

12/24V 30A Solar Charge Controller With USB

Operating Instructions



This 12/24V Solar Charger is suitable for permanent installations of lead acid, gel batteries and lithium chemistry (including Li-NiCoMn & LiFePO₄) solar panel systems. LEDs are provided to indicate working status - solar charge ON, load ON and battery level. Suitable for 12V or 24V systems, the charger automatically detects the connected battery voltage. Ideally suited to vehicles and simple remote power systems such as pumping stations, electric fences, remote lighting, marine applications etc.

Features

- Suits lead acid type batteries
- Suits lithium chemistry batteries, including Li-NiCoMn & LiFePO4.
- Display interface automatically switches
- Can set daytime start, night off mode
- System voltage automatic identification
- Intelligent PWM charging method
- Temperature compensation function
- Light control and time control mode
- Load output: battery voltage + 12V DC + 5V USB
- Overload, short circuit protection
- Reverse battery connection, under voltage protection

Specifications

- Maximum charging current: 30A
- Maximum discharge current: 30A
- Maximum photovoltaic panel withstand voltage: $\leq 55V$
- USB Output: 5V 2A
- Feature: No-load loss: $\leq 10mA$;
- Temperature compensation: $-3mV/cell/^{\circ}C$
- Operating Temperature: $-20^{\circ}C$ to $60^{\circ}C$

Product Diagram

1. Built-in temperature sensor
2. Mounting holes
3. External temperature sensor interface
4. Photovoltaic array interface
5. Battery interface
6. Load interface
7. RS485 communication interface
8. Switch/setting button
9. USB 5V Output interface



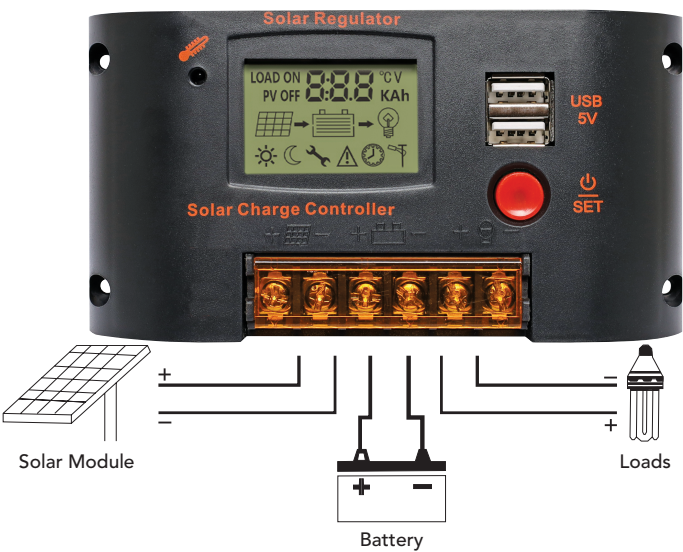
Installation

1. Shown in the connection diagram below is the connection of the solar controller to the solar module, battery and load. When connecting, please pay attention to where everything is located.

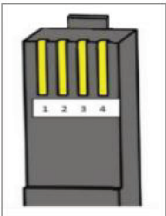
Note: Using an external temperature sensor, remote display unit and network connection module is optional.

2. If using a Temp Sensor: When a external temperature sensor is not connected, the system default value is the built-in temperature sensor. However when a external temperature sensor is connected, the internal temperature sensor is automatically disconnected.

Connection Diagram

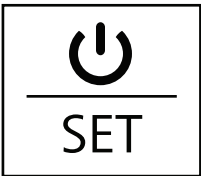


RS485 communication interface pins are defined as follows:



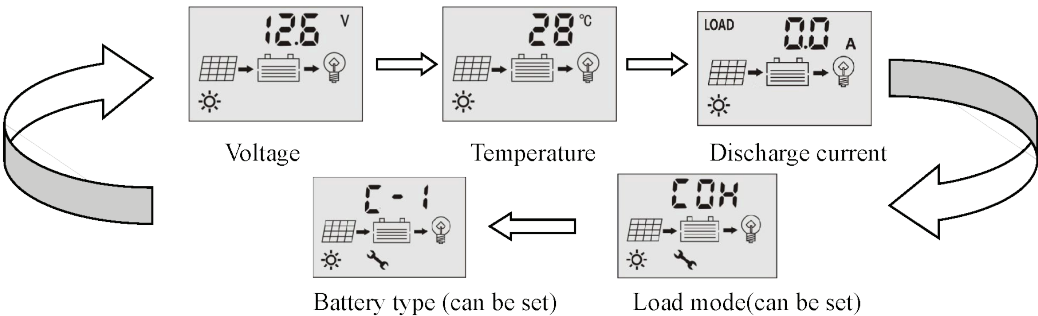
Pin	Definition
1	GND
2	TXD
3	RXD
4	5V

Setting instructions and display



Parameter setting, save and view button

Press this button for 5 seconds on the interface until the number flashes, indicating that the setting mode has been entered. After setting, press again for 5 seconds to save and exit; no operation will not save after 60 seconds. Back to Home page.
(Note: when there is no operation, the interface will enter the automatic cycle)



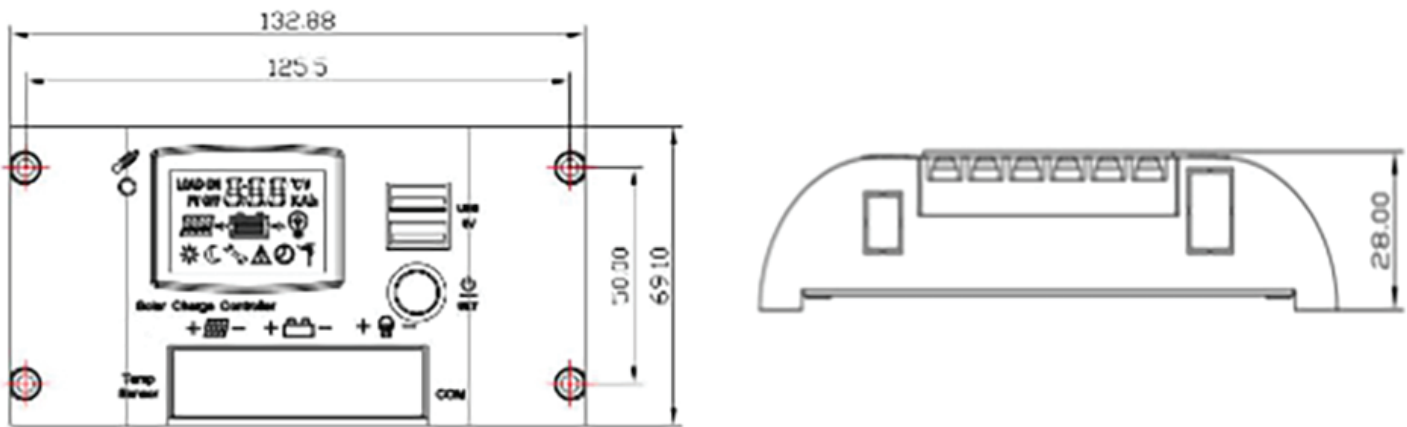
Load mode:
[C0H] Manual switch mode (default)
[L0H] Light control mode [1-12H] Light control + delay mode
[P0H] Daylight start mode, only activated when there is voltage on the PV side. Battery type:
C-1 Sealed Lead Acid or AGM
C-2 Gel Type
C-3 Flooded Lead Acid
L-3 Ternary lithium battery (12V x 3pcs max)
L-6 Ternary lithium battery (24V x 6pcs max)
F-4 LiFePO4 battery (12V x 4pcs max)
F-8 LiFePO4 battery (24V x 8pcs max)

Battery type and voltage values






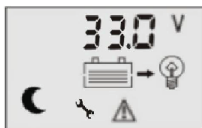

Parameter Battery type	Nominal voltage	PV charge cut-off voltage	Battery discharge cutoff voltage	Recovery discharge voltage
Lead acid*2	12V/24V	14.5V/29V	10.5V/21V	12V/24V
Ternary lithium battery*3	11.1V	12.6V	9V	11.1V
Ternary lithium battery*6	22.2V	25.2V	18V	22.2V
LiFePO4 Battery	12.8V	14.6V	11.2V	12.8V
LiFePO4 Battery	25.6V	29.2V	22.4V	25.6V

*Parameters can be customized

Dimension Diagram



Troubleshooting

Fault	Possible Cause	Method
	Under-voltage alarm	<p>When the battery voltage is lower than the undervoltage protection voltage of 9.0V (three-string lithium battery); 10.5V (12V system); 21.0V (24V system), the controller has entered the undervoltage protection state, and the icon  will appear below the LCD interface. The icon  will flash and the load circuit will be disconnected to prevent the battery from being over-discharged. At this time, the solar panel is used to charge the battery. When the battery voltage reaches the undervoltage recovery voltage of 11.1V (three-string lithium battery); 12.2V (12V system); 24.4V (24V system), the controller will resume power supply to the load.</p>
	Discharge overload	<p>When the discharge is overloaded, the LCD screen is as shown on the right. At this time, you need to manually press the button  to close the output switch, and the system will resume normal operation.</p>
	Battery voltage is not within battery type	<p>When the battery voltage is not within the battery range, as shown on the right, the LCD screen will appear below . At this time, please unplug the battery and replace it with a suitable one.</p>
Display flash	Unconnected battery	<p>Unconnected battery, but display flash. At this time, check if the battery is connected, if there is any contact failure. If everything is normal, please contact the factory for repair.</p>

Note: The analysis of product terminology, product application parameters and other related issues can be found through the official website or publicly available.

Altronic Distributors warrants this product for one year from date of purchase from Altronics or its resellers to the consumer. If this item is part of an installation or another product, please contact the installer or supplier for your warranty.

During the warranty period, we undertake to repair or replace your product at no charge if found to be defective due to a manufacturing fault. The warranty excludes damage by misuse or incorrect installation (i.e. failure to install and operate device according to specifications in the supplied instruction manual), neglect, shipping accident, or no fault found, nor by use in a way or manner not intended by the supplier.

For repair or service please contact your PLACE OF PURCHASE.

If this item was purchased directly from Altronics please make a warranty claim by:

1. FOR MAIL ORDER CUSTOMERS (includes school and trade orders),

- a) Calling your nearest store location and quoting your tax invoice number.
- b) Upon contacting Altronics, we will issue an R.A. (Return Authorisation). As Altronics have a number of service agents throughout Australia, a copy of the R.A. will be emailed, faxed or mailed to you with full instructions of how and where to send the goods. The freight for shipping goods back to Altronics for all repairs is at the customers expense.
- c) A copy of the R.A. form, (or at the very minimum, the R.A. number) must accompany the goods to effect the repair.
- d) Altronics will pay the return freight to the customer where the warranty claim has been accepted.
- e) Please quote the R.A. number in any correspondence to us.

2. FOR OVER THE COUNTER PURCHASES to make a warranty claim, please return the goods to us in any of our stores, with a copy of your proof of purchase (tax invoice).

- a) Upon leaving the goods at one of our stores, an R.A. number will be issued to you.
- b) Once repaired, you will be contacted, advising that the goods are ready to be collected from the store.

It is at Altronics discretion as to whether the goods will be repaired or replaced (whilst under warranty); and as to whether identical goods will be used to replace the item due to changes of models / products.

Note: Under no circumstances should you attempt to repair the device yourself or via a non-authorised Altronics service centre, as this will invalidate the warranty!

Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

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