LCD Solar Controller Manual

Please open the package and check if the product model matches the one on the packaging.
Contents:

1 main unit

1 user manual

First, Model Specifications

Model: SY-SLCD
Input voltage: DC12V/24V, DC36V, DC48V
Output voltage: DC12V/24V, DC36V, DC48V, DC5V/1.5AX2USB
Operating temperature: -25℃~65℃

Second, Product Functions

This product is a multifunctional solar controller with LCD display, featuring a clock display function and 7 operating modes. The 7 operating modes are: charging mode, light control mode, light control + delay control mode, general control mode, manual control mode, timing control mode, and test mode. The test mode is only applicable for factory testing.

The charging control function is not limited by any mode restrictions, and charging starts immediately once the charging conditions are met.

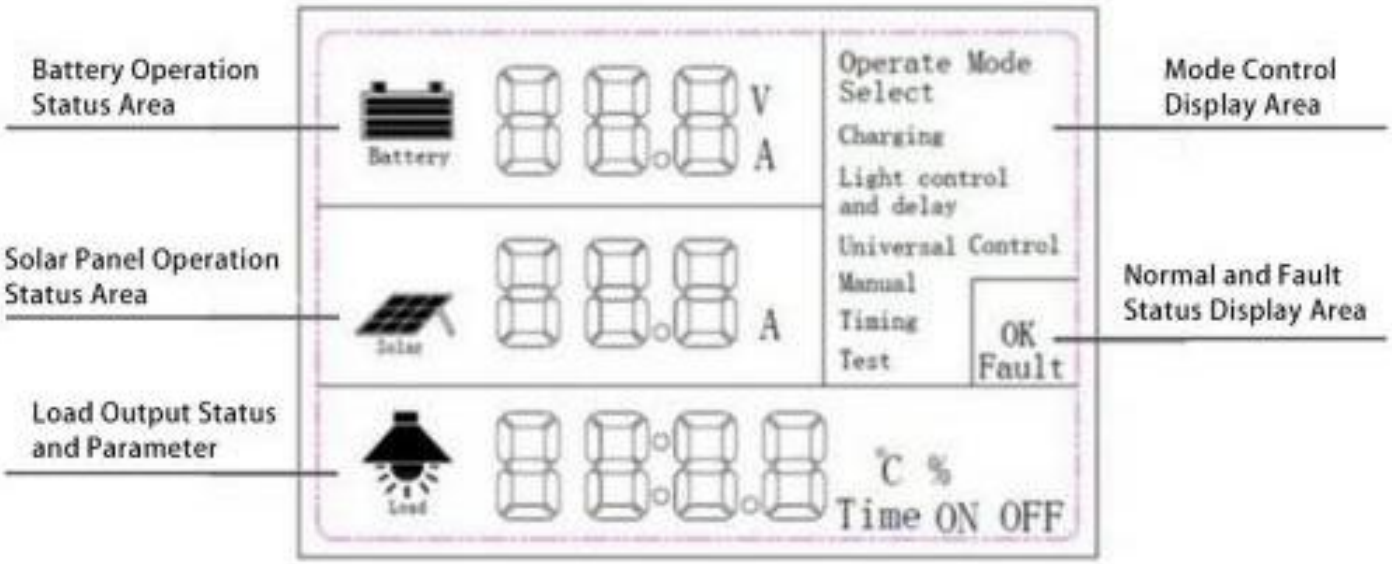
The discharge control function varies according to different control modes and is explained as follows under normal conditions:

1. Charging mode: Discharge is not allowed under any conditions.
2. Light control mode: After the controller detects nighttime, a 10-minute delay is activated before discharge starts. When daytime is detected, a 10-minute delay is activated before discharge stops.
3. Light control + delay control mode: After the controller detects nighttime, a 10-minute delay is activated before discharge starts. A countdown timer starts, and discharge stops when the timer reaches 0. The maximum delay time is 23:59.
4. General control mode: Under normal conditions, discharge is maintained continuously.
5. Manual control mode: Discharge can be manually turned on or off using "▼".
6. Timing control mode: Discharge can be scheduled to start and stop at specific times.
7. Test mode: Similar to light control + delay control mode, but with a 10-minute delay time removed.
8. After low-voltage protection, if discharge is still needed, press and hold the "▼" button for 5 seconds to continue output. Discharge can only be stopped manually. Please use this function with caution as it may damage the battery.

Third, Display and Operation Instructions

1. Display screen

(1) Full-screen display



(2) Battery Operation Status Display Area Explanation

Indicates the battery charging status and voltage. When the battery is charging, it displays the static voltage of the battery.

Displays the battery voltage and discharging current, switching display every 5 seconds.

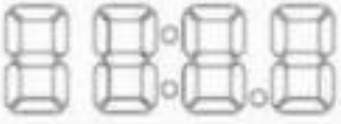
(3) Solar Panel Operation Status Area

When the solar panel is displaying, it indicates the charging status; when it is not displaying, it indicates that charging has stopped.

Displays the charging current.

(4) Load Output Status and Parameter Display Area

When discharging, the load icon is lit; when not discharging, it indicates that discharging has stopped.



When "℃" is displayed, the 4-digit value represents the temperature of the controller; when "%" is displayed, the 4-digit value represents the battery capacity in percentage; when "Time" is displayed, the 4-digit value represents the 24-hour clock time; when "Time ON" is displayed, the 4-digit value represents the timed start time in timed control mode; when "Time OFF" is displayed, the 4-digit value represents the timed stop time in timed control mode or the timed stop time in light control + delay control mode.

(5) Mode Control Display Area

"Operate Mode Select" stays on, indicating that this is the control mode selection area.

"Charging" stays on, indicating that the controller is operating in charging mode. "Light Control" stays on, indicating that the controller is operating in light control mode.

"Light Control and delay" stays on, indicating that the controller is operating in light control start + delay stop control mode.

"Universal Control" stays on, indicating that the controller is operating in universal control mode.

"Manual" stays on, indicating that the controller is operating in manual control mode.

"Timing" stays on, indicating that the controller is operating in timing control mode.

"Test" stays on, indicating that the controller is operating in test mode.

(6) Normal and Fault Status Display Area

"OK" stays on, indicating that the controller is working properly.

"Fault" flashes, indicating that the controller has detected abnormal battery voltage, discharge current, or controller temperature.

When the battery voltage is abnormal, both "Fault" and the voltage value flash.

When the discharge current is too high, both "Fault" and the abnormal current value flash.

When the controller temperature exceeds 75℃, both "Fault" and the temperature value flash.

2. Operation Instructions

(1)

"▲" - Numeric and mode adjustment button.

"■" - Set/confirm button.

"▼" - Shift and force start/stop button.

(2) Time Setting

Upon power-on, it immediately enters the time setting state, where the first digit (leftmost digit) of the 4-digit value displayed in the load output status and parameter display area flashes, indicating that this digit can be adjusted. Press "▲" to adjust the value. To adjust other digits, use "▼" for shifting adjustment. If you need to adjust the time again, long press "■" for 5 seconds to enter the time setting state.

(3) Mode Adjustment

ntrol mode, and press "■" to confirm.

(4) Delay Stop Time Adjustment in Light Control Start + Delay Stop Control Mode

When "Light Control and delay" control mode is selected and confirmed, the delay stop time parameter will automatically appear. The operation method is the same as time setting, and the load output status and parameter display area will show "Time OFF". After adjustment, press "■" to return to the display mode. To modify the delay stop time parameter again, press "■" twice to enter the adjustment.

(5) Start Time and Stop Time Adjustment in Timing Control Mode

When "Timing" control mode is selected and confirmed, the start time parameter will automatically appear. The operation method is the same as time setting, and the load output status and parameter display area will show "Time ON". After adjusting the start time, press "■" to automatically enter the stop time parameter adjustment, and the load output status and parameter display area will show "Time OFF". After adjustment, press "■" to return to the display mode.

Fourth, Protection Parameters

(1) Voltage Protection Explanation

When using a 12V battery, if the battery voltage falls below 10.5V, a 6-second delay low voltage protection will be activated. The voltage value and "Fault" will flash, and the discharge will stop. When the voltage recovers to 11.5V, it resumes normal operation. When the voltage exceeds 16.0V, the voltage value and "Fault" will flash, and the discharge will stop. When the voltage recovers to 15.0V, it resumes normal operation.

When using a 24V battery, if the battery voltage falls below 21.0V, a 6-second delay low voltage protection will be activated. The voltage value and "Fault" will flash, and the discharge will stop. When the voltage recovers to 23.0V, it resumes normal operation. When the voltage exceeds 32.0V, the voltage value and "Fault" will flash, and the discharge will stop. When the voltage recovers to 30.0V, it resumes normal operation.

When using a 36V battery, if the battery voltage falls below 31.5V, a 6-second delay low voltage protection will be activated. The voltage value and "Fault" will flash, and the discharge will stop. When the voltage recovers to 34.5V, it resumes normal operation. When the voltage exceeds 48.0V, the voltage value and "Fault" will flash, and the discharge will stop. When the voltage recovers to 45.0V, it resumes normal operation.

When using a 48V battery, if the battery voltage falls below 42.0V, a 6-second delay low voltage protection will be activated. The voltage value and "Fault" will flash, and the discharge will stop. When the voltage recovers to 46.0V, it resumes normal operation. When the voltage exceeds 64.0V, the voltage value and "Fault" will flash, and the discharge will stop. When the voltage recovers to 60.0V, it resumes normal operation.

(2) Discharge Current Protection Explanation

If the discharge current exceeds 150% of the rated current, immediate protection will be activated. The protection current value and "Fault" will flash, and the discharge will stop.

If the discharge current is between 110% and 150% of the rated current, a 10-second delay protection will be activated. The protection current value and "Fault" will flash, and the discharge will stop.

If the discharge current is between 100% and 110% of the rated current, a 10-minute delay protection will be activated. The protection current value and "Fault" will flash, and the discharge will stop.

(3) Charging Protection Explanation

When using a 12V battery, if the battery voltage falls below 13.0V, the charging will be activated. When the voltage exceeds 14.8V, the charging will stop.

When using a 24V battery, if the battery voltage falls below 26.0V, the charging will be activated. When the voltage exceeds 29.6V, the charging will stop.

When using a 36V battery, if the battery voltage falls below 39.0V, the charging will be activated. When the voltage exceeds 44.8V, the charging will stop.

When using a 48V battery, if the battery voltage falls below 52.0V, the charging will be activated. When the voltage exceeds 59.2V, the charging will stop.

⚠Notes

1. Do not throw this product into the fire to prevent permanent damage.
2. Do not immerse this product in water to prevent permanent damage.
3. Do not use this product in a damp or high-temperature environment.
4. Do not attempt to disassemble this product to prevent damage.
5. Do not short-circuit the output side directly to avoid accidents.

Please note that lithium batteries must be equipped with a protection board from reputable manufacturers and the full charge parameters should be properly set before charging.