

# External Controller

**WWS04A-12**



**Owner's manual**

## INTRODUCTION:

The advanced wind/solar hybrid controller is specially designed for high-end small-scale wind/solar hybrid system and especially suitable for wind/solar hybrid street light system and wind/solar hybrid monitoring system. The controller can control wind turbine and solar panel at the same time and transform the wind and solar energy into electricity for the DC load use, with excess energy stored into batteries. Varieties of appearance and function design, which is flexible to meet the requirements of different customers.

## PERFORMANCE FEATURES:

- ◇ Superior military-grade components to ensure the product stability.
- ◇ Perfect protection function, thus the system has higher reliability.
- ◇ Check and set all operation parameters as requirement from LCD display.
- ◇ Voltage limiting and current-limiting charge mode, ensures battery in the best charging status.
- ◇ Two DC Load output, light-control, time-control, constant output, and multiple output control mode selection.
- ◇ PWM stepless unload mode, which burn the excess power into dump load, making the battery charging in best status.
- ◇ Design of high quality aluminum alloy appearance, with small size and good cooling effect.
- ◇ “Industrial Products Quality Supervision and Inspection Center Test Report” from Posts and Telecommunications Ministry of Information Industry.
- ◇ European CE certification.

## OPTIONAL FUNCTIONS:

- ◇ Temperature compensation function.
- ◇ Low voltage charge function, which makes full use of low wind power.
- ◇ RS communication function: RS232/RS485/RJ45/GPRS are optional communication ports.
- ◇ By-pass function: It will switch to the city grid automatically when the battery is under voltage, which ensures the continuity and stability of system.

## OPTIONAL ACCESSORIES:

### Ethernet communication module

CNS311 is a terminal device using the Ethernet data transmission. Embedded Ethernet serial converter module integrated within the TCP / IP protocol, complete the networking of device easily, fast access to the LAN and the Internet. The module is transparent to user, who does not need to know well the complex network and TCP / IP protocol.

## GPRS communication module

ZSD3110 is a terminal device using the GPRS wireless data transmission. Which supports for PPP, TCP, UDP, ICMP and other complex network protocols and SOCKET standards, providing completely transparent data transmission and users free control transmission. This module supports point-to-point, point-to-multipoint, equipment-to-equipment, equipment-to-center etc different communications modes. Users do not need to worry about complex network protocol, they can have the wireless data transceiver with RS232/485/422 interfaces, So that the device can be access to Internet anytime and anywhere.

## RS485-USB converter

Universal USB/RS-485 converter, Without external power supply, compatible with USB, RS-422, RS-485 standards, with ability to convert single-ended USB signals to the balanced differential RS-422 or RS-485 signals. Converter with active internal automatic transceiver conversion, unique I / O circuit automatic control data flow direction, dispensing with any handshaking signals (such as RTS, DTR, etc.) and jumper settings to achieve full-duplex RS485-232 converter RS485-232 converter (RS-22), half-duplex (RS-485) mode switch, plug and play.

## RS485-232 converter

Compatible with both RS-232 and RS-485, with ability to convert single-ended RS-232 signal to balanced differential RS-485 signal, extended RS232 communication to 1 km away, and no external power supply needed. Half-duplex (RS-485) mode switch, plug and play. Ensure that it meets all existed communications software and interface hardware, dispensing with any software modification which used for previous RS232 working mode.

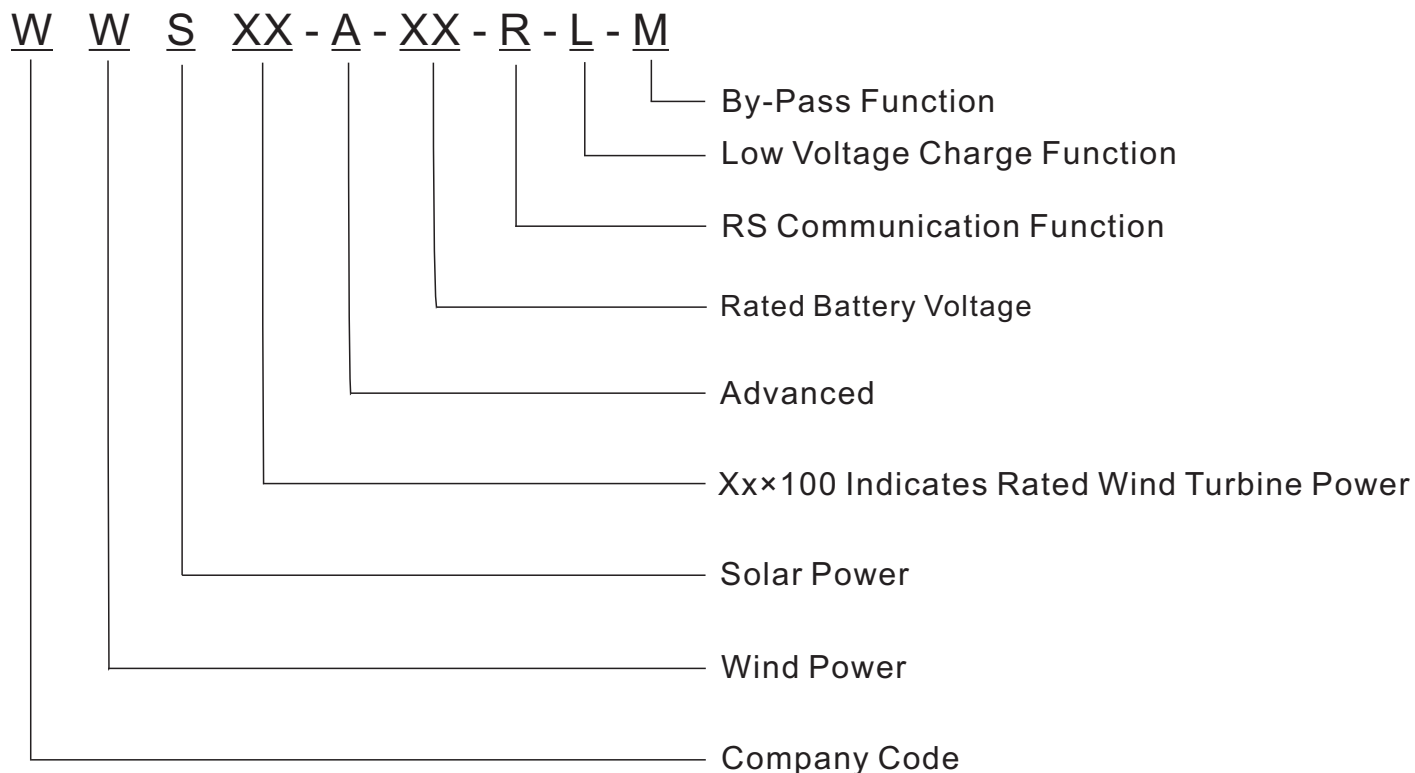
## RS232-USB converter

RS232-USB converter is especially for different computer communication series, external devices have the remote data communications between smart devices, a standard serial interface conversion to each other. It is mainly used for the remote communication between the host computers, the host computer and between peripheral point to point. Commonly used in industrial automation and control systems, mobile control communications and power equipments monitoring communications systems.

## PRODUCT DISPLAY:



## MODEL SPECIFICATION:



## APPLICATION AREAS:

- ◇ Stand alone wind/solar hybrid power station.
- ◇ Stand alone domestic household wind/solar hybrid power system.
- ◇ GSM base stations, expressway and other no-residential regions.
- ◇ Coastal islands, remote mountainous, border posts for regions shortage of or without electricity.
- ◇ Government demonstration projects, landscape lighting project, street light project etc.

## WARM PROMPTS:

Customers, who will order the wind/solar hybrid street light controllers, need to provide the following information

- ◇ Rated battery voltage
- ◇ Rated DC load power
- ◇ Rated solar power
- ◇ Rated wind turbine power
- ◇ Whether the wind turbine is three phase AC output, single phase DC output or single phase AC output.

# TECHNICAL PARAMETERS:

Model	WWS04A-12
Rated Battery Voltage	12V
Rated Wind Turbine Power	400W
Wind Turbine Maximum Input Current	50A
Wind Turbine Maximum Input Power	600W
Unload Voltage ( factory default )	14V
Unload Current (factory default)	25A
Rated Solar Power	150W
Battery Over Discharge Voltage Shutoff	11V
Battery Over Discharge Recovery	12V
Output Protection Voltage	16V
PV Voltage Of Light-Control On	Adjustable (1V)
PV Voltage Of Light-Control Off	Adjustable (1.5V)
Load 1 Rated Output Current	10A
Load 2 Rated Output Current	10A
Load 1 Output Mode(Factory Default)	3 Modes Selection (Light-Control On and Light-Control Off)
Load 2 Output Mode(Factory Default)	3 Modes Selection (Light-Control On and Time-Control 5 hours)
Control Mode	PWM
Display Mode	LCD
Display Parameters	Wind Turbine Power, Wind Turbine Voltage, Wind Turbine Current, PV Voltage, PV Charge Current, PV Power, Battery Voltage, Over Voltage, Under Voltage, Over Load, Short Circuit, Night. Etc

Working Temperature & Humidity	-20~+55°C (Without Condensation)
Temperature Compensation (optional)	4mV/°C-35°C : ±1°C
Communication Mode (optional)	RS232、RS485、RJ45、GPRS. Etc
Quiescent Current	≤20mA
Protection Function	Solar reverse charge protection , Solar reverse connection protection, Battery over charge protection, Battery over discharge protection, Battery reverse connection protection, Lightning protection Wind turbine current limiting, Wind turbine automatic brake and manual brake.
Optional Function	Optional Function 1 : RS Communication and Matched Software . Install the matched software to computer and connect controller with Computer Via software. User can adjust parameters from software by themselves. User can know the state of whole system Via software. All data will be stocked into excel files from software.
	Optional Function 2: Low Voltage Charge Function. With this function Controller can start charging battery when wind turbine voltage is lower than battery bank voltage , For example ,Controller can start charging battery from 2V if runs in 12V battery bank
In order to serve our customers better. Our company can adjust parameters configuration according to customer's requirement.	

**Declare: The product has applied for patent protection, counterfeiting will be subject to legal sanctions. Our company reserves the right to change products .Design and specification are subject to change without prior notice.**