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How to choose Solar Charge Controllers

Powerpoint Presentation

Learning Centre

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Charge Controllers

- Charge controllers – Charge Batteries Optimally from the Solar Panel
- Protects Batteries from being Over-charged or Over-discharged

PWM charge controllers

- Latest technology in PV battery charging
- Provide tapering charge by rapidly switching the full charging current on/off
- Most PWM charge controllers have a built-in method to prevent current back-feed into the Solar panels eliminating the need for additional blocking diode

MPPT Charge controllers :

- Operate at the maximum power point of the PV panel
- Higher charging efficiency than PWM charge controllers
- Not cost-effective for Lower voltage PV systems e.g. 12/24 V
- Beneficial at colder temperatures and higher Array Voltages

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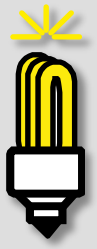
Applications and Sizing

Charge controllers are sized based on the following:

- The total current available for charging from the PV array i.e. Total short circuit current of the PV array
- The load current to be supplied from the charge controller load terminal
- If load current exceeds charge controller rating, DC loads maybe connected directly to the Battery load terminal



DC-AC Inverters are usually connected directly to the Battery due to the limited load current capacity of standard charge controllers

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Recommendations

Solar Charge Controllers - Steca Solarix PRS

The simplicity and high performance of the new Solarix PRS solar charge controller make it particularly attractive. At the same time, it offers a modern design and a convenient display, all at an extremely attractive price. Several LEDs in various colours emulate a tank display, which gives information on the charge status of the battery. 10 - 30 Amps

Solar Charge Controllers - Steca Solsum

Solsum C series are used in small solar home systems with a 5 to 10 Amp solar charging and load current capacity (up to 240 Wp). 5 - 10 Amps, 12V / 24V. Coming February 2009, the Solsum F Series will replace the Solsum C Series. The new advanced Solsum F Series has a circuit board based on total electronic protection and works on low loss Series PWM control principle.

Solar Charge Controllers - Steca PR

PR charge controllers is the fifth generation of charge controller technology (up to 720 Wp). 3 - 30 Amps, 12V / 24V

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Recommendations

Solar Charge Controllers - Steca Solarix

Solarix series is the world's most sold PV charge controller for the use in medium sized solar home systems and PV power supplies in the range of 8 - 40 Amps, 12V / 24V, 48V

Solar Charge Controllers - Steca Solarix MPPT

The new Steca solar charge controller Solarix MPPT is a maximum power point tracker to optimally charge batteries. It is specially designed to connect PV-modules which are used in grid-connected systems. It is a simple and reliable device providing maximum flexibility in module configuration and even allows the use of thin film modules. The latest technology guarantees professional battery care combined with modern design and outstanding protection features.

Telecom & Hybrid Charge Controllers - Steca Tarom

Solar charge controller optimally designed for demanding telecom applications and complex off-grid PV hybrid system architectures. 30 - 45 Amps, 12V / 24V, 48V