

Intelligent Solar Charge Controller User's Manual

3024CTE

Please read this manual carefully before you use this product.

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1 Product Introduction

The controller is a kind of intelligent, multi-purpose solar charge and discharge controller. The family use the fixed LCD display, with a very friendly interface, various control parameters can be flexibly set, fully meet your various application requirements. The controller has following features:

- Image of LCD graphic symbol
- Automatic Identification System Voltage level
- Automatic Temperature Compensation
- Settable Operating mode of Load
- Battery low Voltage Disconnection(LVD)
- Simple button operation
- Intelligent PWM charge mode
- Adjustable charge-discharge control parameters
- Short Circuit Protection
- Battery reverse-discharge protection
- Battery reverse connection protection

2 Installation

Install:

- 2.1 Ready tools and cables. Encourage you to matching the right cables. Ensure that the current density $<4A/mm^2$ that is conducive to reducing the line voltage drop. Recommended: 30A with $10mm^2$ cable. Check weather the installation sites compliance with the relevant safety requirements. Please avoid the damp, dusty, there is a place flammable, explosive and corrosive gases use the controller to install.
- 2.2 Install the controller into a fixed vertical plane. See section 5 of the pore size and pore spacing. In order to ensure a good thermal control conditions, please set aside each 10cm below the controller space
- 2.3 As shown on the figure 1, connect the (1) Load, (2) Battery and (3) Solar Panel to the controller according to the order of (1) (2) (3). Pay attention to the load, battery, solar panel and controller of same polarity.

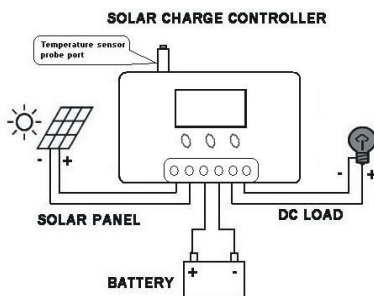


Figure 1














2.4 Put into the external temperature sensor on the left of the controller (probe port). The temperature sensor should be similar space with battery. (Otherwise, the controller will control the parameters of all fixed temperature compensation.)

Demolition: To prevent accidents, please order the demolition of solar panels, battery and load disconnect with controller




Note: Battery polarity will not damage the controller, but you will have a load equipment security risks.

3 Operation

3.1 Description of LCD graphic symbol

-  : Stop-powered status for loads
-  : Power to the load status
-  : Float charging the battery
-  : Load
-  : Dawn
-  : Dark
-  : Load timer control
-  : Stop the battery charging
-  : Bulk charging the battery
-  : The system is working correctly
-  : Battery is running out of electricity
-  : Battery charge capacity instruction
-  : Battery

3.2 Description of Button Function:

-  : Interface loop switch button, use the button to cycle between pages in each switch cycle sequence shown in Figure 2
-  : Adjustment of parameters plus buttons. In addition, at the state in the parameter view, long press the button more than 5 seconds, all parameter to restore factory setting.
-  : Adjustment of parameters minus button. In addition, in the main interface, click this button to switch the load.

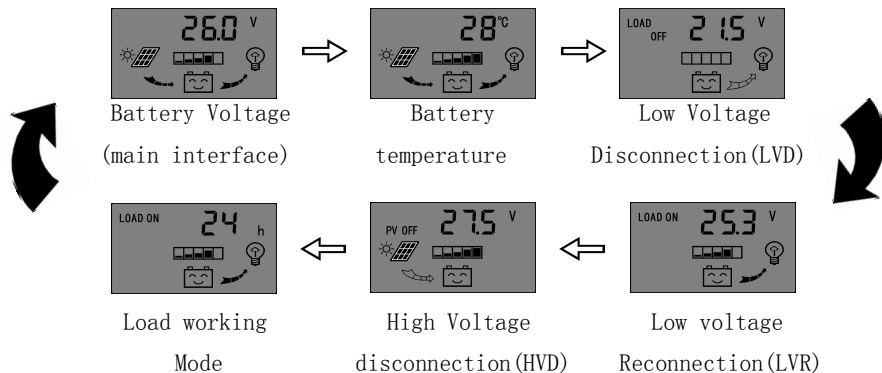





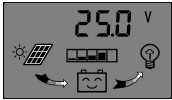
Figure 2

3.3 View and set the parameters


The controller will default entry “battery voltage” interface after correct power-on. This is the main interface. Use the button  could in turn visit the following parameters interface. If that interface could be set, long press the button  (>5seconds, numbers start flashing) To enter the parameter setting interface; set out the parameter interface after long press the button  again. (The numbers stops flashing)

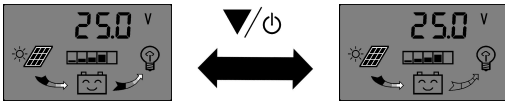
3.3.1 Battery Voltage of View

As shown on the following, displays the value for current battery voltage. This interface (main interface) displays charge status, discharge status, battery capacity and battery voltage.



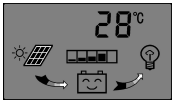
3.3.2 The load on/off control

View the interface in the battery voltage could be used key  to On/off the load. In other interface, the key there is no such feature.







3.3.3 Environment Temperature of View

As shown on the following, displays the ambient temperature of the controller, the value used for temperature compensation on HVD function. The sensor must be plug in before using the controller.







3.3.4 View and set the Low Voltage Disconnection Protection

As shown on the following, shows the values for the LVD Protection voltage. When the battery voltage is lower than protection voltage, the controller will disconnect the load circuit to prevent battery over-discharge. Long press the button  (>5seconds) in this interface, numbers start flashing, that has entered the LVD setup interface, you can use the key 、 to adjust the parameter. After long press the key  (>5seconds) to exit parameter setting interface, the controller will save the settings.








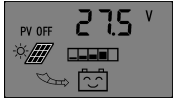
3.3.5 View and set the Low Voltage Reconnection

As shown on the following, shows the values for the LVR voltage. If the LVD protection in the controller, when the battery voltage is restored to the higher voltage than LVR voltage, the controller will re-connect the load circuit. Long press the button  (>5seconds) in this interface, numbers start flashing, that has entered the LVR setup interface, you can use the key 、 to adjust the parameter. After long press the key  (>5seconds) to exit parameter setting interface, the controller will save the settings.








3.3.6 View and set the High Voltage Disconnection

As shown on the following, shows the values for the HVD voltage. When the battery voltage reaches to HVD voltage, the controller will cut off the charging circuit to prevent over-charging battery. Battery voltage drops under the value the charging circuit will be re-connected. Long press the button  (> 5seconds) in this interface, numbers start flashing, that has entered the HVD setup interface, you can use the key  /  、  to adjust the parameter. After long press the key  (>5seconds) to exit parameter setting interface, the controller will save the settings.



3.3.7 View and set Load Working Mode

As shown on the following is Load working mode interface, different values represent different load working patterns. 24h—said Normal Mode, in case of no fault state of the load is always in power. 1h~23h—said Light Control with Time Control Mode, Load on after dark, and turn off the load according to the timer setting. Long press the button  (> 5seconds) in this interface, numbers start flashing, that has entered the Load Working Mode setup interface, you can use the key  /  、  to adjust the parameter. After long press the key  (>5seconds) to exit parameter setting interface, the controller will save the settings.






4 Common Fault and Handling

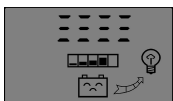
LVD Protection and Treatment

Screen display as shown in the figure that the battery drops below the LVD protection voltage. The controller has entered the LVD protection state, load circuit has been disconnected. Use the solar panels or charger recharge the battery when the battery voltage reaches LVR voltage, the controller will resume on the load power supply, into the normal working state.



Short Circuit Protection and Treatment

Screen display as shown in the figure and flashing expressed there is short-circuit on the load loop circuit. The controller has entered into Short-Circuit Protection state. Check the load if there is damage or not, if there is cable short circuit or not, after trouble shooting short press the button  , then press  /  for restoration.



5 Quality Assurance

5.1 Quality assurance should be carried out according to the following rules:

- The product is guaranteed of replacement, returning and repairing within 7 days after sale.
- The product is guaranteed of replacement and repairing within 1 month after sale.
- The product is guaranteed of repairing within 12 months after sale.

5.2 If it is not possible to identify the using date of the controller, we would refer to the ex-work date, and prescribe 18 months as the warranty period. We need to charge beyond the warranty period. The controller can be repaired for life no matter when and where you use it.

5.3 If the controller is damaged by the following causes, we need to charge even if it is in the guarantee period:

- Do not operate according to the user's manual.
- Use the controller under the condition which can cause the breakdown and aging of the apparatus
- Improper carrying or storage.
- Regarding to the service of replacement, returning and repairing, you need to retreat the product to our company, and we decide whether to replace or repair after we make clear who should be responsible.

5.4 We will not note if there is any change of this product.

6 Technical Data

parameter	Data		parameter	Data
Rated Current	20A	30A	Installation cable area.	4mm ² ~6mm ²
Rated Voltage	12V/24V		Operating Temperature	-10°C~60°C
Open Circuit Voltage of Solar panel	<50V		Storage temperature	-30°C~70°C
Low Voltage Disconnection (LVD)	10.7V/21.4V		Humidity requirements	≤90%, no condensation
Float Voltage	14.0V/28.0V		Size	188mm*90mm*48mm
Low Voltage Reconnection (LVR)	12.6V/25.2V		Mounting hole spacing	60mm*178mm—Φ5
No load loss	≤30mA		weight	360g
Loop Voltage Drop	≤200mV		Notes	
Charging Mode	PWM mode			
Temperature Compensation	-4mV/Cell/°C			

