

Series G, 15–2500 Amperes for UL, CSA and IEC Applications

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Product Overview

Series G, 15–2500 Amperes for UL, CSA and IEC Applications

Eaton 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 Eaton Series C ND and RD designs.

The 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).

Series G molded case circuit breakers are also available in direct current options. Please see Specialty Breakers **Section 2.6** for more details.

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 Eaton circuit breakers are made possible by the best contact designs in circuit breaker history. Our technology creates a high-speed “blow-open” action using the electromechanical forces produced by high-level fault currents.

Eaton 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 Eaton 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.

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.

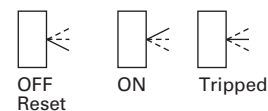
Operating Mechanisms

Eaton 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.

Positions of the Toggle Handle Drive



Standards and Certifications

Eaton Series G circuit breakers meet applicable UL 489 and IEC 60947-2 standards.

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 Electromechanical 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 Eaton molded case circuit breakers continue to meet their exacting standards.

ISO Certification

Eaton circuit breakers are manufactured in ISO® certified facilities.

Product Selection Overview

Electronic Trip Units (Digitrip RMS Trip Units)—Multi-Function Electronic Trip Units for All Applications

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True rms Sensing

Digitrip RMS trip units use Eaton's 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 Eaton Series G circuit breakers JG, LG, NG and RG, as well as Series C FD, KD, LD and MDL circuit breakers.

Digitrip 310+ trip units are equipped with an integrated I_r switch that allows users to modify the continuous current rating of the breaker without having to replace a rating plug. This provides further flexibility for coordination in systems. The trip units may be used in 50 Hz or 60 Hz applications. The Digitrip 310+ offers true rms sensing, is front adjustable and has an optional local display of current and cause of trip.

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 that provides the basic LS curve shaping function.

Digitrip 310+ trip units also include selectable long time delay (t_{LD}) and pickup settings (I_p). A rating plug is not required.

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

Digitrip RMS 310+ LSG and LSIg units are available with ground fault pickup and flat response ground fault delay. Ground fault alarm options are available with trip and no trip functionality as a means to notify users of a ground fault condition with the option to maintain the breaker online.

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.

Arcflash Reduction Maintenance System

Arcflash Reduction Maintenance System is an available feature on KD, LG, LD, MDL, NG and RG frames with 310+ electronic trip units. This feature increases worker safety by providing an accelerated instantaneous trip unit to reduce arc flash. Additionally, LG, NG and RG frames with the Arcflash Reduction Maintenance System feature include a fully adjustable instantaneous setting.

Digitrip RMS 610 and 910

Digitrip RMS 610 and 910 trip units are available with Eaton 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.

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 Eaton 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.

JG-Frame (63–250 Amperes)



JG-Frame (63–250 Amperes)

Product Description

JG breaker is HACR rated.

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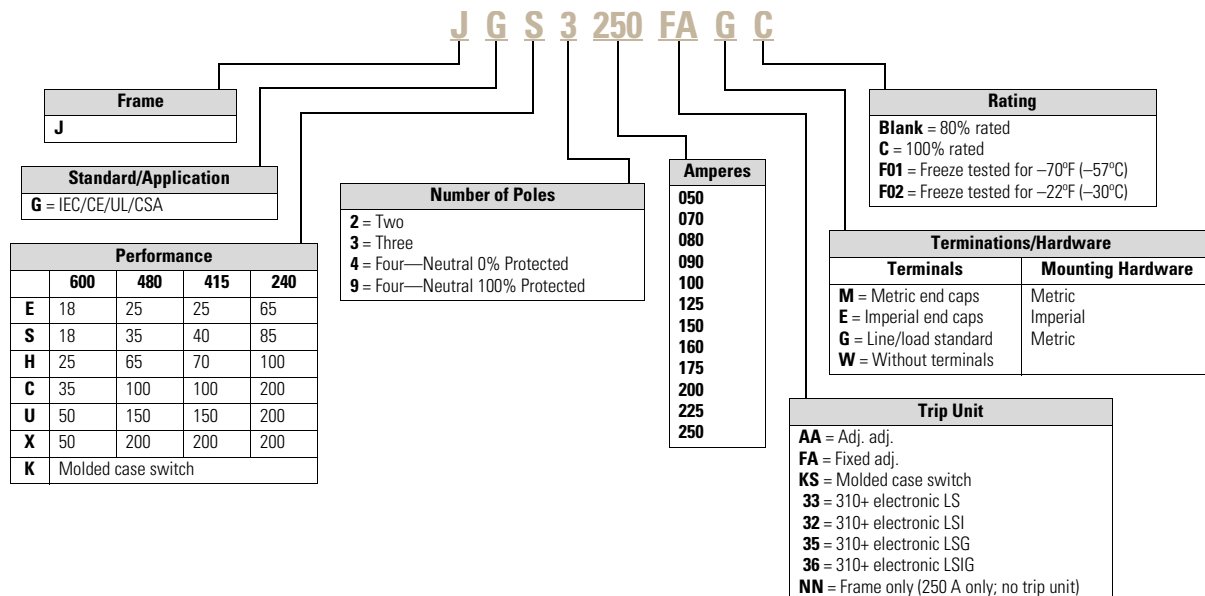
Molded Case Circuit Breakers

Series G

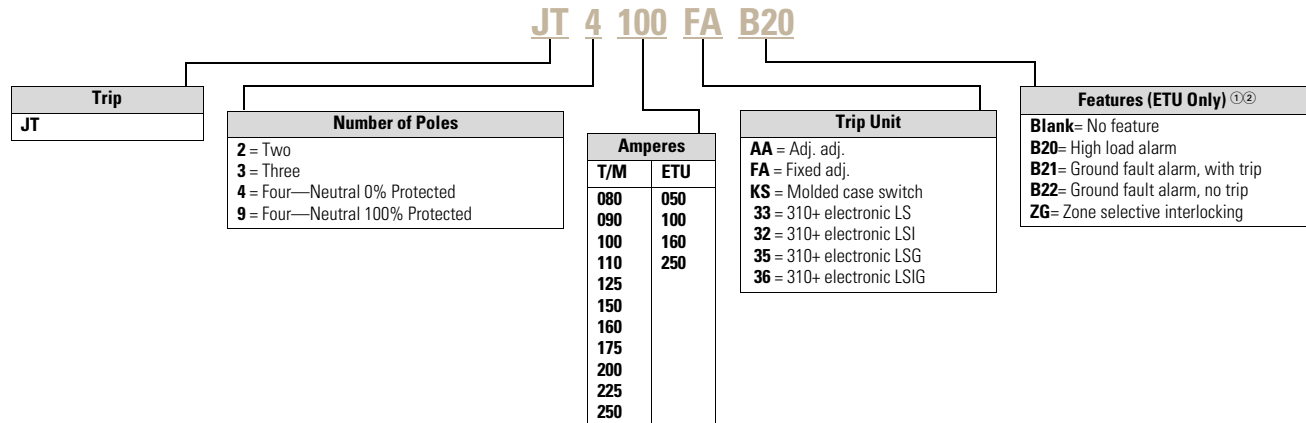
Catalog Number Selection

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.

Series G—JG-Frame (63–250 Amperes)



Trip Unit



Notes

- ① Bxx features cannot be combined with other Bxx features.
② B21 and B22 available with LSG and LSIG trip units.

Product Selection

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

JG-Frame



JG-Frame—IEC/CE/UL/CSA—25/25

Maximum Continuous Amperes	Magnetic Range	Two-Pole Fixed Thermal, Adjustable Magnetic Catalog Number	Three-Pole Fixed Thermal, Adjustable Magnetic Catalog Number	Adjustable Thermal, Adjustable Magnetic ^① Catalog Number	Four-Pole 0% ^② Fixed Thermal, Adjustable Magnetic Catalog Number	Adjustable Thermal, Adjustable Magnetic ^① Catalog Number
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

JG-Frame



JG-Frame—IEC/CE/UL/CSA—40/35, Two-Pole

Maximum Continuous Amperes	Magnetic Range	Two-Pole Fixed Thermal, Adjustable Magnetic Catalog Number	Three-Pole Fixed Thermal, Adjustable Magnetic Catalog Number	Adjustable Thermal, Adjustable Magnetic ^① Catalog Number	Four-Pole 0% ^② Fixed Thermal, Adjustable Magnetic Catalog Number	Adjustable Thermal, Adjustable Magnetic ^① Catalog Number
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

Notes

^① EC-EN 60947-2 only. Adjustment is 0.8 and 1.0.

^② 9 for 0–100% neutral protection. Neutral is on LH side.

JG-Frame



JG-Frame—IEC/CE/UL/CSA—70/65

Maximum Continuous Amperes	Magnetic Range	Two-Pole Fixed Thermal, Adjustable Magnetic Catalog Number	Three-Pole Fixed Thermal, Adjustable Magnetic Catalog Number	Adjustable Thermal, Fixed Magnetic ^① Catalog Number	Four-Pole 0% ^② Fixed Thermal, Adjustable Magnetic Catalog Number	Adjustable Thermal, Fixed Magnetic ^① Catalog Number
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

Notes

^① EC-EN 60947-2 only. Adjustment is 0.8 and 1.0.

^② 9 for 0–100% neutral protection. Neutral is on LH side.

Two-Pole not available in IEC/CE/UL/CSA 100/100, 150/150

JG-Frame

JG-Frame—IEC/CE/UL/CSA—100/100, Current Limiting



Maximum Continuous Amperes	Magnetic Range	Three-Pole Fixed Thermal, Adjustable Magnetic Catalog Number	Adjustable Thermal, Adjustable Magnetic ^① Catalog Number	Four-Pole 0% ^② Fixed Thermal, Adjustable Magnetic Catalog Number	Adjustable Thermal, Adjustable Magnetic ^① Catalog Number
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

JG-Frame

JG-Frame—IEC/CE/UL/CSA—150/150, Current Limiting



Maximum Continuous Amperes	Magnetic Range	Three-Pole Fixed Thermal, Adjustable Magnetic Catalog Number	Adjustable Thermal, Adjustable Magnetic ^① Catalog Number	Four-Pole 0% ^② Fixed Thermal, Adjustable Magnetic Catalog Number	Adjustable Thermal, Adjustable Magnetic ^① Catalog Number
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

Notes

^① EC-EN 60947-2 only. Adjustment is 0.8 and 1.0.

^② 9 for 0–100% neutral protection. Neutral is on LH side.

Two-Pole not available in IEC/CE/UL/CSA 200/200

2

JG-Frame**JG-Frame—IEC/CE/UL/CSA 200/200, Current Limiting**

Maximum Continuous Amperes	Magnetic Range	Three-Pole Fixed Thermal, Adjustable Magnetic Catalog Number	Adjustable Thermal, Adjustable Magnetic ^① Catalog Number	Four-Pole ^② Fixed Thermal, Adjustable Magnetic Catalog Number	Adjustable Thermal, Adjustable Magnetic ^① Catalog Number
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

Molded Case Switches ^③

Catalog
Number

JGK3250KSG

JGK7250KSG

Notes

- ^① EC-EN 60947-2 only. Adjustment is 0.8 and 1.0.
- ^② 9 for 0–100% neutral protection. Neutral is on LH side.
- ^③ Molded case switches will trip above 2500 amperes.

Frame—IC Rating at 415/480 Volts

Maximum Amperes	Two-Pole Catalog Number	Three-Pole Catalog Number	Four-Pole 0% Catalog Number
25/25			
250	JGE2250NN	JGE3250NN	JGE4250NN
40/35			
250	JGS2250NN	JGS3250NN	JGS4250NN
70/65			
250	JGH2250NN	JGH3250NN	JGH4250NN
100/100 Current Limiting Per UL 489			
250	—	JGC3250NN	JGC4250NN
150/150 Current Limiting Per UL 489			
250	—	JGU3250NN	JGU4250NN
200/200 Current Limiting Per UL 489			
250	—	JGX3250NN	JGX4250NN
25/25 100% Rated Per UL 489 ^①			
250	—	JGE3250NNC	—
40/35 100% Rated Per UL 489 ^①			
250	—	JGS3250NNC	—
70/65 100% Rated Per UL 489 ^①			
250	—	JGH3250NNC	—

Thermal-Magnetic Trip Unit

Ampere Rating	Range	Catalog Number			Range	Catalog Number	
70	350–700	JT2070FA	JT3070FA	—	—	JT4070FA	—
80	400–800	—	JT3080FA	JT3080AA ^②	64–100	—	JT4080AA ^②
90	450–900	JT2090FA	JT3090FA	—	—	JT4090FA	—
100	500–1000	JT2100FA	JT3100FA	JT3100AA ^②	80–100	JT4100FA	JT4100AA ^②
125	625–1250	JT2125FA	JT3125FA	JT3125AA ^②	100–125	JT4125FA	JT4125AA ^②
150	750–1550	JT2150FA	JT3150FA	—	—	JT4150FA	—
160	800–1600	—	—	JT3160AA ^②	128–160	—	JT4160AA ^②
175	875–1750	JT2175FA	JT3175FA	—	—	JT4175FA	—
200	1000–2000	JT2200FA	JT3200FA	JT3200AA ^②	160–200	JT4200FA	JT4200AA ^②
225	1125–2250	JT2225FA	JT3225FA	—	—	JT4225FA	—
250	1250–2500	JT2250FA	JT3250FA	JT3250AA ^②	200–250	JT4250FA	JT4250AA ^②

Notes

^① Components—100% rated frame.

^② Adjustable thermal trip units are typically used in IEC markets and are not UL or CSA listed.

310+ Electronic Trip UnitsSee 310+ adjustability specifications on **Page V4-T2-182**.

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JG 310+ Electronic Trip Units

Ampere Rating	LS Catalog Number	LSI Catalog Number	LSG Catalog Number	LSIG Catalog Number	Neutral CT for LSG and LSIG ^① Catalog Number
Three-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
Four-Pole ^{②③}					
50	JT405033	JT405032	JT405035	JT405036	—
100	JT410033	JT410032	JT410035	JT410036	—
160	JT416033	JT416032	JT416035	JT416036	—
250	JT425033	JT425032	JT425035	JT425036	—

310+ Electronic Trip Unit Accessories

Description	Catalog Number
Electronic portable test kit	MTST230V
Trip unit tamper protection wire seal	5108A03H01
External neutral sensor (250 A)	JGFCT250
External neutral sensor (160 A)	JGFCT160
External neutral sensor (100 A)	JGFCT100
External neutral sensor (80 A)	JGFCT050
Breaker-mount cause-of-trip indication	TRIP-LED
Breaker-mount ammeter module	DIGIVIEW
Remote-mount ammeter module	DIGIVIEWR06

Notes

- ① For use on a three-pole breaker used in a four-wire system if ground fault protection for the neutral is required.
- ② Neutral protection 4 = 0%, 7 = 100% electronic trip unit neutral protection is not adjustable.
- ③ Four-pole breakers with LSG and LSIG trip units are only available with 0% neutral protection.

Complete Breaker with 310+ Electronic Trip UnitsSee 310+ adjustability specifications on **Page V4-T2-182**.**IEC/UL/CSA—25/25**

Ampere Rating	LS Catalog Number	LSI Catalog Number	LSG Catalog Number	LSIG Catalog Number	Neutral CT for LSG and LSIG ^① Catalog Number
Three-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
Four-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

Ampere Rating	LS Catalog Number	LSI Catalog Number	LSG Catalog Number	LSIG Catalog Number	Neutral CT for LSG and LSIG ^① Catalog Number
Three-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
Four-Pole ^{②③}					
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

Ampere Rating	LS Catalog Number	LSI Catalog Number	LSG Catalog Number	LSIG Catalog Number	Neutral CT for LSG and LSIG ^① Catalog Number
Three-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
Four-Pole ^②					
50	JGH405033G	JGH405032G	JGH405035G	JGH405036G	—
100	JGH410033G	JGH410032G	JGH410035G	JGH410036G	—
160	JGH416033G	JGH416032G	JGH416035G	JGH416036G	—
250	JGH425033G	JGH425032G	JGH425035G	JGH425036G	—

Notes^① Required for four-wire systems if neutral protection is required.^② Neutral protection 4 = 0%, 7 = 100% electronic trip unit neutral protection is not adjustable.^③ Four-pole breakers with LSG and LSIG trip units are only available with 0% neutral protection.

IEC/UL/CSA—100/100, Current Limiting Per UL 489

Ampere Rating	LS Catalog Number	LSI Catalog Number	LSG Catalog Number	LSIG Catalog Number	Neutral CT for LSG and LSIG ^① Catalog Number
Three-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
Four-Pole ^②					
50	JGC405033G	JGC405032G	JGC405035G	JGC405036G	—
100	JGC410033G	JGC410032G	JGC410035G	JGC410036G	—
160	JGC416033G	JGC416032G	JGC416035G	JGC416036G	—
250	JGC425033G	JGC425032G	JGC425035G	JGC425036G	—

IEC/UL/CSA—150/150, Current Limiting Per UL 489

Ampere Rating	LS Catalog Number	LSI Catalog Number	LSG Catalog Number	LSIG Catalog Number	Neutral CT for LSG and LSIG ^① Catalog Number
Three-Pole					
50	JGU305033G	JGU305032G	JGU305035G	JGU305036G	JGFCT050
100	JGU310033G	JGU310032G	JGU310035G	JGU310036G	JGFCT100
160	JGU316033G	JGU316032G	JGU316035G	JGU316036G	JGFCT160
250	JGU325033G	JGU325032G	JGU325035G	JGU325036G	JGFCT250
Four-Pole ^{②③}					
50	JGU405033G	JGU405032G	JGU405035G	JGU405036G	—
100	JGU410033G	JGU410032G	JGU410035G	JGU410036G	—
160	JGU416033G	JGU416032G	JGU416035G	JGU416036G	—
250	JGU425033G	JGU425032G	JGU425035G	JGU425036G	—

IEC/UL/CSA—200/200, Current Limiting Per UL 489

Ampere Rating	LS Catalog Number	LSI Catalog Number	LSG Catalog Number	LSIG Catalog Number	Neutral CT for LSG and LSIG ^① Catalog Number
Three-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
Four-Pole ^②					
50	JGX405033G	JGX405032G	JGX405035G	JGX405036G	—
100	JGX410033G	JGX410032G	JGX410035G	JGX410036G	—
160	JGX416033G	JGX416032G	JGX416035G	JGX416036G	—
250	JGX425033G	JGX425032G	JGX425035G	JGX425036G	—

Notes

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

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

③ Four-pole breakers with LSG and LSIG trip units are only available with 0% neutral protection.

JG 100% Rated Circuit Breaker—Thermal-Magnetic Trip Unit**Complete Breaker (Includes Frame, Trip Unit, Standard Terminals and Mounting Hardware)—IC Rating at 415/480 Volts****JG-Frame****JG-Frame—IEC/CE/UL/CSA—25/25**

Maximum Continuous Amperes	Magnetic Range	Three-Pole Fixed Thermal, Adjustable Magnetic Catalog Number
70	350–700	JGE3070FAGC
90	450–900	JGE3090FAGC
100	500–1000	JGE3100FAGC
125	625–1250	JGE3125FAGC
150	750–1550	JGE3150FAGC
160	800–1600	—
175	875–1750	JGE3175FAGC
200	1000–2000	JGE3200FAGC
225	1125–2250	JGE3225FAGC
250	1250–2500	JGE3250FAGC

JG-Frame—IEC/CE/UL/CSA—70/65

Maximum Continuous Amperes	Magnetic Range	Three-Pole Fixed Thermal, Adjustable Magnetic Catalog Number
70	350–700	JGH3070FAGC
90	450–900	JGH3090FAGC
100	500–1000	JGH3100FAGC
125	625–1250	JGH3125FAGC
150	750–1550	JGH3150FAGC
160	800–1600	—
175	875–1750	JGH3175FAGC
200	1000–2000	JGH3200FAGC
225	1125–2250	JGH3225FAGC
250	1250–2500	JGH3250FAGC

JG-Frame—IEC/CE/UL/CSA—40/35

Maximum Continuous Amperes	Magnetic Range	Three-Pole Fixed Thermal, Adjustable Magnetic Catalog Number
70	350–700	JGS3070FAGC
90	450–900	JGS3090FAGC
100	500–1000	JGS3100FAGC
125	625–1250	JGS3125FAGC
150	750–1550	JGS3150FAGC
160	800–1600	—
175	875–1750	JGS3175FAGC
200	1000–2000	JGS3200FAGC
225	1125–2250	JGS3225FAGC
250	1250–2500	JGS3250FAGC

JG 100% Rated 310+ Electronic Trip Unit Circuit BreakerSee 310+ adjustability specifications on **Page V4-T2-182**.

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IEC/UL/CSA—25/25

Ampere Rating	LS Catalog Number	LSI Catalog Number	LSG Catalog Number	LSIG Catalog Number	Neutral CT for LSG and LSIG ^① Catalog Number
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

Ampere Rating	LS Catalog Number	LSI Catalog Number	LSG Catalog Number	LSIG Catalog Number	Neutral CT for LSG and LSIG ^① Catalog Number
50	JGS305033GC	JGS305032GC	JGS305035GC	JGS305036GC	JGFCT050
100	JGS310033GC	JGS310032GC	JGS310035GC	JGS310036GC	JGFCT100
160	JGS316033GC	JGS316032GC	JGS316035GC	JGS316036GC	JGFCT160
250	JGS325033GC	JGS325032GC	JGS325035GC	JGS325036GC	JGFCT250

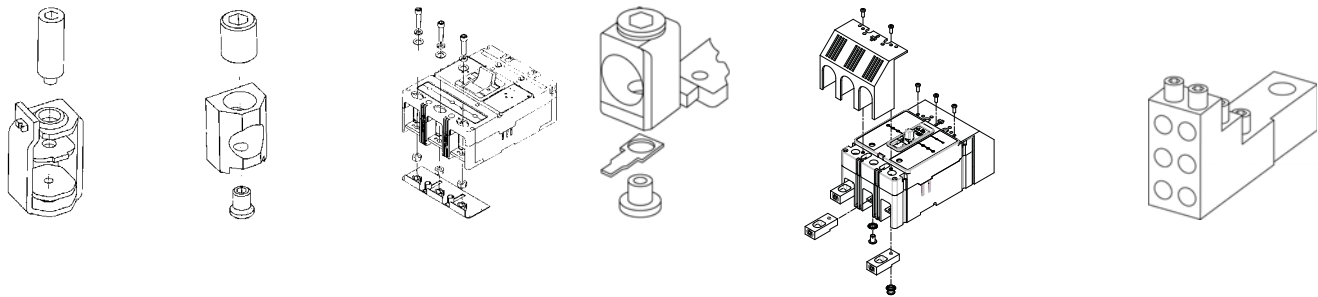
IEC/UL/CSA—70/65

Ampere Rating	LS Catalog Number	LSI Catalog Number	LSG Catalog Number	LSIG Catalog Number	Neutral CT for LSG and LSIG ^① Catalog Number
50	JGH305033GC	JGH305032GC	JGH305035GC	JGH305036GC	JGFCT050
100	JGH310033GC	JGH310032GC	JGH310035GC	JGH310036GC	JGFCT100
160	JGH316033GC	JGH316032GC	JGH316035GC	JGH316036GC	JGFCT160
250	JGH325033GC	JGH325032GC	JGH325035GC	JGH325036GC	JGFCT250

Note^① Required for four-wire systems if neutral protection is required.

Accessories Selection Guide and Ordering Information

JG-Frame



T250FJ	TA250FJ	Endcap Kit	Control Wire Terminal Kit	Rear Fed Terminals	Multiwire Connectors
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Load and Line Terminals

Maximum Breaker Amperes	Terminal Body Material	Wire Type	Metric Wire Range mm ²	AWG Wire Range/ Number of Conductors	Catalog Number
Standard Pressure Type Terminals					
250	Stainless steel	Cu	25–185	#4–350 (1)	T250FJ ①
250	Aluminum	Cu/Al	10–185	#8–350 (1)	TA250FJ ①②

JG-Frame circuit breakers include aluminum terminals TA250FJ as standard. When optional stainless steel only terminals are required, order by catalog number.

Endcap Kits

Number of Poles	Catalog Number	
	Metric	Imperial
3	FJ3RTWK	FJ3RTDK
4	FJ4RTWK	FJ4RTDK

Endcap kits are used on J250-Frame breaker to connect busbar or similar electrical connections. Includes hardware.

Control Wire Terminal Kit

Description	Catalog Number
Package of 14 (priced individually)	FJCWTK

For use with aluminum or copper terminals only.

Rear Fed Terminals

Maximum Amperes	Wire Size Range AWG Cu	Catalog Number
250	#4–350 kcmil	TA250JGRF
		3TA250JGRF

Rear fed terminals allow the cable to connect to the breaker from the back instead of the top. Terminal shields or interphase barriers are included with each rear fed terminal kit (depending on frame size). When catalog number starts with a 3, it indicates a kit with three terminals in each kit. Catalog number beginning with a TA indicates one terminal.

Base Mounting Hardware

Base mounting hardware is included with a circuit breaker or molded case switch. (Included with breaker.) If required separately, order 66A2546G02.

Terminal Shields IP30

Location	Number of Poles	Catalog Number
Line or Load	2, 3	FJTS3K
	4	FJTS4K

Interphase Barriers

Number of Poles	Catalog Number
3	FJIPBK ③
4	FJIPBK4 ③

Multiwire Connectors

Field-installed multiwire connectors for the load side (OFF) end terminals 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.

JG-Frame Multiwire Connectors Ordering Information (Package of 3)

Maximum Amperes	Wires per Terminal	Wire Size Range AWG Cu	Kit Catalog Number
250	3	14–2	3TA250FJ3
250	6	14–6	3TA250FJ6

Notes

- ① Individually packed.
- ② Standard line and load.
- ③ Individually priced.

Accessories

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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.

JG-Frame Accessories

Description	Reference Page	Two- and Three-Pole			Four-Pole			Neutral
		Left	Center	Right	Left	Center	Right	
Internal Accessories (Only one internal accessory per pole)								
Alarm lockout (Make/Break)	V4-T2-247	—	—	■	—	—	■	—
Auxiliary switch (1A, 1B)	V4-T2-247	—	—	■	—	—	■	—
Auxiliary switch (2A, 2B)	V4-T2-247	—	—	■	—	—	■	—
Auxiliary switch and alarm switch combination	V4-T2-247	—	—	■	—	—	■	—
Shunt trip—standard	V4-T2-247	■	—	—	■	—	—	—
Undervoltage release mechanism	V4-T2-248	■	—	—	■	—	—	—
External Accessories								
End cap kit	V4-T2-179	●	●	●	●	●	●	●
Control wire terminal kit	V4-T2-179	●	●	●	●	●	●	●
Rear fed terminals	V4-T2-179	●	●	●	●	●	●	●
Multiwire connectors	V4-T2-179	●	●	●	●	●	●	●
Base mounting hardware	V4-T2-179	●	●	●	●	●	●	●
Interphase barriers	V4-T2-179	●	●	●	●	●	●	●
Padlockable handle block	V4-T2-245	—	■	—	—	■	—	—
Padlockable handle lock hasp	V4-T2-245	□	—	□	□	—	□	—
Key interlock kit	V4-T2-245	□	—	□	□	—	□	—
Sliding bar interlock—requires two breakers	V4-T2-245	●	●	●	—	—	—	—
Electrical operator	V4-T2-245	●	●	●	●	●	●	●
Plug-in adapters	V4-T2-245	●	●	●	●	●	●	●
Handle mechanisms	V4-T2-527	●	●	●	●	●	●	●
Earth leakage/ground fault protector	V4-T2-230	●	●	●	●	●	●	●
Drawout cassette	V4-T2-253	●	●	●	●	●	●	●
Digitrip 310+ test kit	V4-T2-174	●	●	●	●	●	●	●
Ammeter/cause of trip display	V4-T2-244	●	●	●	●	●	●	●
Cause of trip LED module	V4-T2-244	●	●	●	●	●	●	●
Modifications (Refer to Eaton)								
Moisture fungus treatment	V4-T2-243	●	●	●	●	●	●	●
Freeze-tested circuit breakers	—	●	●	●	●	●	●	●
Marine/naval application, UL 489 supplement SA and SB	①	●	●	●	●	●	●	●

Legend

- Applicable in indicated pole position
- May be mounted on left or right pole—not both
- Accessory available/modification available

Note

① Contact Eaton.

Technical Data and Specifications

UL 489/IEC 60947-2 Interrupting Capacity (Symmetrical Amperes) (kA) Ratings

Circuit Breaker Type	Number of Poles	Volts AC (50/60 Hz)						Volts DC ^①		
		220–240		380–415		480	600	690 ^②		250 ^{②③}
		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 ^④	3, 4	200	200	100	100	100	35	16	12	42
JGU250 ^④	3, 4	200	200	150	150	150	50	18	14	50
JGX250 ^④	3, 4	200	200	200	200	200	50	18	14	50

UL 489 Current Limiting Data

Frame	Circuit	I _p (kA)	I ² T (10 ⁶ A ² S)
JGC	240 V/200 kA	45.1	1.820
JGC	480 V/100 kA	45.1	1.820
JGC	600 V/35 kA	32.8	2.140
JGU	240 V/200 kA	45.1	1.820
JGU	480 V/150 kA	45.1	1.820
JGU	600 V/50 kA	32.8	2.140
JGX	240 V/200 kA	45.1	1.820
JGX	480 V/200 kA	45.1	1.820
JGX	600 V/50 kA	32.8	2.140

JG 310+ Specifications

Description	Specification
Trip Unit Type	Digitrip RMS 310+
Breaker Type	
Frame designation	JG
Frames available	50 A, 100 A, 160 A, 250 A
Continuous current range (A)	20–250 A
Ground fault pickup (A)	10–250 A
Interrupting capacities at 480 Vac (kAIC)	35, 65, 100, 150, 200
100% rated	Yes
Protection	
Ordering options	LS, LSI, LSG, LSIG
Arcflash reduction maintenance system (or maintenance mode)	No
Interchangeable trip unit	Yes
High load alarm (suffix B20) ^⑤	Yes
Ground fault alarm with trip (suffix B21) ^⑤	Yes
Ground fault alarm, no trip (suffix B22) ^⑤	Yes
Zone selective interlocking (suffix ZG)	LSI, LSIG
Cause of trip indication	Yes
Thru-cover accessories	Yes

Notes

- ① DC ratings apply to substantially non-inductive circuits.
- ② Two-pole circuit breaker, or two poles of three-pole circuit breaker.
- ③ Time constant is 3 milliseconds minimum at 10 kA and 8 milliseconds minimum at 22 kA.
- ④ Current limiting per UL 489.
- ⑤ B2x suffixes cannot be combined with B2x suffixes.

JG 310+ Adjustability Specifications

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		JG Frame			
310+ Settings		50 A	100 A	160 A	250 A
I_r = continuous current or long delay pickup (amperes) (All 310+)	I_r				
	A	20	40	63	100
	B	20	45	80	125
	C	25	50	90	150
	D	30	63	100	160
	E	32	70	110	175
	F	40	80	125	200
	G	45	90	150	225
	H (= I_n)	50	100	160	250
t_r = long delay time (seconds) (All 310+)	Position 1	2	2	2	2
	Position 2	4	4	4	4
	Position 3	7	7	7	7
	Position 4	10	10	10	10
	Position 5	12	12	12	12
	Position 6	15	15	15	15
	Position 7	20	20	20	20
	Position 8	24	24	24	24
I_{sd} (x I_r) = short delay pickup (All 310+)	Position 1	2x	2x	2x	2x
	Position 2	3x	3x	3x	3x
	Position 3	4x	4x	4x	4x
	Position 4	5x	5x	5x	5x
	Position 5	6x	6x	6x	6x
	Position 6	7x	7x	7x	7x
	Position 7	8x	8x	8x	8x
	Position 8	10x	10x	10x	10x
	Position 9	14x	14x	14x	14x
t_{sd} = short delay time I^2t (milliseconds) (LS, LSG)	Fixed	67 at10x	67 at10x	67 at10x	67 at10x
t_{sd} = short delay time flat (milliseconds) (LSI, LSIG)	Position 1	Inst	Inst	Inst	Inst
	Position 2	120	120	120	120
	Position 3	300	300	300	300
I_g = ground fault pickup (amperes) (LSG, LSIG)	Position 1	10	20	32	50
	Position 2	15	30	48	75
	Position 3	20	40	64	100
	Position 4	30	60	96	150
	Position 5	40	80	128	200
	Position 6	50	100	160	250
t_g = ground fault delay time (milliseconds) (LSG, LSIG)	Position 1	Inst	Inst	Inst	Inst
	Position 2	120	120	120	120
	Position 3	300	300	300	300
Independently Adjustable Instantaneous (I_i) setting ^①	N/A				
Maintenance Mode pickup ($2.5 \times I_n$) (amperes) ^②	N/A				

Notes

① Not available for JG. Independently adjustable I_i setting available in LG, NG and RG ALSI and ALSIG trip units.

② Maintenance Mode not available for JG frames. It is available for KD, LD, MDL, LG, NG, and RG.

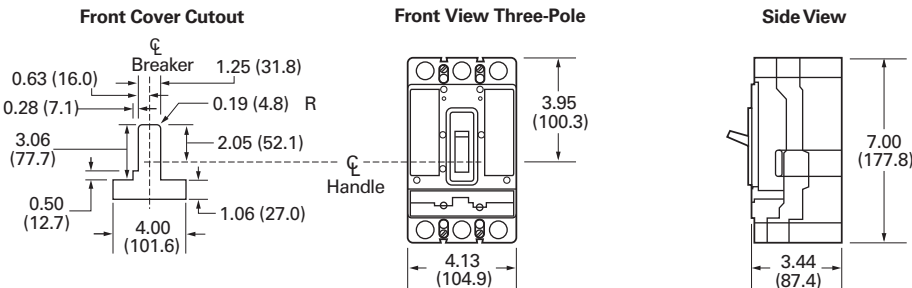
Dimensions and Weights

Approximate Dimensions in Inches (mm)

JG-Frame

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)

JG-Frame



Approximate Shipping Weight in Lbs (kg)

JG-Frame

Breaker Type	Number of Poles	
	2, 3	4
JGC	6.00 (2.70)	8.00 (3.60)
JGE	6.00 (2.70)	8.00 (3.60)
JGH	6.00 (2.70)	8.00 (3.60)
JGS	6.00 (2.70)	8.00 (3.60)
JGU	6.00 (2.70)	8.00 (3.60)
JGX	6.00 (2.70)	8.00 (3.60)

2.3

Molded Case Circuit Breakers

Series G

JG-Frame With Earth Leakage Module

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