

GNB Ferro 50™



Single-Shift Industrial Battery Chargers

Ferroresonant Technology
ideal for...

- *Walkie Trucks*
- *Sweepers and Scrubbers*
- *Personnel Carriers*
- *Light-Duty Narrow Aisle*
- *All other light-duty applications using flooded lead-acid batteries*

120VAC Input
with 7 foot cord.
Plug-In and Go!

Designed for light applications

The GNB Ferro 50™ charger is designed to charge batteries used in light-duty, single-shift applications that have 10-16 hours available for charging. Typical applications include walkie trucks, light-duty narrow aisle trucks, sweepers/scrubbers, personnel carriers, man lifts and other equipment using lead-acid deep-cycle batteries.

On-board Utility Applications

The GNB Ferro 50 with no additional modifications can be used in on-board applications where the output of the charger is always electrically connected to the battery on-board the utility equipment (Pallet trucks, Golf carts, High-Low lifts, etc.). In this application the truck operator would plug the AC input into a wall outlet when a charge cycle is required.

Designed to take charge

The GNB Ferro 50 control is fully automatic, featuring four bright LEDs for easy identification of the charging status, and two manual push-buttons, "Equalize" and "Stop," to allow further management of the charging operation.

Automatic Start/Stop

When the battery is connected to the charger, the GNB Ferro 50 will provide a five-second delay to check for proper connection before it automatically begins the charging operation. When charging is complete, the GNB Ferro 50 will automatically terminate the operation and the "Charge Complete" LED will illuminate.

Automatic Equalize

The GNB Ferro 50 automatically provides an equalize charge of three hours beyond a normal charge complete on every 5th cycle.

Pressing the "Equalize" key at any time during an equalize charge cycle will deselect the equalize function for that cycle. When the automatic equalize function is selected, the manual push-button is disabled to prevent unnecessary equalize charges.

48-hour refresh charge

If the battery and charger are left connected for 48 hours after the initial charge has been completed, the GNB Ferro 50 provides a refresh charge to ensure a fully charged battery when needed.

PT/DV/DT charge termination

The GNB Ferro 50 utilizes a patented charge termination technique, DV/DT, or rate of change of battery voltage with respect to time, with proportional time (PT) to determine when to terminate a charge cycle. The length of time it takes the battery to reach the 80% charged point determines the sampling rate. This termination method ensures a precise charge every time, never under- or over-charging, even on lightly discharged batteries. This technique, used in conjunction with the tapered curve of our ferroresonant chargers, ensures that the rate of change for both battery voltage and current always provides an efficient and accurate termination of charge.

Should the user prefer a voltage/time charge termination the GNB Ferro 50 can be set for this popular termination method by closing the proper dip switch on the PC board.

Unaffected by AC power failures

If AC power is interrupted during a charge cycle, the GNB Ferro 50 is designed so that when AC power is restored the charge cycle is resumed at the point where it was stopped.

Back-up timer protection

The GNB Ferro 50 is equipped with two back-up timers for additional battery protection. These back-up timers terminate the charge if (1) the battery is not 80% charged in 13 hours or (2) the charge is not completed within 5 hours after reaching 80% charged. These timers protect the battery from excessive over-charging and possible permanent damage.

Ferroresonant power conversion circuitry

The quality-designed and manufactured ferroresonant transformer is the heart of the efficient charger. The power conversion circuitry is designed to maximize battery life with its constantly tapering charge, automatically regulated by the "on charge" battery voltage. The output current of the charger is determined by the state of discharge of the battery. The battery is precisely charged, based on its depth of discharge.

"Battery-friendly" charge rate

The GNB Ferro 50, unlike other single-shift chargers, provides a "battery-friendly" charge rate featuring a finish rate that is typically available only on higher-rated chargers. This finish rate ensures that the battery is precisely charged for maximum life.

Regulation

The GNB Ferro 50's ferroresonant transformer is line and load regulated to hold the finish rate of the charge within ±1%, even with line voltage variations as high as ±10%. This protects and properly charges the battery, even when severe input voltage variations exist.

Low operating cost

The GNB Ferro 50 is inherently efficient due to its ferroresonant circuitry, the most common method of charging lead-acid batteries. In addition, the standard automatic start/stop, pt/dv/dt and voltage/time control properly manages the charge time from start to finish.

Safety features

The GNB Ferro 50 is protected against short circuit, incorrect battery connection, voltage transients and other unsafe failure modes. An electronic timer on the control shuts off the charger if the battery does not become 80% charged in 13 hours. These safeguards protect the charger and battery, assuring longer life for both.

Warranty

GNB Ferro 50 battery chargers are warranted to the original purchaser for three years on the power transformer and silicon diodes, and one year on other components.

Quality-built for years of trouble-free service

The GNB Ferro 50 is engineered to meet the daily challenges associated with charging batteries. The GNB Ferro 50 is subject to intensive quality control and test procedures to ensure many years of trouble-free service.

GNB Single Shift Models	Cells	DC Volts	DC Amps	Amp-Hour Range	AC Amps Input @120VAC	Shipping Weight (lbs)
FER50-06-300S1F	6	12	30	180-380	5	51
FER50-06-510S1F	6	12	50	300-600	8	62
FER50-12-300S1F	12	24	30	180-380	9.5	60
FER50-12-400S1F	12	24	40	225-450	11.5	80
FER50-12-510S1F	12	24	50	300-600	15	83

All cabinets measure 16.5" Height x 12.5" Width x 12" Depth

GNB Industrial Power

USA – Tel: 877.462.4636

Canada – Tel: 800.268.2698

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