



## CHARGE CONTROLLERS

Charge controllers : No system can work efficiently without one, they have been designed to control charge and discharge of 12V lead-acid batteries.

PTLSOLAR™ solarcharge controller series are ideally suited for all those who are looking for very reliable solar charger units at very competitive prices. The GES regulators operate according to the PWM shunt principle which means that only solar modules can be used as power source for them.

PTLSOLAR™ charge controllers optimize battery charging on the basis of its actual state of charge (SOC) and set the voltage thresholds according to the SOC and ambient temperature.

They “recognize” the battery current/voltage status, age, operating temperature; hence disconnect the modules only when the battery is effectively 100% charged. The resulting effect is batteries receive between 25% and 40% of additional charge depending on the situation. Other models tend to cut input current from the solar modules too early, thus throwing away a considerable amount of energy, which should otherwise be in the battery.



### Main Features:

- \* Battery over charge protection, through constant voltage charging
- \* Battery over discharge protection
- \* Built in blocking diode
- \* Visualization of the battery state of charge with two LEDs (red and green) with solid or flashing light according to the operating situation
- \* Extremely high reliability and long durability
- \* Attractive price
- \* Large section of the connecting terminals
- \* Load protection fuse
- \* Multi-colour warning LEDs indicating the battery state of charge and the system's conditions, such as correctness of the installation or reason of malfunctioning, if any. This is an extremely important aid to the installer and the enduser, which enables them to make a quick system check-up.

## Characteristics:

### Work mode:

- Automatic** : Switch on and off mode uses the PV panel voltage as **sunlight sensor**
- Time Setting** : Switch on the load and switch off the load by setting the time. Time calculation uses **crystalline oscillator** to make sure the time control accuracy.
- Normal** : As normal controller .
- Test purpose** : For testing purpose
- Charging mode** : Uses **PWM high efficiency charging way** Boost, recovery and float charging auto work for battery long-life. Use temperature compensation.
- Self protection** : Protection against - **Overload**; Outside and inside short circuit; **Reverse connection** Thunder and lightning; PV panel reverse current; Over charging and discharging etc
- LED indication** : **LED indicating** the system of charging, overcharge, power full, power low, over-discharge, over load, out short circuit, load on/off, etc.
- Industry level** : **Wide operating temperature** conditions -35°C to +50°C

## Other Features:

**High accuracy over discharging control by the discharging rate:** Over-discharging control voltage modified by the battery discharging rate curve.

**No adjustable hardware part:** Uses flash memory to save all work control point instead of adjustable resistance, to protect the control work point from going off as the adjustable resistance value can be easily changed by temperature and vibration, so as to make sure the control accuracy and reliability.

## Specifications:

Item	10 A	20 A	30 A	40 A
Rated solar input	10 A	20 A	30 A	40 A
Rated load	10 A	20 A	30 A	40 A
System voltage	12/24 V	12/24 V	12/24 V	12/24 V
Regulation Voltage	14.4 V	14.4 V	14.4 V	14.4 V
Float	13.4 V	13.4 V	13.4 V	13.4 V
Equalization	14.8 V	14.8 V	14.8 V	14.8 V
Load Disconnect	11.1 V	11.1 V	11.1 V	11.1 V
Load Reconnect	12.6 V	12.6 V	12.6 V	12.6 V
Temp.Comp.(mV)	-30 mV	-30 mV	-30 mV	-30 mV
Self-consumption	≤ 30 m	≤30 mA	≤30 mA	≤30 mA
Operation temperature	-35 to 55*c	-35 to 55*c	-35 to 55*c	-35 to 55*c

\* Errors expected and possible alterations without prior notice.

## GREEN ENERGY LLC / GESOLAR FZ LLC

(An ISO 9001:2000 certified company)