EPEVER LS-E-EU Series-5A-30A PWM Charge Controller User Manual

LS E EU Series-5A 30A PWM Charge Controller User Manual

Contents

LS-E-EU Series-5A-30A PWM Charge Controller

※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.
※Do not install this product in humid, salt spray, corrosion, greasy, flammable, explosive, dust accumulative, or other severe environments.

Solar Charge Controller

Safety Information

- Read all the instructions in the manual before installation.
- DO NOT disassemble or attempt to repair the controller.
- Install an external fast-acting fuse or breaker as required.
- Disconnect the solar module and fast-acting fuses/breakers near the batterybefore 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 controller's parameters.
- The battery connection may be a single battery or a bank of batteries.
- Risk of electric shock! The PV and load can produce high voltages when thecontroller is working.

Overview

The LandStar E/EU 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, and Float
- Support 3 charging options: Sealed, Gel, and Flooded
- Battery status LED indicator indicates battery situation
- Battery temperature compensation function
- With humanized settings, the operation is more comfortable and convenient
- The USB provides a power supply that can charge electronic equipment(LS **EU series only)**
- Battery type and load output can be set via the button
- Extensive Electronic protection

Product Features

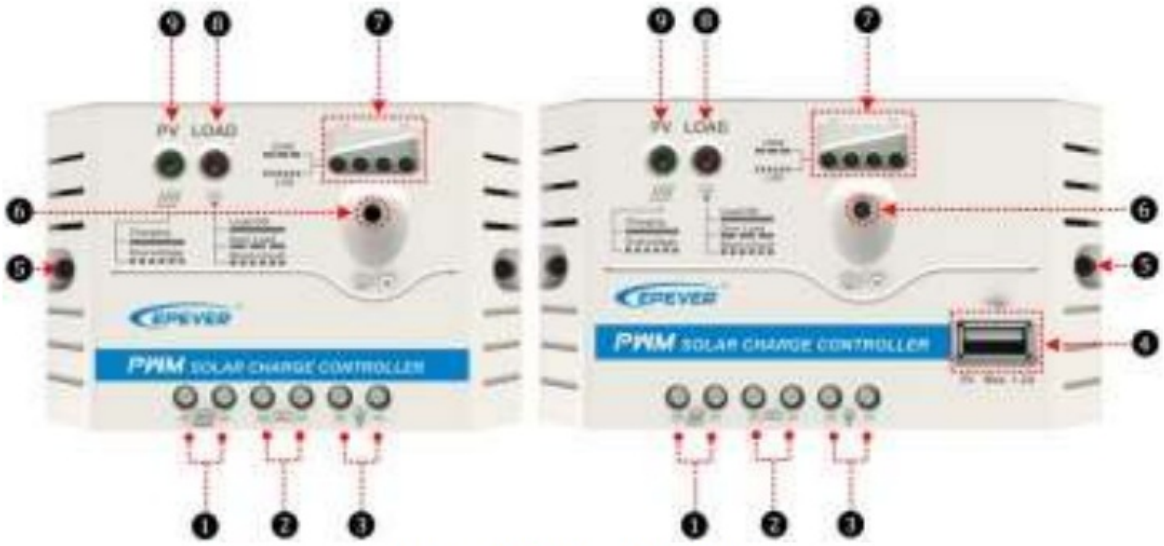


Figure 1 Product Feature

1	PV Terminals	6	Load Switch Button
2	Battery Terminals	7	Battery status LED indicator
3	Load Terminals	8	Load status LED indicator
4	USB output interface (LS EU series only)	9	Charging status LED indicator
5	Mounting Hole Φ4.5		

Wiring

Connect the system in the order of ❶battery ➔ load ➔ PV array following Figure 2-2," Schematic Wiring Diagram," and disconnect the system in the reverse order❸❷❶.

NOTE: Do not connect the circuit breaker or fast-acting fuse while wiring the controller. Ensure that the leads of "+" and "-" poles are connected correctly.

NOTE: A fast-acting fuse whose current is 1.25 to 2 times the controller's rated current must be installed on the battery side with a distance from the battery not greater than 150 mm.

WARNING: The controller has no PV reverse connection protection; please connect it correctly.

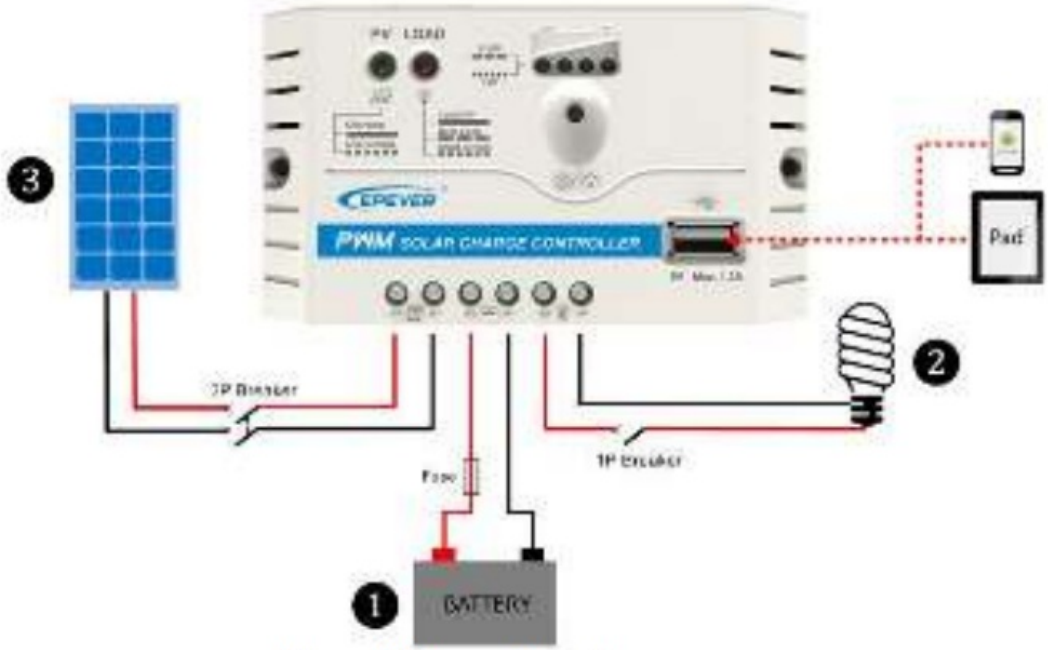


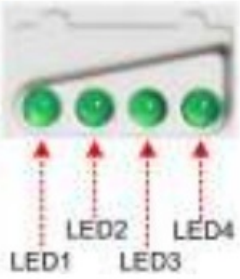
Figure 2 Connection diagram

LED Indicators

1. Charging and load status indicator

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

2. Battery status indicator

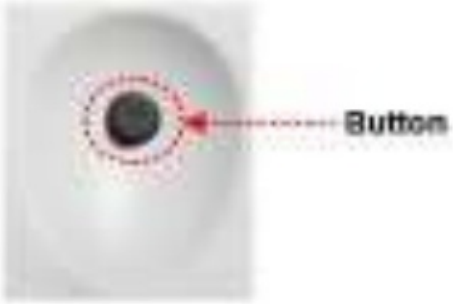


LED1		LED2	LED3	LED4	Battery Status
Slowly Flashing		X	X	X	Under voltage
Fast Flashing		X	X	X	Over-discharge
	Battery LED indicator status during voltage is up				
0		0	X	X	12.8V< Ubat<13.4V
0		0	0	X	13.4V< Ubat<14.1V
0		0	0	0	14.1V < Ubat
	Battery LED indicator status during voltage is down				
0		0	0	X	12.8V<Ubat<13.4V
0		0	X	X	12.4V<Ubat<12.8V
0		X	X	X	Ubat<12.4V

NOTE:
① The above voltage values are measured in the 12V system at 25°C; please double the values in the 24V system.

② “○” states LED indicator on; “×” states LED indicator off.

Operating



1. Load ON/OFF Setting Press the button to control the load output when the controller is powered on.
2. Battery Type Setting

Operation:
Step 1: Enter the setting mode by pressing the button for 5s until the battery status LEDs are flashing.
Step 2: Select the desired mode by pressing the button.
Step 3: The mode is saved automatically without any operation for 5S, and the LED stops flashing. Battery Type Indicator shows as below:

LED1	LED2	LED3	Battery type
0	X	X	Sealed(Default)
0	0	X	Gel
0	0	0	Flooded

NOTE: “○” states LED indicator on “×” states LED indicator off
Battery Voltage Control Parameters Below parameters are measured in the 12V system at 25 ºC; please double the values in the 24V system

Battery Type	Sealed	Gel	Flooded
Over Voltage Disconnect Voltage	16.0V	16.0V	16.0V
Charging Limit Voltage	15.0V	15.0V	15.0V
Over Voltage Reconnect Voltage	15.0V	15.0V	15.0V
Equalize Charging Voltage	14.6V	——	14.8V
Boost Charging Voltage	14.4V	14.2V	14.6V
Float Charging Voltage	13.8V	13.8V	13.8V
Boost Reconnect Charging Voltage	13.2V	13.2V	13.2V
Low Voltage Reconnect Voltage	12.6V	12.6V	12.6V
Under Voltage Warning Reconnect Voltage	12.2V	12.2V	12.2V
Under Voltage Warning Voltage	12.0V	12.0V	12.0V
Low Voltage Disconnect Voltage	11.1V	11.1V	11.1V
Discharging Limit Voltage	10.6V	10.6V	10.6V
Equalize Duration	120 min.	——	120 min.
Boost Duration	120 min.	120 min.	120 min.

Protection

- **Battery Over Voltage Protection**
  When the battery voltage reaches the Over Voltage Disconnect Voltage(OVD), the controller stops charging the battery to protect the battery from being overcharged.
- **Battery Over Discharge Protection**
  When the battery voltage reaches the Low Voltage Disconnect Voltage(LVD), the controller stops discharging the battery to protect the battery from being over-discharged.
- **Overload Protection**
  The load is switched off after a delay when the load current exceeds 1.25 times the rated current. The user must reduce the load appliance, press the button, or restart the controller.
- **Load Short Circuit Protection**
  The load is switched off when the load short circuit (≥3 times the rated current) happens. The user must clear the short circuit faults, press the button, or restart the controller.
- **High Voltage Transients Protection**
  The controller is protected against small high voltage transients. In lightning-prone areas, an external lightning arrester is recommended.

Troubleshooting

Faults	Possible reasons	Troubleshooting
The charging LED turns off durin g the daytime when sunshine fall s on PV modules properly.	PV array disconnection	Confirm that PV and battery wire connections are correct and tight.
No LED indicator	Battery voltage may be less than 8V	Measure battery voltage with the multi-meter. Min.8V can start up the controller.
Charging LED fast flashes.	Battery over voltage	Check if the battery voltage is higher than the OVD, and disconnect the PV.
LED1 fast flashes.	Battery over-discharged	The load will recover when the battery voltage is restored to or above the LVR (low voltage r econnect voltage).
Load LED flashesslowly.	Overload*	0 Please reduce the number of electric equip ment. C) Press the button or restart the controller.
Load LED fastflashes.	Load short circuit	(i) Check carefully loads connection, clear the fault. ® Press the button or restart the controller.

* When the load current exceeds 1.25 times, 1.5 times, and 2 times the rated value, the controller can automatically turn off loads after 60s, 5s, and 1s, respectively.

Disclaimer

This warranty does not apply under the following conditions:

- Damage from improper use or use in an unsuitable environment.
- PV or load current, voltage, or power exceeds the controller’s rated value.
- User disassembly or attempted to repair the controller without permission.
- The controller is damaged due to natural elements such as lighting.
- The controller is damaged during transportation and shipment.

Technical Specifications

Item	LS0512E	I LS1012E	LS1024E	I LS2024E	LS0512EU	I LS1012EU	LS1024EU	I LS2024EU	I LS3024EU
Nominal system voltage	12VDC		12/24VDC Auto		12VDC		12/24VDC Auto		
Rated charge current	5A	10A		20A	5A	10A		20A	30A
Rateddischarge current	5A	10A		20A	5A	10A		20A	30A
Battery input voltage range	8V – -16V		8V- 32V		8V – -16V		8V – -32V		

Max. PV open circuit voltage	30V		50V		30V		50V		
Self-consumption	12V55mA; 24V57mA								
Charge Circuit Voltage Drop	50.21V				50.13V				
Discharge Circuit Voltage Drop	50.12V				50.17V				
USB input interface	—				5VDC/1.2A				I 5VDC/2A
Temperature compensation coefficient	-5mV/C/2V								
Environment temperature	-35-C — +50`C								
Humidity	595°/0,(N.C.)								
Enclosure	IP30				IP20				
Grounding	Common Positive								
Dimension(L x W x H)	92.8×65 x20.2mm	101.2×67 x21.8mm	101.2×67 x21.8mm	128×85.6 x34.8mm	109.7×65.5 x20.8mm	120.3×67 x21.8mm	120.3×67 x21.8 mm	148×85.6 x34.8mm	148×106.8 X43.7 mm
Mounting size	84.4mm	92.7mm	92.7mm	118mm	100.9mm	111.5mm		138mm	
Mounting hole size	04.5								
Terminals	14AWG/2.5mm=	12AWG/4mm=	12AWG/4mm=	1OAWG/6mm=	14AWG/2.5m m=	12AWG/4mm=	12AWG/4mm=	1OAWG/6mm=	8AWG/10mm=
Net weight	0.07kg	0.08kg	0.08kg	0.15kg	0.09kg	0.10kg	0.10kg	0.18kg	0.29kg

Any changes without prior notice! Version number: V4.2
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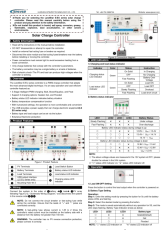
Documents / Resources

	**EPEVER LS-E-EU Series-5A-30A PWM Charge Controller** [pdf] User Manual LS-E-EU Series-5A 30A PWM Charge Controller, LS-E-EU Series-5A 30A, PWM Charge Controller, Charge Controller, Controller

References

- Home - EPEVER
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