RENOGY 20 AMP MPPT SOLAR CHARGE CONTROLLER



There are several factors to consider when selecting a deep-cycle battery including battery chemistry type, cycle life, maintenance, application and price point.

It's important to select the right battery technology for your application in terms of battery maintenance. If a site is easily accessible, then deep-cycle flooded batteries are a good choice due to their low cost and widespread availability. If the installation is in a remote area where regular maintenance cannot be guaranteed, then maintenance-free, deep-cycle AGM or gel batteries are the best options despite their higher cost.

In addition, in areas where batteries often operate at partial state of charge (PSOC), the addition of carbon additives have been successful in extending the life of deep-cycle batteries. When batteries operate in off-grid locations or in places with an unstable grid, batteries are often not fully charged on a regular basis. This quickly diminishes the overall life of the battery. Carbon additives, such as

Smart Carbon from Trojan Battery, has been shown to prolong battery life and avoid costly frequent battery replacement.

PSOC is a reality of most off-grid and unstable grid systems. Solar panels used in these applications are often undersized, preventing batteries from achieving a full recharge. The same is true with intermittent weather conditions or placement of solar panels in shady areas, which affects a solar installation's ability to fully recharge batteries.

PSOC is also common in inverter backup systems when batteries are not fully charged because the grid frequently goes down. Because the grid is the main charging source for the batteries, the consistent unavailability of the grid prevents deep-cycle batteries from being fully recharged on a regular basis, resulting in diminished life of the battery.

Therefore, be sure to consider batteries that offer enhanced performance, including improved charge acceptance and faster recharge, in PSOC applications.

Other factors to consider when selecting batteries:

IEC testing: Look for IEC and third-party test results. Select a manufacturer that employs outside testing companies to ensure the accuracy and validity of cycle life data. Testing to the IEC 61427 standard ensures the batteries meet the rigors of the deep discharge and recharge cycles of renewable energy applications.

Cycle life: This is measured as the number of discharge/charge cycles the battery can provide at a specified percentage of its rated capacity. Batteries from different manufacturers may have the same capacity rating, but design, materials, process, experience and quality control heavily influence cycle life performance.

Capacity: Review the capacity of a battery to ensure it is properly rated for the application. A battery with insufficient capacity will over-discharge on a regular basis and have a shorter life. An oversized battery is also a poor choice because it will cost more for no added value.

Brand: With many deep-cycle batteries on the market, choose a battery from a company with a reputable brand and a history of engineering and manufacturing quality deep-cycle batteries for renewable energy applications.

Price: A battery with a low price is attractive, but if obtained at the expense of quality and cycle life performance, the cost over time will be significantly higher due to frequent battery replacements. It's important to consider issues other than price when deciding on a battery for renewable energy applications.

For solar system you also need RENOGY 20 AMP MPPT SOLAR CHARGE CONTROLLER which will protect battery from overcharging.