※Thank you for selecting the LandStar E/EU series solar charge controller. Please read this manual carefully before using the product and pay attention to the safety information.

LandStar E/EU series
——Solar Charge Controller

1.Safety Information

- Read all of the instructions in the manual before installation.
- DO NOT disassemble or attempt to repair the controller.
- Install external fuse or breaker as required.
- Do disconnect the solar module and fuse/ breakers near to battery before installing or moving the controller.
- Power connections must remain tight to avoid excessive heating from a loose connection.
- Only charge batteries that comply with the parameters of controller.
- Battery connection may be wired to one battery or a bank of batteries.
- Risk of electric shock, the PV and load can produce high voltages when the controller is working.

2. Overview

The LandStar E series controller is a PWM charge controller that adopts the most advanced digital technique. It's an easy operation and cost efficient controller featured as:

- 3-Stage intelligent PWM charging：Bulk, Boost/Equalize, Float
- Support 3 charging options: Sealed, Gel, and Flooded
- Battery status LED indicator can indicates battery situation
- Battery temperature compensation function
- With humanized settings, operation will be more comfortable and convenient
- The USB will provide power supply that can charge for electronic equipment**(LS EU series only)**
- Battery type and load output can be set via button
- Extensive Electronic protection

3. Product Features

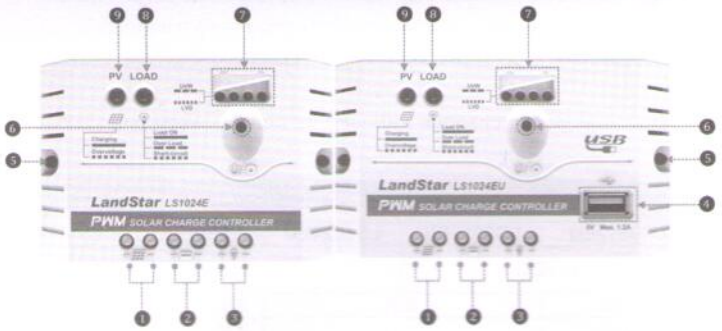


Figure 1 Product Feature

❶	PV Terminals	❻	Load Switch Button
❷	Battery Terminals	❼	Battery status LED indicator
❸	Load Terminals	❽	Load status LED indicator
❹	USB output interface (LS E series only)	❾	Charging status LED indicator
❺	Mounting Hole Φ4.5		

4. Wiring

Step 2: Connect the system in the order of ❶battery → ❷ load → ❸PV array in accordance with Figure 2-2,"Schematic Wiring Diagram" and disconnect the system in the reverse order❸❷❶.

NOTE: While wiring the controller do not close the circuit breaker or fuse and make sure that the leads of "+" and "-" poles are connected correctly.

NOTE: A fuse which current is 1.25 to 2 times the rated current of the controller must be installed on the battery side with a distance from the battery not greater than 150 mm.

NOTE: If an inverter is to be connected to the system, connect the inverter directly to the battery, not to the load side of the controller.

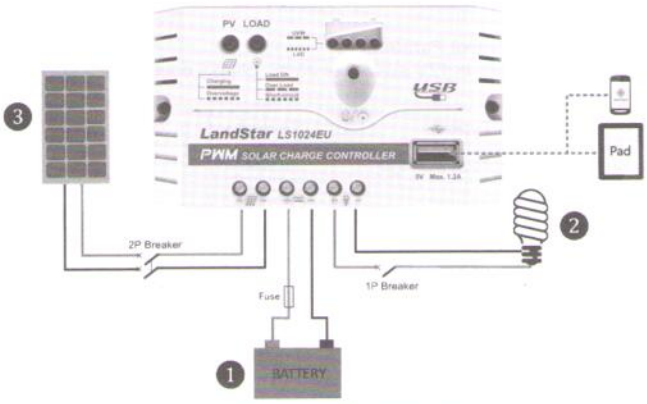


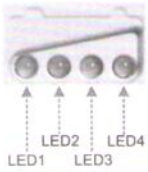
Figure 2 Connection diagram

5. LED Indicators

1) Charging and load status indicator

Indicator	Color	Status	Instruction
Charging status LED indicator	Green	On Solid	In Charging
	Green	OFF	No Charging
	Green	Fast Flashing	Battery Over Voltage
Load status LED indicator	Green	On Solid	Load ON
	Green	OFF	Load OFF
	Green	Slowly Flashing	Load over load
	Green	Fast Flashing	Load short circuit

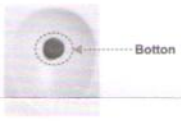
2) Battery status indicator



LED1	LED2	LED3	LED4	Battery Status
Slowly Flashing	×	×	×	Under voltage
Fast Flashing	×	×	×	Over discharge
Battery LED indicator status during voltage is up				
○	○	×	×	12.8V< U_{bat} <13.4V
○	○	○	×	13.4V< U_{bat} <14.1V
○	○	○	○	14.1V < U_{bat}
Battery LED indicator status during voltage is down				
○	○	○	×	12.8V< U_{bat} <13.4V
○	○	×	×	12.4V< U_{bat} <12.8V
○	×	×	×	U_{bat} <12.4V

NOTE:
①Voltage value for 12V system at 25℃, please use 2× in 24V system ;
②"○"LED indicator on; "×"LED indicator off.

6. Setting Operation



1)Load ON/OFF Setting

When the controller is powered on, press the button to control the load output.

2)Battery Type Setting

Operation:

Step 1: Enter setting mode by pressing button for 5s until the battery status LEDs are flashing.

Step 2: Select the desired mode by pressing button.

Step 3: The mode will be saved automatically without any operation for 5S and LED will stop flashing.

Battery Type Indicator

LED1	LED2	LED3	Battery type
○	×	×	Sealed(Default)
○	○	×	Gel
○	○	○	Flooded

NOTE: "○"LED indicator on "×"LED indicator off