

EntelliGuard* G Circuit Breakers

Don't compromise arc flash protection
for system reliability.



The next chapter in the history of low-voltage circuit breakers



EntelliGuard* G circuit breakers are the newest line of GE low-voltage circuit breakers, the next step in the evolution of a line known for its exceptional reliability and performance. They are available in 3- and 4-pole designs rated from 400A to 6000A, with fault interruption ratings up to 200kAIC.

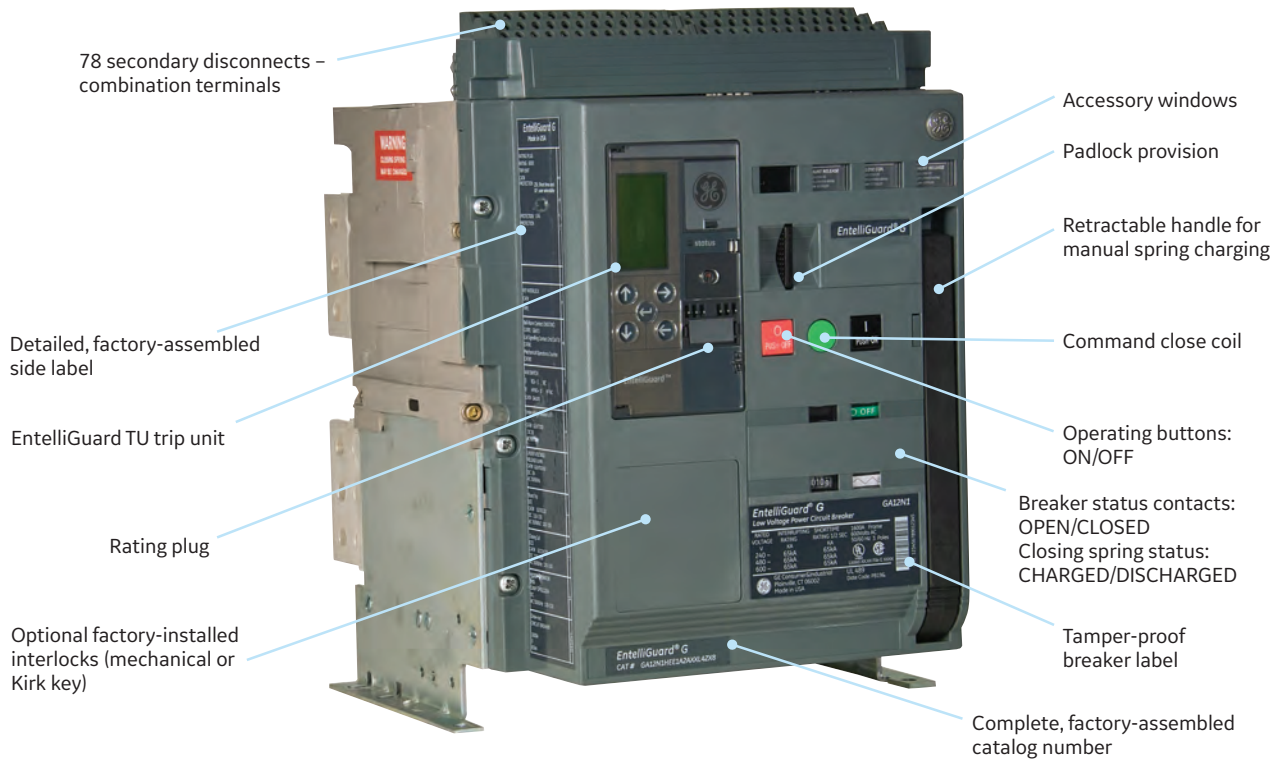
Integral to the EntelliGuard G breakers are the new, state-of-the-art EntelliGuard TU Trip Units, which provide superior system protection, system reliability, monitoring and communications. The breaker-trip unit system delivers superior circuit protection without compromising either selectivity or arc flash protection.

The EntelliGuard breaker-trip unit system demonstrates yet again GE's core competencies in reliable electric power distribution, circuit protection and personnel protection.

With the introduction of the EntelliGuard 200kAIC rated breaker, GE now has a full offering of 200kAIC rated low voltage power circuit breakers. High AIC ratings are desirable in growing industries with critical power systems, such as large-scale data storage and telecommunications.

1882	1894	1918	1935	1946	1955	1960	1966	1971
First Arc Blast Arrester	First High Voltage, Oil Immersed Switch/Circuit Breaker	First Metal-Clad Switchgear	AE and AL - Oilfilm Trip Devices	AK-1 Breaker and EC-1 Trip Device	AK-2 Stored Energy Design and EC-2 Trip Device	AKD-5 Switchgear	AK-3 Static Power Sensor Trip Breaker	AKE, AKL Replacement D/O Breaker

EntelliGuard® G Circuit Breakers



Accessories

There are more than 20 different types of factory installed and loose accessories available for the EntelliGuard G circuit breaker. Whether it's a bell alarm contact, key interlock or redundant shunt trips, we have the accessory combinations to meet your need!

Factory-Installed Accessories

- Motor Operators
- Closing Devices
- Shunt Trip for Ground Fault
- UVR with Fixed Time Delay
- Second Shunt Trip or UV Release
- Auxiliary Switches & Contacts
- Bell Alarm & Trip Annunciation
- Trip Annunciation
- Breaker Mounted Key Interlocks
- Mechanical Interlocks – Fixed Breakers
- Mechanical Interlocks – Drawout Breakers
- Network Interlock
- Gas Channel
- Anti-Bounce System

Shipped Loose Accessories

- Carriage Position Switch
- Coil Signaling Contact Module
- Contact Wear Indicator
- Door Interlock
- Electrical Close Switch
- Lock Kits
- Lifting Truck
- Mechanical Operation Counter
- Pushbutton Padlock Device
- Ready-to-Close Switch
- Secondary Disconnect Block
- Spring Charged Contact
- UVR Time Delay Modules
- Bell Alarm Contact

1977	1978	1980	1985	1986	1993	1994	1998	2005	2008
AKD-6 Switchgear with AKR Breakers	AKJ-50/T50 Replacement Breakers	AKD-8 Switchgear and MVT-9 Trip Unit	AKR-30S Breaker	RMS9 and Epic Trip Units	Power Leader Products with MVT Plus and PM Trip Unit	AKR-125 5000A Breaker	WavePro* Breaker and AKD-10 Switchgear	EntelliGuard Breaker and Entellisys* Switchgear	EntelliGuard G Breaker, EntelliGuard TU Trip Unit and AKD-20 Switchgear
ECS, SST Solid State Trip Devices									

Arc flash protection and selectivity

Now you don't have to choose

Reliable circuit and equipment protection has always been the circuit breaker's primary purpose. Providing appropriate overcurrent protection while preserving selective coordination to maximize system reliability is the main goal of virtually every system designer. And that was once good enough. It isn't anymore.

Modern economic reality and the regulatory environment demand system performance while recognizing the need to protect against the arc flash hazards that expose maintenance personnel to dangerous levels of heat, electrical energy, debris from damaged equipment and concussive forces.

The challenge is to provide both better personnel protection by minimizing arc flash hazards and maintain electrical power to mission-critical loads. But these objectives often seem to conflict, pitting the speed and sensitivity required to optimize safety against the sequence of operations and interlocking required to maximize power system availability.

The EntelliGuard G breaker-trip unit system meets the challenge. It achieves selectivity in a wide range of situations without excessive sacrifice of arc flash protection. With its Reduced Energy Let-through setting (RELT), the system protects at HRC1 or 2 for available fault currents as high as 100kA.

Here are some of the ways that is accomplished:

- Multiple Short Time bands under 100ms optimally fit above the Instantaneous clearing times.
- Alternate Instantaneous setting (RELT) mitigates arc flash hazard while maintaining complete selectivity during normal operation. Remote activation can be safely achieved with off-the-shelf devices or, for networked systems, RELT can be activated via the communications port. RELT annunciation can be direct or indirect, either locally on the equipment or remotely via control devices or the industrial network.
- Adjustable ST and GF Zone Selective Interlocking optimizes restrained and unrestrained bands.
- Zone Selective Instantaneous protection, multiple zone protection, 3 cycle clearing and selectivity are provided simultaneously.
- Instantaneous trip adjusts up to 30X trip plug rating.

EntelliGuard TU Trip Unit

The EntelliGuard TU Trip Unit offers optimum circuit protection and system reliability simultaneously, with minimum compromise. Reliability and protection in one package, at the same time, all the time.

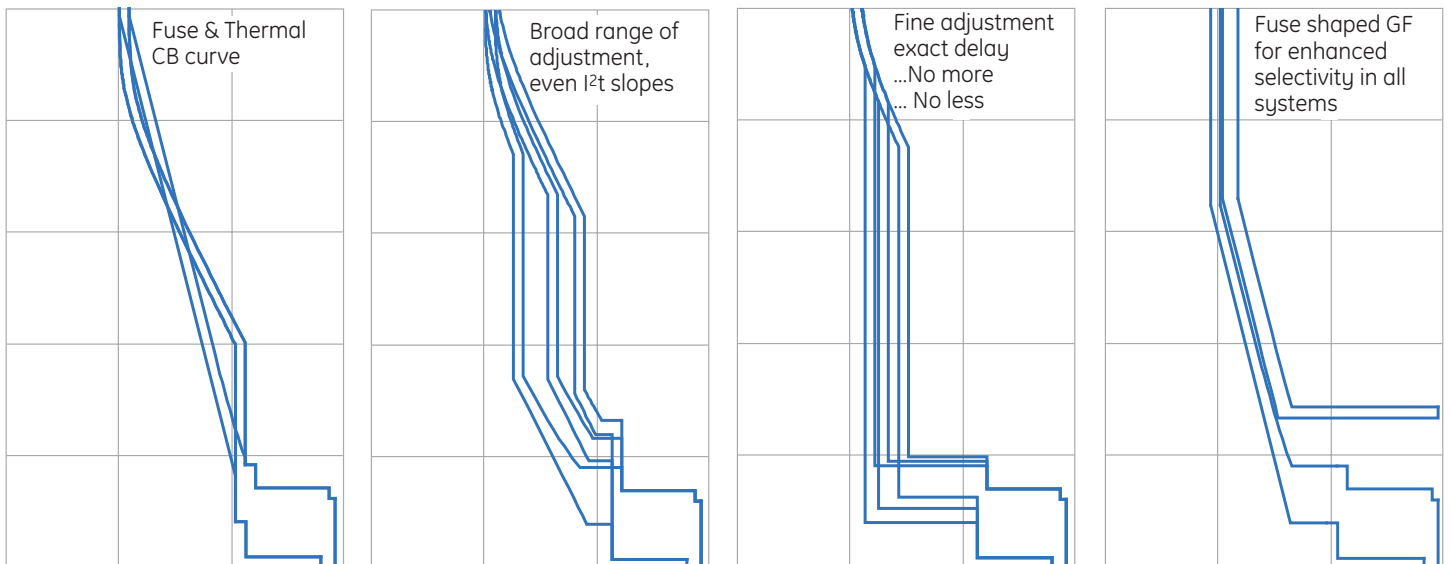
In addition to arc flash protection and selectivity features, the EntelliGuard TU also includes many new innovative features:

- Availability to choose two different industry-recognized open communication protocols: Modbus RTU or Profibus DP.
- As the industry's only completely universal spare/replacement trip unit, it can be installed in any EntelliGuard G circuit breaker, regardless of frame size, sensor size, short circuit rating or standard (UL, ANSI, IEC). Patent pending.
- Time current curves compatible with traditional fuse curves, along with more and tighter breaker curves, ensure accurate coordination. Regardless of what mix of protective devices your system includes – electronic trips, thermal magnetic



circuit breakers or fuses – the EntelliGuard TU has the right curve shape to fit your system's needs.

- Ground Fault curves compatible with common fuse ground fault curves. If you have fused feeders under the circuit breaker with the ground fault protection, you can optimize selectivity without giving up protection and still meet code-mandated requirements.
- The industry's only true Zone Selective Interlocking (ZSI) works with Ground Fault Protection (G'FP), Short Time (ST) and Instantaneous (I), and includes the ability to set precise clearing times of each circuit breaker when restrained or unrestrained. Recently, this feature has been expanded to include Threshold Zone-Selective-Interlocking (T-ZSI) which allows breakers with identically set pickup currents to maintain selectivity and protect their zones without the need to lose sensitivity as the system grows.



EntelliGuard G

short circuit & interrupting ratings

ANSI/UL1066

Interrupting Rating Tier ANSI/UL 1066 Devices, LVPCB					Envelope 1		Envelope 2		Envelope 3	
Type	254V	508V	635V	1/2S Withstand	400-1200	400-2000	2500-3200	400-3200	3200	4000-5000
S	65,000	65,000	50,000	50,000	X					
N	65,000	65,000	65,000	65,000		X	X			
H	85,000	85,000	65,000	65,000		X				
P	100,000	100,000	65,000	65,000		X				
E	85,000	85,000	85,000	85,000				X		X ¹
M	100,000	100,000	100,000	85,000				X		X
B	100,000	100,000	100,000	100,000					X	X
L	150,000	150,000	100,000	100,000					X	X
W	200,000	200,000	100,000	100,000					X	X

¹Restricted

UL489

Interrupting Rating Tier UL 489 Devices, ICCB						Envelope 1		Envelope 2		Envelope 3	
Type	240V	480V	600V	690V (IEC 60947-2)	1/2S Withstand	400-1200	400-2000	2500-3000	400-3000	3000	4000-5000
S	65,000	65,000	50,000	40,000 ¹	42,000	X					
N	65,000	65,000	65,000	50,000 ¹	42,000		X	X			
H	85,000	85,000	65,000		50,000		X	X			
P	100,000	100,000	65,000		50,000		X				
M	100,000	100,000	100,000	85,000 ¹	65,000				X		X
L	150,000	150,000	100,000	100,000 ¹	85,000					X	X
W	200,000	200,000	100,000		85,000					X	X

¹Icu-Ics-Icw

Non-Automatic Circuit Breaker – ANSI Version

Envelope	Type	Amps	Rated Interrupting Current	Rated Endurance		
				Minimum Mechanical Endurance	Minimum Electrical Endurance at 480V	Minimum Electrical Endurance at 600V
1	N	800	42	12,500	10,000	7,500
1	N	1600	42	12,500	10,000	7,500
1	N	2000	42	12,500	7,500	5,000
2	H	3200	65	5,000	5,000	5,000
3	L	4000	100	5,000	3,000	2,000
3	L	5000	100	5,000	2,000	1,500

NOTE: GE internal quality testing requirements exceeded 20,000 mechanical operations.

Non-Automatic Circuit Breaker/Molded Case Switch – UL Version

Envelope	Type	Amps	Short Interrupting Current	Rated Endurance		
				Minimum Mechanical Endurance	Minimum Electrical Endurance at 480V	Minimum Electrical Endurance at 600V
1	N	800	42	12,500	10,000	7,500
1	N	1600	42	12,500	10,000	7,500
1	N	2000	42	12,500	7,500	5,000
2	H	3000	65	5,000	5,000	5,000
3	L	4000	100	5,000	3,000	2,000
3	L	5000	100	5,000	3,000	1,500
3	L	6000	100	5,000	2,000	1,000

NOTE: GE internal quality testing requirements exceeded 20,000 mechanical operations.

DC Ratings

Envelope	Type	Amps	Short Interrupting Current (A)	Rated Endurance (Operations)		
				Minimum Mechanical Endurance	Minimum Electrical Endurance at 600 VDC	Minimum Electrical Endurance at 1000 VDC
2	M	800-3000	30,000	12,500	500	500

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