CLiP®-LV
Current Limiting Protector

G&W Electric

Engineered to order. Built to last.

“Save money and improve safety with G&W Electric’s Current Limiting Protector (CLiP-LV)”

The most versatile current limiting device available. Protect your system from catastrophic damage and downtime while keeping your personnel safe.

CLiP-LV®

With the ever-increasing demand for reliable energy, electrical systems have been forced to expand to accommodate the increased capacity, which could cause catastrophic failure. The CLiP-LV’s unique ability provides high continuous current ratings with current limitation and ultra-high-speed operation in one package. This makes it an economical solution to protect against short-circuit interruptions without having to add new equipment.

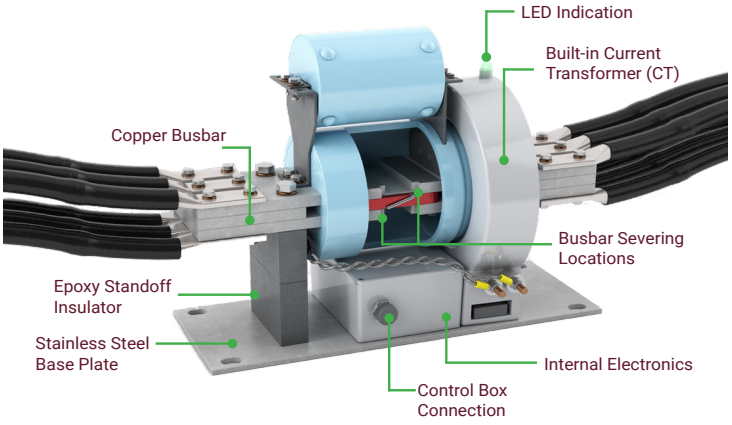
The CLiP-LV current limiting protector is a unique over-current protection device that interrupts potentially damaging fault current significantly limiting potential damage. It helps prevent currents from exceeding equipment ratings and avoids catastrophic failure and dramatically reduces peak fault currents to minimize damage to protect personnel and arc flash hazards.

UL Certification

The design, quality and operation of G&W’s CLiP-LV has been certified by this globally recognized agency and now complies with Standard(s) for Safety: UL 3801, Outline of Investigation for Fault Limiters. The CLiP=LV current limiting protector offers an interrupt clearing time of between 1/4 and 1/2 cycle in accordance with UL248-1 and IEC 60269.

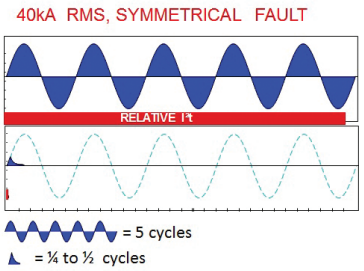
The CLiP-LV is an electronically sensed and triggered, commutating form of current limiter, sometimes generically referred to as a triggered current limiting protector. A built-in current transformer (CT) provides real time current values to the internal electronics. The CLiP-LV has a field adjustable instantaneous pickup setting referred to as the trigger level. If the current exceeds the user-defined trigger level, a signal is sent by the firing logic to interrupt the current. A continuous copper busbar path carries the continuous current, which is opened during over-current conditions, while a parallel connected current-limiting fuse interrupts the fault.

Single Phase CLiP-LV Components



CIRCUIT BREAKER
133 x 10^6 A^2 Sec

CLiP-LV
.6 x 10^6 A^2 Sec (Max)



Technical Ratings

Single or Three Phase	Dimensions (mm)	Weight (kg)	Input Voltage Requirements	Maximum Voltage	Continuous Current	Interrupting Rating	Instantaneous Max Trigger Level	Trip Levels Available	Interrupting Clearing Time
Single phase	L: 18.5”” / 470mm W: 9.7”” / 246mm H: 13.1”” / 333mm	85 lbs 39 kg	“24 - 250V AC/DC 150W peak 60W nominal”	750V	4000A	50kA 100kA 200kA	50kA - 14kA 100kA - 21kA 200kA - 30kA	up to 30kA	Between 1/4 and 1/2 cycle
Three phase	L: 18.5”” / 470mm W: 27.7”” / 703mm H: 13.1”” / 333mm	255 lbs (102 kg)							

Features and Benefits

Features	Benefits
Single phase & three phase protection	Use the hi-speed remote indication relay contacts (located in the control box) to trip a breaker and interrupt unfaulted phases. No need to replace interrupters in unfaulted phases
Threshold current sensing (Does not use transient susceptible rate of rise current sensing)	• Hardened transient filtering responds to actual current values, not transients or harmonics • Can directly protect capacitor banks and harmonic filters • Consistent peak let-through values, regardless of fault asymmetry level
Field-selectable trigger levels (pick-up)	Adjust trigger levels in the field to ensure continuing protection as the site characteristics change
Remote enable/disable	If protection is temporarily not required it can be remotely disabled. It then acts simply as a busbar. The operation modes are PLC and SCADA adaptable
Remote trip indication	Three-phase remote indication of operation (within 3 cycles) provides two Form C contacts for remote monitoring and trip of user's series breaker to prevent single-phasing
Outdoor duty	Can be installed outdoors without an enclosure
No fuse aging associated with transients or inrushes	No need to replace aging fuses, providing substantial long-term cost savings
Copper busbar	Lower system losses, resulting in improved reliability. Lower peak let-through resulting in better current limiting performance
Arc Flash Mitigation	CLiP-LV is the best method to minimize or eliminate the problem by reducing the fault current and time duration
Overdutied Equipment Protection	Can be used to eliminate the need to replace underrated equipment
Minimize Damage	Provides effective current-limiting performance of a much lower rated fuse, but with electronically controlled operation.

Conventional Devices vs. CLiP-LV

		Design Considerations
Conventional Fault-Interrupting Devices	**Current Limiting Fuse**	• Reduced current-limiting capabilities at low-level fault currents • Motor starts, lightning surges and heavy transients may damage traditional fuse elements or change their response, requiring replacement; no status feedback available
	Expulsion Fuse	• Emits blasts when clearing faults and ineffective in limiting let-through energy • Lower-level fault currents may partially melt the fuse, resulting in failure or limited performance if not known or replaced; no status feedback available
	Circuit Breaker	• Much slower clearing times allow for far greater energy let-through and requires maintenance • Requires an external device (relay) to send the operational signal which delays the circuit interruption
Conventional Current-limiting Devices	**Current Limiting Reactor**	• Large size often does not fit in retrofit applications • Adds to system losses (internal resistance in mohm range) during normal operation • Blocks VARS transfer out of generators; no status feedback available
	Three-phase Earthing Switch	• Large size often does not fit in retrofit applications • Eliminates the arc by inducing a bolted fault on the system, which adds stresses to the entire electrical system; equipment lifespan may be reduced

APPLICATIONS

- Refineries
- Generating Stations
- Distribution Networks
- Chemical Plants
- Cement Plants
- Pulp & Paper Mills
- Universities
- Hospitals
- Oil Platforms & FPSOs
- Mining
- Battery Energy Storage (BESS)
- Wind and Solar
- Datacenters

Three-phase system in an enclosure protecting an FPSO

University substation outdoor installation

Wind farm installation

Contact us today

708.388.5010 or info@gwelec.com

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Since 1905, G&W Electric has been a leading provider of innovative power grid solutions including the latest in load and fault interrupting switches; reclosers; sensors; system protection equipment; power grid automation; transmission and distribution cable terminations; and joints and other cable accessories. G&W Electric is headquartered in Bolingbrook, Illinois, U.S.A., with manufacturing facilities and sales support in more than 100 countries, including Canada, Italy, China, Mexico, Brazil, India and Singapore. We help our customers meet their challenges and gain a competitive edge through a suite of advanced products and technical services.

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