

Line Power LP-2600 Circuit Protector



General

The LP-2600 vacuum circuit protector is designed to replace 1000V, 600 amp mechanical circuit breakers now used by the mining industry. The accuracy and flexibility in the LP-2600 design provides the electrical engineer (or electrician) the means to monitor actual circuit load conditions and “fine tune” the circuit to reduce “nuisance tripping” while maintaining cable protection. The unit can also be used as a belt or pump controller - replacing the mechanical circuit breaker, control contactor and overcurrent relay. The modeling technique used by the LP-2600 provides dynamic protection for loads operating at their design limit.

Features and Options

- I²T thermal-overload protection
- Instantaneous overcurrent protection
- Phase-loss protection
- Stuck vacuum bottle indication with audible alarm
- Undervoltage protection
- Ground-fault protection
- Ground-monitoring protection
- Current limiting protection and blown fuse detection
- Temperature sensing and over temperature protection
- Front-panel programming
- Program-change lockout
- Nonvolatile memory for programmed values and values at trip
- Digital display of:
 - Load Current
 - Meter values-at-trip
- -20°C to 40°C operating temperature
- Optional parameter-selectable, isolated analog output

LP-2600 Description

The LP-2600 is rated for 1000 volts AC at 600 amperes continuous. The Full Load Amps (FLA) can be adjusted from 600 amps down to 60 amps in 6.0 amp steps. This, plus other adjustments, gives the LP-2600 the flexibility to meet the majority of load and cable requirements found in the mining industry.

The LP-2600 has all of the necessary components mounted on a slide-in panel that will fit into a 16.625" H by 18" W cutout - allowing for easy retrofit of existing power centers that contain mechanical circuit breakers. In most cases, the only electrical connections are phase power, control voltage and ground. Custom packaging is also available - consult factory.

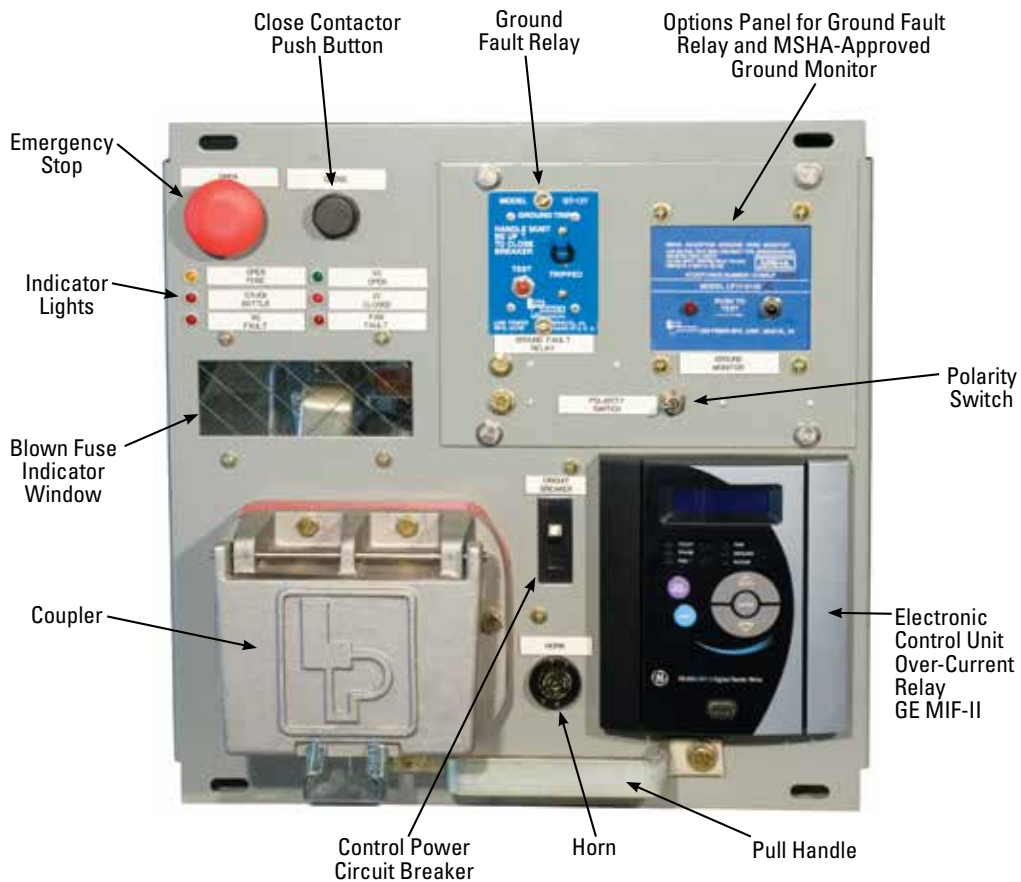
The LP-2600 contains the following components and/or provisions:

- LP-2600 circuit protection unit - provides the protection and monitoring features listed.
- Vacuum Bottle Contactor - switches three-phase power to load and provides the primary means for interrupting three-phase fault currents.
- Current Limiting Fuses - one per phase, limits three-phase fault currents and disconnects the load under extreme fault currents. Each fuse is fitted with NC contact to indicate blown fuse.

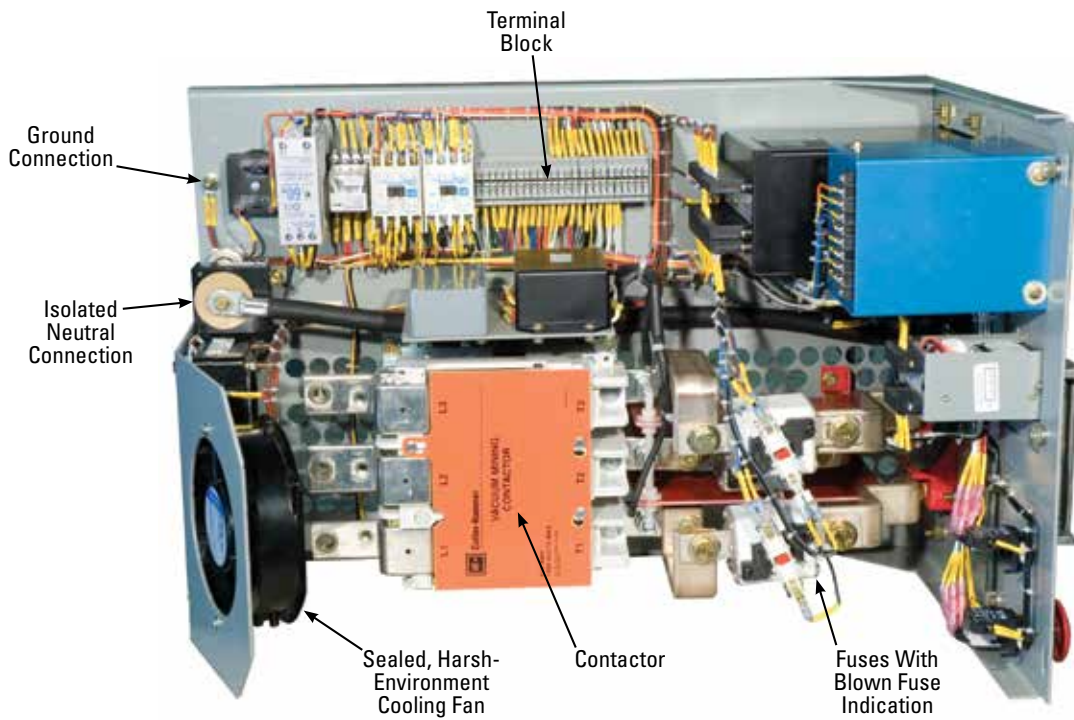
- Provisions for customer-specified ground fault in substitution of ground fault protection provided by the LP-2600 circuit protection relay.
- Provisions for customer-specified ground monitor - provides ground monitoring protection.
- Close Push-button - Closes contactor.
- Open Push-button (Maintained) - Opens contactor.
- Control Circuit Breaker - Removes control voltage to the LP-2600 components.
- Power Receptacle - Provides means for quick disconnect of three-phase power cable.
- Phase CTs - 600 amps nominally rated, one transformer for each phase housed in a three phase block, provides proportional phase current levels to the LP-2600 circuit protection relay, nominal secondary current is 5 amps.
- Ground-Fault CT - provides the LP-2600 circuit protection relay ground conductor current levels when the unit is used for ground-fault protection; phase conductor to ground conductor fault current detection for other ground-fault devices.
- Front Panel View Window - provides visible means to inspect the current limiting fuses for blown fuses and to insure proper fuse installation.



LP-2600 Construction



Front View



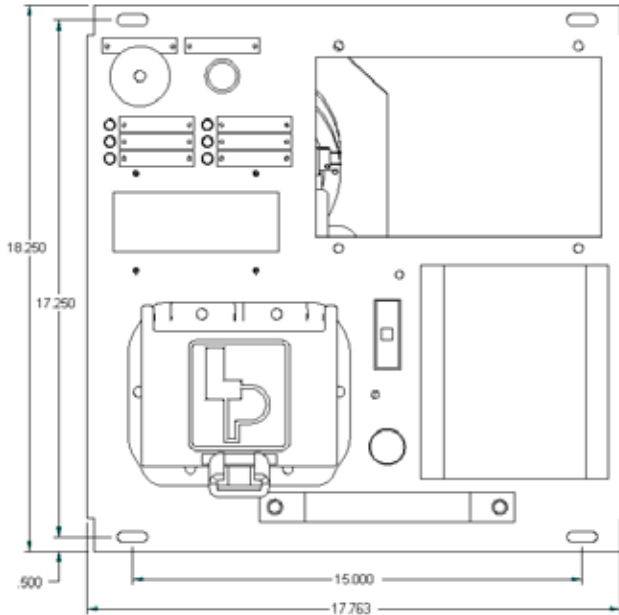
Top View

LP-2600 Investigation

The LP-2600 investigation was conducted by the Electrical Safety Division at the MSHA approval and certification center. It was determined that the LP-2600 VCB is a suitable

circuit breaker for compliance with 30 CFR 75.900 and 75.902 and can be used as a "no less effective" device for the purposes of 30 CFR 75.601, acceptance No. 100407LP.

Front View



Side View

