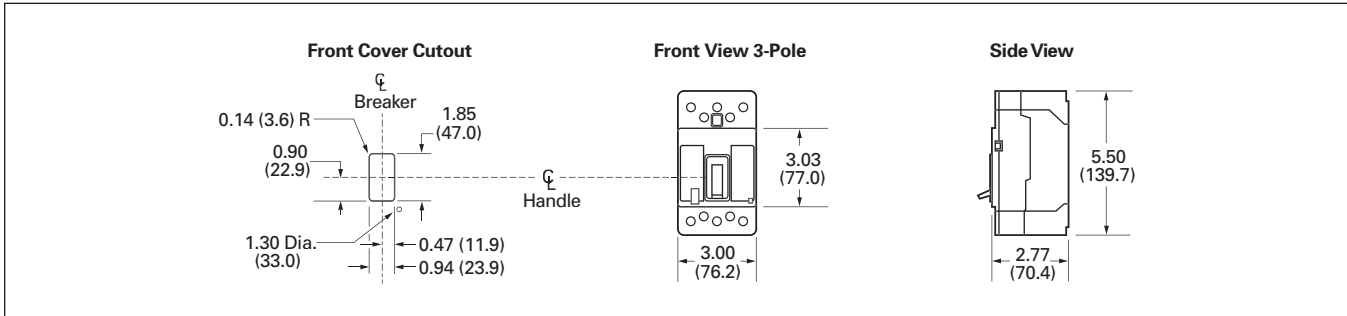


Figure 12-10. EG-Frame — Dimensions in Inches (mm)

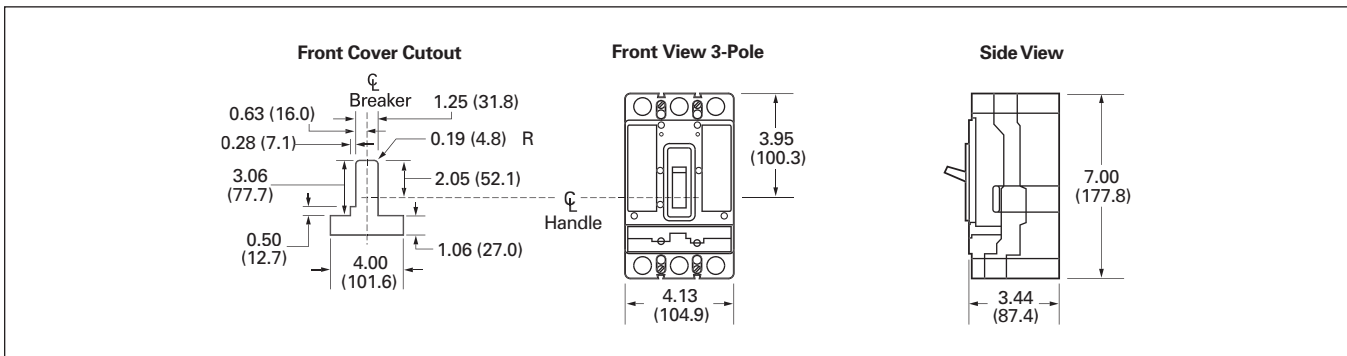


Figure 12-11. JG-Frame — Dimensions in Inches (mm)

Frame Sizes LG through NG

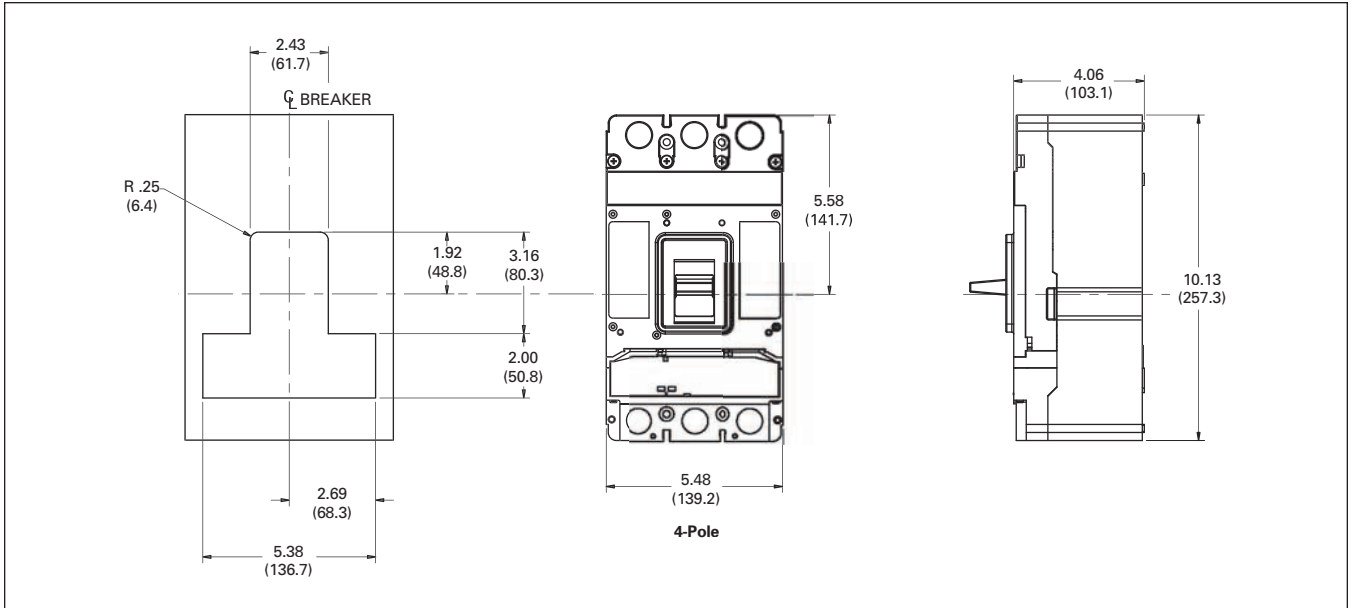


Figure 12-12. LG-Frame — Dimensions in Inches (mm)

Note: TA63IL, T63IL, T632L, TA632L terminals add 1.19 inches (30.2 mm) to line or load side of LG. LTS3K or LTS4K terminal covers add 2.13 inches (54.1 mm) to line or load side of LG.

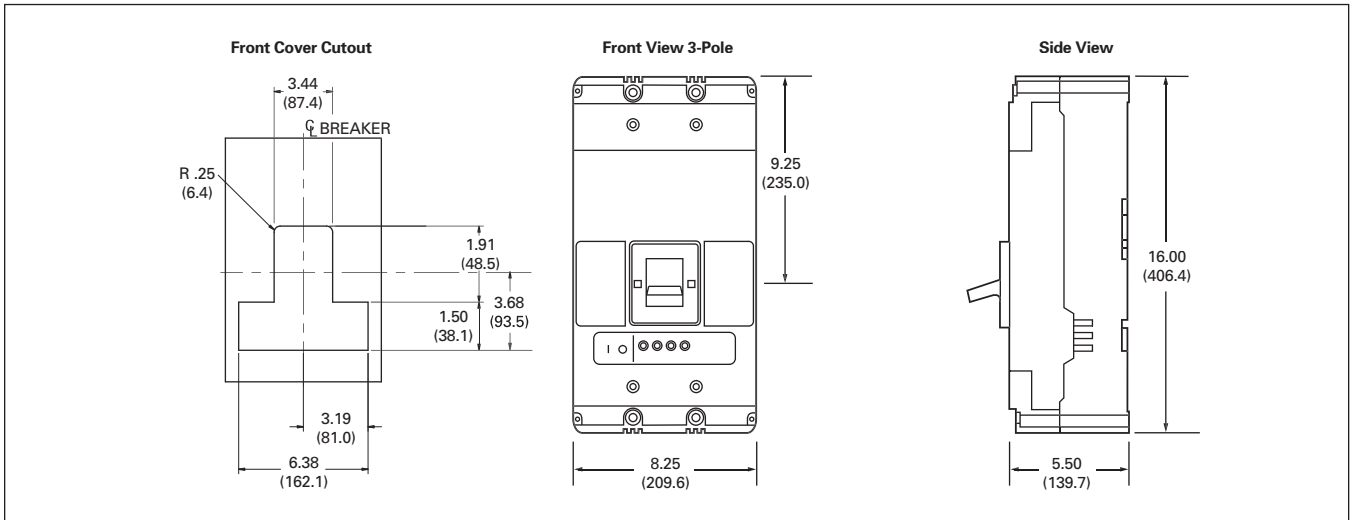


Figure 12-13. NG-Frame — Dimensions in Inches (mm)