

Our controllers are designated according to the following convention. Please give clear indication before placing orders, so that we can provide you products promptly and accurately.

WSC 15
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| _____ 15: maximum current (A) 15 = 15A
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| WSC: Wind/Solar Hybrid light controller

Wind/Solar Hybrid light controller is controlled by micro-CPU, it is an intelligent controller and in possession of Wind & Solar energy control, it is integrated with solar and wind control, it can implement Breeze wind generation by exerting pressure on wind turbine; Intelligent control of the generator brakes and unloading so that it can protect the generator and equipment safety; When the wind is weak and the wind turbine output is insufficient to charge the battery, it will start the boost circuit automatically; When the wind is too strong, it will start the unloading protection circuit automatically.

Wind/Solar Hybrid light controller has the SOC (state of charge) battery system control function; It can intelligently sense the outside light. It turns on lights at dark, and turns off lights at dawn or the fixed time. This controller also intelligently monitors battery charging and discharging. It will protect batteries by turning off lights automatically when the battery voltage is low. The controllers will automatically turn to float-charge stage when battery is full the batteries by pulse-width-modulation (PWM) automatically as the batteries approach full charge. It will stop charging to protect batteries from discharging through solar panel at dark. The controller also has a protection circuit to prevent accidental damage. The environmental defense grade is IP22

The diagram shows the WSC15 unit with four input terminals labeled A, B, C, and D. The connections are as follows:

- Load:** Connected to terminal D (positive) and terminal A (negative).
- Battery:** Connected to terminal C (positive) and terminal B (negative).
- Solar Panels:** Connected to terminal D (positive) and terminal A (negative).
- Wind Turbine:** Connected to terminal C (positive) and terminal B (negative).

- Please connect the terminal of A, B, C separately
- Connection must be according to the figure. Before connection, please Check the negative and positive terminal “+” “-” to avoid failure.
- Waiting for 3 minutes after the connection, to make sure the solar controller has finished the program entry before operation.

- Notice: ●The controller must be connected to linear loads such as LED lamps, light bulbs, etc.
- Please reference the below technical parameter to choose the right wire size according to the current.
- The terminal must be against oxidation and mould, to make sure the connection is in good condition.
- Please make necessary protection from the water, wet, insect for this solar controller when use it open-air. To make sure the wire connection inside is in good condition.
- Don't use power from the illumination of light for the solar panel. (The power of the light is too low to charge the battery.)
- Don't use other DC source instead of the solar panel to charge the battery. It will damage the solar controller.
- Please ensure the output of wind turbine must be three-phase alternating current and in good contact.
- The wind turbine and solar panel can be connected individually or together. To make sure that the battery is in good contact.
- When the battery is full and the indicator light is green, the controller will stop the wind turbine, don't rotate the wind turbine compulsively at this time.
- When the wind speed is too large, the controller will brake automatically to reduce the speed of the wind turbine.

3. Indicator Light

The controller has a red charging indicator LED light(CHARGE), a a green load indicator LED light(LOAD), a Battery Energy indicator LED light(be the first from the left). The red indicator LED light (CHARGE) will light when the batteries are being charged through the solar panel, and the green light will be out. When the red light is out and green light is light, the street lamp will work. The green light also helps with search and setup. Battery Energy indicator LED light(be the first from the left) will be red if the battery voltage is low, orange during normal working range and green for a fully charged battery.

working voltage range of the colour-changing lamp(reference)

colour-changing lamp	12V	24V
Red light	10.5V—11V	21V—22V
Orange light	10. 5~11V-13. 7V	21~22V-27. 4V
Green light	≥13.7V	≥27.4V

4. Button

- The controller has two buttons: Set and Resct, the Set button is used to query and set the operating mode. Click and then release (less than 2 seconds), the query operation; press and hold the set operation. Press the Set button on the controller, until the set time or set to release the light control then complete the set.
- Reset for repairs or street light does not start until use.

5. Check and Setup

Inquiry: Press the **SET** button while observing the LOAD indicator:

- The controller is in light-adjusting condition when the light illuminates fast for 2 seconds.
- The light flashes slowly one time, the controller will turn on the load for 30 minutes, two flashes for 60 minutes and so on up to 20 flashes for a maximum of 10 hours.

Setup: Our controller is in the default light-adjusting mode, no time-setting before sending to you. Press the **SET** button for a few seconds until the LOAD light illuminates. Pressing the **SET** button will increase the number of flashes which correspond to 30 minute increments of the lights being on each night. The light flashes slowly one time, the controller will turn on the load for 30 minutes, two flashes for 60 minutes and so on up to 20 flashes for a maximum of 10 hours.

If you want to change the time-control+ light control into the default light control mode, just disconnect the solar controller, solar panel, and battery, after a few seconds, the solar controller will recover to the default light control mode automatically.

6. Time-fixed mode

time-control+ light control: The time that the light load is switched on can be adjusted between 0.5 and 10 hours. The load will be switched on at dark, and turn off according to the fixed time.

7. Model and Specifications

model	WSC15 10A	WSC15 15A
parameter		
System voltage	12V / 24V automatic sense	
Max charge current	10A	15A
Max discharge current	10A	15A
High voltage disconnect (HVD)	13. 7V~14. 4V / 27. 4V~28. 8V /	
Low Voltage disconnect (LVD)	10.5V—11V / 21V—22VV /	
Low Voltage restore (LVR)	11.5V~12V / 23V~24V /	
Overpressure of Wind turbine and unloading voltage	$\geq 22V$	$\geq 44V$
(Maximum wire length $\leq 1m$)		
Charge loop Voltage drop	$< 300mV$	
(Maximum wire length $\leq 1m$)		
discharge loop Voltage drop	$< 50mV$	
Light control	Light control turn on + light control turn off	
Light control + time control	Light control turn on + light control turn off / time setting turn off	
Time control classification	0.5 hours + 0.5 hour per step up to 10 hours	
Output route	Single	
Ambient temperature	$-25^{\circ}C—55^{\circ}C$	
Quiescent dissipation	24mA	

8. Trouble shooting

● **Phenomenon:** Green light goes out, the red indicator LED light (CHARGE) light.

Reason: Low voltage of battery

Solution: A. Cut off the load, and reconnect the load after the battery recharged.

B. If there is trouble with the battery charging, increase solar panel's power or change battery.

● **Phenomenon :** The three colors battery power indicator light is orange and the LOAD LED light is green. But the load stops working.

Reason: Overload or short-circuit happens, the fuse inside disconnected automatically.

solution: eliminate the reason of the overload or short circuit load for 10-20 minutes, the insurance can be automatically restored, when press the Reset, reset button the load will return to work.