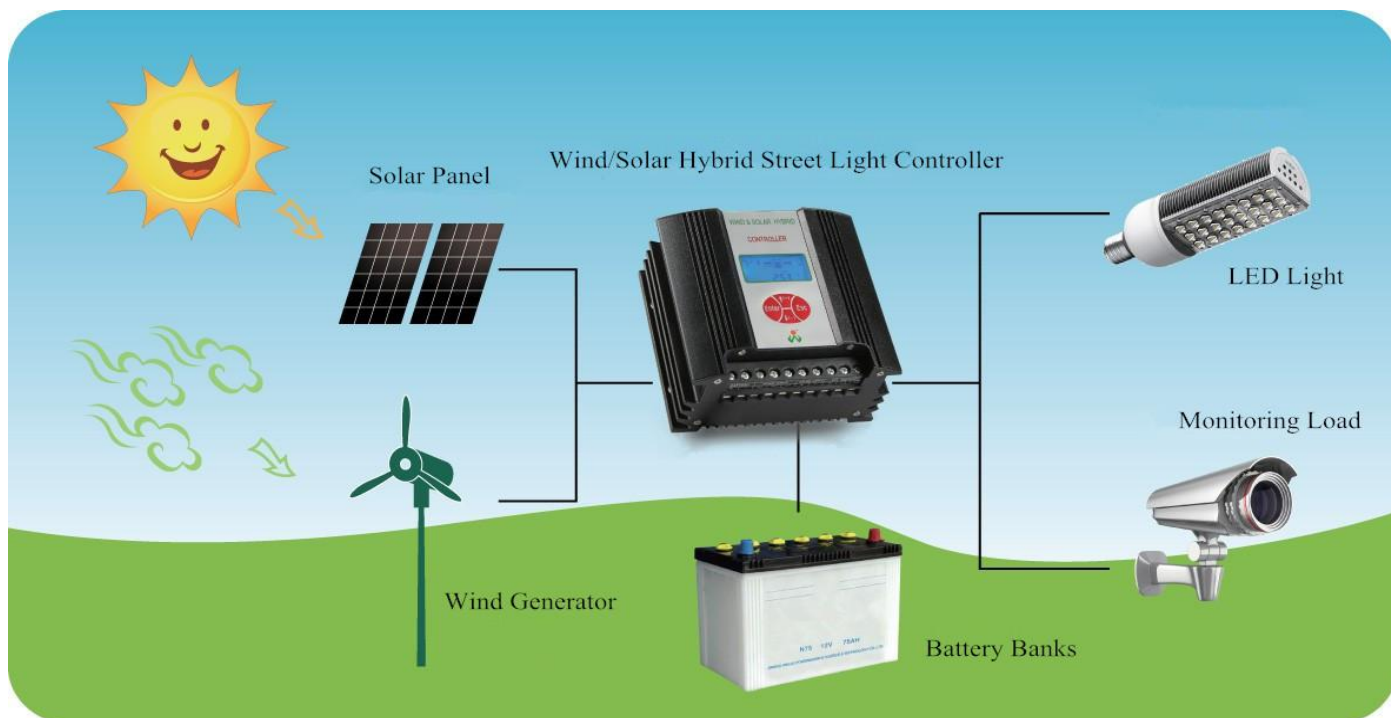


I. PRODUCT INTRODUCTION

The 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 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.

II. SYSTEM DRAWING



III. MODEL SPECIFICATION

Model Sample	<u>WWS</u> <u>06</u> - <u>24</u> - <u>N</u> <u>00</u> <u>D</u> 1 2 3 4 5 6					
Number	1	2	3	4	5	6
Model Specification	Refer to wind/solar hybrid controller	Part “2” refers to rated wind turbine voltage 02:wind turbine voltage 200W 03:wind turbine voltage 300W 04:wind turbine voltage 400W 06wind turbine voltage 600W	Part “3”refers to the battery voltage 12:battery voltage 12V 24:battery voltage 24V 48:battery voltage 48V	Part “4”refers to optional functions N: Advanced	Part “5” refers to Feature 00:Normal:01:RS232: 02:RS485:XX:other	DC Output D: DC Output

Wind Solar Hybrid Street Light Controller

	B: Economic L: Low Voltage Charge D: Buck Voltage Charge S: Micro Current Charge X: Other	04:Solar Dumpload Separately 10:Wind Turbine Single Phase DC 11:Wind Turbine Single Phase DC, RS232 12:Wind Turbine Single Phase DC, RS485	
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IV. PERFORMANCE FEATURES

- ✧ Superior military-grade components to ensure the product stability.
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- ✧ 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 selections.
- ✧ PWM stepless dumpload mode, which release 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.

V. APPLICATION AREAS

- ✧ Stand alone wind/solar hybrid power station.
- ✧ Stand alone domestic household wind/solar hybrid power system.
- ✧ Mobile Communication base stations, expressway and other non-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.

VI. PRODUCTS DISPLAY



VII. 12V TECHNICAL PARAMETERS

Product Model	WWS02-12-N00D	WWS03-12-N00D	WWS04-12-N00D
Rated battery voltage	12V	12V	12V
Rated wind turbine input voltage	200W	300W	400W
Maximum wind turbine input power	300W	450W	600W
Wind Turbine Brake Current	20A	30A	40A
Rated Solar Input Power	150W		
Dumpload Start Voltage	13.5V		
Complete discharge voltage	14.5V		
Battery Under Voltage Shutoff	10.8V		
Battery Under Voltage recovery	12V		
Input over voltage shutoff	16V		
Light Control On Voltage	1V		
Light Control Off Voltage	1.5V		
Rated Output Current of Load 1 and Load 2	10A		
Load 1 Output Control Mode	Light Control On and Light Control Off		
Load 2 Output Control Mode	Light Control On and Time Control 5 Hours Off		
Dumpload Control Mode	PWM		
Display Mode	LCD		
Cooling	Aluminium alloy shell radiating		
Protection Level	IP53 (Indoor)		
Quiescent Current	≤20 mA		
Display Content	Battery Voltage, Wind Turbine Voltage, PV Voltage, Wind Turbine Current, PV Current, Wind Turbine Power, PV Power, Over Voltage, Under Voltage, Over Load, Short Circuit, Night etc status		
Protection Functions	Solar reverse charge protection , Solar reverse connection protection, Battery over charge protection, Battery over discharge protection, Battery reverse connection protection, Over load protection, Short circuit protection, Lightning protection Wind turbine current limiting, Wind turbine automatic brake and manual brake.		
Ambient temperature	-20~+55℃		
Ambient Humidity	0~93%, without condensing		
Working Altitude	≤4000m		
Dimension	144×152×82mm		

Wind Solar Hybrid Street Light Controller

Net weight	1.9kg
Data for Micro Current Charge Function	
Wind Turbine Start Charge Voltage	6V
Dimension (L x W x H)	144×152×82mm
Net Weight	2kg
Data for Low Voltage Charge Function	
Wind Turbine Start Charge Voltage	2V
Input Admittance Value	10/15
Dimension (L x W x H)	223×152×82mm
Net Weight	2.8kg

VIII. 24V TECHNICAL PARAMETERS

Product Model	WWS03-24-N00D	WWS04-24-N00D	WWS06-24-N00D
Rated battery voltage	24V	24V	24V
Rated wind turbine input power	300W	400W	600W
Maximum wind turbine input power	450W	600W	900W
Rated solar input power	300W	300W	300W
Dumpload Start Voltage	27V	27V	27V
Charge Shutoff Voltage	29V	29V	29V
Wind Turbine Brake Current	15A	20A	30A
Battery Under Voltage Shutoff	21.6V		
Battery Under Voltage Recovery	24V		
Input Over Voltage Shutoff	32V		
Light Control On Voltage	2V		
Light Control Off Voltage	3V		
Rated Output Current of Load 1 and Load 2	10A		
Load 1 Output Control Mode	Light Control On and Light Control Off		
Load 2 Output Control Mode	Light Control On and Time Control 5 Hours Off		
Dumpload Control Mode	PWM		
Display Mode	LCD		
Protection Level	IP53 (Indoor)		
Quiescent Current	≤20mA		
Display Content	Battery Voltage, Wind Turbine Voltage, PV Voltage, Wind Turbine		

Wind Solar Hybrid Street Light Controller

	Current, PV Current, Wind Turbine Power, PV Power, Over Voltage, Under Voltage, Over Load, Short Circuit, Night etc status
Protection Functions	Solar reverse charge protection , Solar reverse connection protection, Battery over charge protection, Battery over discharge protection, Battery reverse connection protection, Over load protection, Short circuit protection, Lightning protection Wind turbine current limiting, Wind turbine automatic brake and manual brake.
Ambient Temperature	-20~+55℃
Ambient Humidity	0~93%, without condensing
Working Altitude	≤4000m
Dimension (L x W x H)	144×152×82mm
Net Weight	1.9kg
Data for Micro Current Charge Function	
Wind Turbine Start Charge Voltage	12V
Dimension (L x W x H)	142×150×82mm
Net Weight	2kg
Data for Low Voltage Charge Function	
Wind Turbine Start Charge Voltage	4V
Input Admittance Value	10/30
Dimension (L x W x H)	223×152×82mm
Net Weight	2.8kg

IX. 48V TECHNICAL PARAMETERS

Product Model	WWS06-48-N00D
Rated battery voltage	48V
Rated wind turbine input power	600W
Maximum wind turbine input power	900W
Rated solar input power	300W
Charge Shutoff Voltage	58V
Charge Recovery Voltage	52.8V
Wind Turbine Brake Current	15A
Battery Under Voltage Shutoff	43.2V
Battery Under Voltage Recovery	48V
Input Over Voltage Shutoff	64V

Wind Solar Hybrid Street Light Controller

Light Control On Voltage	4V
Light Control Off Voltage	6V
Rated Output Current of Load 1 and Load 2	10A
Load 1 Output Control Mode	Light Control On and Light Control Off
Load 2 Output Control Mode	Light Control On and Time Control 5 Hours Off
Display mode	LCD
Protection Level	IP53 (Indoor)
Quiescent Current	≤20mA
Display Content	Battery Voltage, Wind Turbine Voltage, PV Voltage, Wind Turbine Current, PV Current, Wind Turbine Power, PV Power, Over Voltage, Under Voltage, Over Load, Short Circuit, Night etc status
Protection Functions	Solar reverse charge protection , Solar reverse connection protection, Battery over charge protection, Battery over discharge protection, Battery reverse connection protection, Over load protection, Short circuit protection, Lightning protection Wind turbine current limiting, Wind turbine automatic brake and manual brake.
Ambient temperature	-20~+55℃
Ambient Humidity	0~93%, without condensing
Working Altitude	≤4000m
Dimension (L x W x H)	205×150×82mm
Net Weight	2.2kg
Data for Micro Current Charge Function	
Wind Turbine Start Charge Voltage	24V
Dimension (L x W x H)	205×152×82mm
Net Weight	2.3kg
Data for Low Voltage Charge Function	
Wind Turbine Start Charge Voltage	8V
Input Admittance Value	5/60
Dimension (L x W x H)	223×152×82mm
Net Weight	3kg

X. APPENDIX

Optional Function		
➤ RS232 communication function	➤ RS485 communication function	➤ Bluetooth function

Wind Solar Hybrid Street Light Controller

➤ Temperature compensation function	➤ By-pass function	➤ SD card function
➤ GPRS communication function	➤ Wind speed detection function	➤ Wind turbine rotate speed detection function
➤ Wind turbine low voltage charge function	➤ Wind turbine MPPT charging function	➤ Wind turbine low voltage charge function
Optional Accessories		
➤ Ethernet Module	➤ GPRS	➤ SD card storage module
➤ RS485-USB Converter	➤ RS485-RS232 Converter	➤ RS232-USB Converter
Friendly reminder: Customers, who will order the wind/solar hybrid street light controller, need to provide the following information		
➤ Rated battery voltage	➤ Rated wind turbine power and rated solar power	➤ The wind turbine is three phase or single phase
Qualifications		
➤ Utility model patent of anti-strong-wind, stepless unload wind power controller		
➤ Utility model patent of wind power boost charge circuit.		
➤ Utility model patent of SD card document storage		
➤ Utility model patent for integration of rectification and unload in wind power main circuit board.		
➤ Test Report of the ministry of information industry of posts and telecommunications industrial products quality supervision and inspection center		
➤ European CE certification.		