48 V Flooded Lead Acid Battery

Absorption
The absorption set point is generally between 56.4 volts DC and 57 volts DC in a 48 volt charger. The charger then maintains the absorption voltage (constant voltage) until the battery is fully charged (end of the second stage). At this point, the charger drops the output voltage to the 3rd, or "float" setting, which is safe for long term battery maintenance.

Float Stage
This float stage voltage is between 52.2 and 54 volts DC. The float stage in a microprocessor controlled battery charger provides an excellent application of computer technology to an old problem. Previous 24 volt battery trickle chargers usually maintained an amperage level that was too high for long term battery maintenance, and overcharged batteries, thus requiring constant monitoring. The smart chargers can be left connected for long periods, and the microprocessor only supplies enough current (at the float voltage setting)to compensate for battery self-discharge.

Equalization Setting
Stationary batteries are almost exclusively lead acid and some maintenance is required, one of which is equalizing charge. Applying a periodic equalizing charge brings all cells to similar levels by increasing the voltage to 2.50V/cell (60V), or 10 percent higher than the recommended charge voltage.

An equalizing charge is nothing more than a deliberate overcharge to remove sulfate crystals that build up on the plates over time. Left unchecked, sulfation can reduce the overall capacity of the battery and render the battery unserviceable in extreme cases. An equalizing charge also reverses acid stratification, a condition where acid concentration is greater at the bottom of the battery than at the top.

Experts recommend equalizing services once a month to once or twice a year. A better method is to apply a fully saturated charge and then compare the specific gravity readings (SG) on the individual cells of a flooded lead acid battery with a hydrometer. Only apply equalization if the SG difference between the cells is 0.030.

During equalizing charge, check the changes in the SG reading every hour and disconnect the charge when the gravity no longer rises. This is the time when no further improvement is possible and a continued charge would have a negative effect on the battery.

The battery must be kept cool and under close observation for unusual heat rise and excessive venting. Some venting is normal and the hydrogen emitted is highly flammable. The battery room must have good ventilation as the hydrogen gas becomes explosive at a concentration of 4 percent.

*** Please check with your inverter supplier to verify the above recommended setting as well.