

Moulded Case Circuit Breakers

GuardEon*



Smart, Reliable and Secure



GuardEon* enables a new level of smart, reliable, secure electrical solutions that help keep the world working.

GuardEon* by GE is a low-voltage moulded case circuit breaker (MCCB) platform coming in 2016, designed by users for global industry applications. The customer-driven design works in tough, real-world applications with onboard diagnostics for excellent uptime and with integrated ArcWatch safety technology. GuardEon* is built for the age of the industrial internet.

With its simplified and innovative design, together with remote monitoring and predictive maintenance capabilities, GE's GuardEon* MCCB empowers customers to design, build and operate electrical distribution systems with reduced risk and greater confidence.





GuardEon* delivers a **smart** and simplified single global circuit breaker platform designed by customers for industrial applications.

GuardEon*'s contemporary design and features make it easier to use, delivering high durability and quality with accessories now designed for use across various frame sizes.

Now, *that's* smart!

► Smart features

- Truly global circuit breaker line
 - UL, cUL, IEC
 - CCC & more
 - Marine certificates
- Highly versatile trip curves
- Extensive metering capabilities
- Industrial communications protocols
- Contemporary design
- Common internal accessories
- Designed by customers
 - Rotating faceplate
 - Updated motor operator
 - Redesigned rotary handles
 - Color matched with GE's EntelliGuard* G air circuit breaker (ACB)



GuardEon* provides customers with a **reliable** low-voltage circuit breaker that helps to increase uptime of electrical distribution systems.

Featuring predictive capability options such as contact wear calculations, mechanism timing and event logs, GuardEon* allows customers to identify certain electrical problems before they occur – and before they result in costly outages.

GuardEon* is designed with fewer internal parts (vs. legacy products) and developed for automated assembly in our new high-tech factory in Puerto Rico. In other words, there are fewer potential failure points and human error may be virtually eliminated as a failure cause.

► Reliable features

- Predictive maintenance capabilities:
 - Advanced contact wear calculations
 - Mechanism timing
 - Event logs
- Reduced internal parts count
- Highly automated assembly





GuardEon* is **secure** by design and integrates GE's advanced safety technologies like ArcWatch* to help proactively detect, isolate and control arc flash hazards.

GuardEon* features GE's advanced PremEon* Trip Unit including Reduced Energy Let Thru (RELT) options and interfaces with the EntelliGuard* Manager Toolkit. Compatible with PremEon* G trip unit, the software toolkit allows users to view, set and test circuit breaker data and settings from a safer distance – outside the potential arc flash zone.

► Secure features

- ArcWatch technology with Instantaneous Zone Selective Interlocking (I-ZSI) and Wave Form Recognition (WFR)
- Advanced PremEon* trip units with Reduced Energy Let-Through (RELT)
- Remote monitoring and diagnostic capabilities



GuardEon*

Overview

A global moulded case circuit breaker platform built to keep the world working!

E Frame

from 15-250A UL and IEC

G Frame

up to 600A UL and 630A IEC

K Frame

up to 1200A UL and 1600A IEC



EN 60947-2 Standard		E Frame		G Frame		K Frame			
	Construction	160A	250A	400A	630A	800A	1000A	1250A	1600A
	Number of Poles	2 ¹ , 3, 4	2 ¹ , 3, 4	2 ¹ , 3, 4	2 ¹ , 3, 4	3, 4	3, 4	3, 4	3, 4
Ultimate Breaking Capacity Icu (kA)	230/240VAC	200	200	200	200	200	200	200	200
	400/415VAC	150	150	150	150	150	150	150	150
	440VAC	130	130	130	130	130	130	130	130
	500VAC	130	100	100	100	100	100	100	100
	690VAC	65	65	65	65	65	65	65	65
	250VDC ²	100	100						
	500VDC ³	100	100						
UL 489		E Frame		G Frame		K Frame			
	Construction	150A	250A	400A	600A	800A	1000A	1200A	
	Number of Poles	2 ¹ , 3, 4	2 ¹ , 3, 4	2 ¹ , 3, 4	2 ¹ , 3, 4	3, 4	3, 4	3, 4	
Maximum Interrupt Rating (kA)	240VAC	200	200	200	200	200	200	200	
	480VAC	100	100	200	200	100	100	100	
	600VAC	65	65	65	65	65	65	65	
	250VDC ²	100	100						
	500VDC ³	100	100						
Trip Units		LTM							
	Thermal Magnetic Line	LTM	LTM						
	Thermal Magnetic Generator	GTM	GTM						
	Thermal Magnetic Discriminating	LTMD	LTMD						
	Magnetic Only	Mag Break*	Mag Break						
	Electronic Discriminating	PremEon* S	PremEon* S	PremEon* S	PremEon* S	PremEon* S	PremEon* S	PremEon* S	PremEon* S
	Electronic Enhanced	PremEon* G	PremEon* G	PremEon* G	PremEon* G	PremEon* G	PremEon* G	PremEon* G	PremEon* G
Dimensions		170/6.7		265/10.43		265/10.43		265/10.45	
	Height (mm/in)	170/6.7	170/6.7	265/10.43	265/10.43	265/10.43	265/10.44	265/10.45	265/10.46
	Width 3p (mm/in)	105/4.13	105/4.13	140/5.51	140/5.51	210/8.26	210/8.27	210/8.28	210/8.29
	Width 4p (mm/in)	140/5.51	140/5.51	185/7.28	185/7.28	280/11.02	280/11.03	280/11.04	280/11.05
	Depth (mm/in)	95/3.74	95/3.74	115/4.52	115/4.52	140/5.51 ⁴	140/5.51 ⁴	140/5.51 ⁴	140/5.51 ⁴

¹ Two pole in three pole construction

³ Utilizing three poles

² Utilizing two poles

⁴ Dimension shown are for toggle mechanism; stored energy mechanism (187/7.36)

GuardEon* Accessories

We asked users all around the world about their experiences with MCCB accessories. They had a lot to say. We listened. We learned.

Electrical /Motor operators redesigned to be more rugged.

Internal accessories that are common across all GuardEon* circuit breaker frames.

Rotary handles that allow through-the-door operation.

Field interchangeable trip units allow thermal magnetic circuit breakers to be upgraded with electronic trip units (ETU).

Lugs sizes up to 750 MCM (400mm²) for G & K Frames offering the ability to meet large cable size requirements.

Cable interlocks between all GuardEon* frames and also between GuardEon* K Frame and EntelliGuard* G ACBs.



Accessory	E Frame	G Frame	K Frame
DIN-rail mounting	✓		
Plug-in option	✓	✓	
Draw-out option	✓	✓	✓
Rotary Handle	✓	✓	✓
Electrical/Motor Operator	✓	✓	✓
Residual Current Device	✓	✓	
Field Installable TU	✓	✓	✓
Cable Interlocks	✓	✓	✓

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PremEon* Trip Units

KEY
■ Included ● Optional

PremEon* G

- An LCD screen and tactile buttons to set and access its rich feature base.
- Curve settings to match all your UL and IEC coordination needs.
- Predictive maintenance features help to schedule outages and avoid unplanned downtime.
- Integrated voltage sensing.
- Class 1 amperage and Class 2 energy metering.
- Built-in micro USB port simplifies set up, monitoring and diagnostics, eliminating the need for external test units.

PremEon* S

- A straightforward trip unit available in standard or motor circuit protector versions.
- Advanced electronics and increased adjustability give you diagnostic features and excellent coordination.
- Ground fault protection is available in the smaller 250A frame.

Trip Unit Functions	PremEon* G	PremEon* S	
	LCD Display	Adjustable Dials	
	UL/IEC	UL	IEC
Time Current Curve Settings - Adjustable			
Continuous Current setting (I _r)	■	■	■
Long Time Delay (t _r)	■	—	—
Instantaneous Pick-up (I _i)	■	■	■ ¹
Short Time Pick-up (I _{sd})	■	■ ¹	■
Short Time Delay (t _{sd})	■	—	—
Ground Fault Protection			
Ground Fault Pick-up (I _g)	●	●	●
Ground Fault Delay (t _g)	●	●	●
Ground Fault Alarm Pick-up	●	—	—
Ground Fault Alarm Delay	●	—	—
System Monitoring			
Metering (Current)	●	—	—
Metering (Energy)	●	—	—
Advanced Features			
Communications (Modbus/PROFINET)	●	—	—
RELT	●	—	—
Protective Relay Functions (Programmable Outputs)	●	—	—
Zone Selective Interlocking (ST/GF/INST)	●	—	—
Thermal Memory	■	—	—
Neutral Protection (Off/50%/100%)	■	■	■
Temperature Protection	■	—	—
Load Shedding	■	—	—
Motor Protection			
Motor Circuit Protector Version	●	●	●
Settable Trip Class	●	—	—
Phase Unbalance/Loss	●	—	—
Display & Diagnostics			
LED Status Indicator	■	■	■
Embedded LCD Display	■	—	—
Sealable Cover for tamper resistance	■	■	■
Test Input for Set-up, Test, Diagnostics	■	■	■
Trip Reason Indicator	■	—	—
Event Data Capture	■	■	■
Waveform Capture	■	■	■
Flexibility			
RCD Compatible	■	—	■
Reverse Feed Capable	■	■	■
Predictive Maintenance			
Contact Wear	●	—	—
Mechanism Timing	●	—	—

¹ Indicates that this is a tracking feature and is not individually adjustable. It tracks the instantaneous or short-time pickup by a factor depending on the specific frame and current setting.

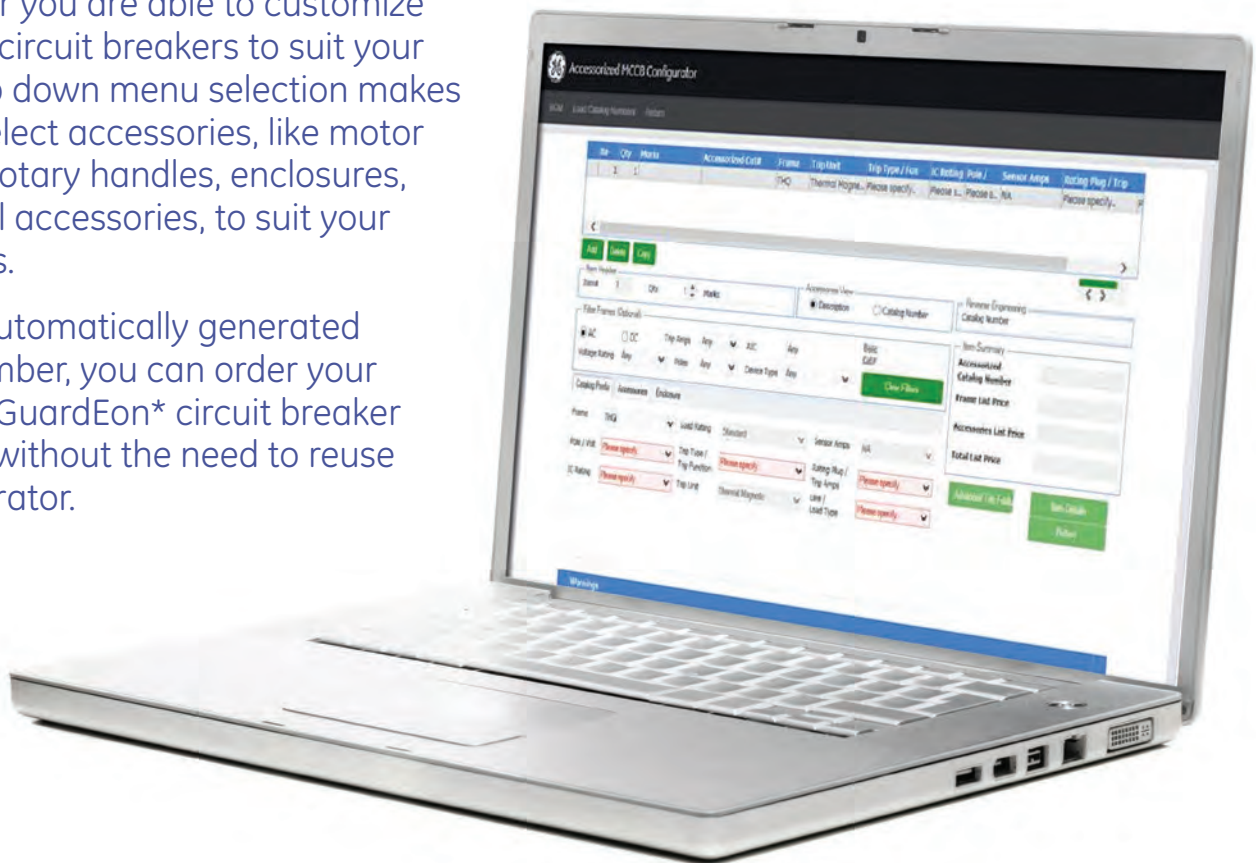
² Auxiliary switch needed for mechanism timing.



GuardEon* Configurator

With the moulded case circuit breaker configurator you are able to customize GuardEon* circuit breakers to suit your needs. Drop down menu selection makes it easy to select accessories, like motor operators, rotary handles, enclosures, and internal accessories, to suit your applications.

Using the automatically generated catalog number, you can order your configured GuardEon* circuit breaker repeatedly without the need to reuse the configurator.



► IntelliGuard* Manager Toolkit

Compatible with PremEon* G trip units, the software toolkit allows users to view, set and test circuit breaker data and settings from a safer distance – outside the potential arc flash zone.

Download the IntelliGuard* Manager Toolkit software!
Available free of charge at: www.ge.com/ex/industrialsolutions

