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.

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 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.

CERTIFICATIONS:

- ✧ Small and medium-sized S&T enterprise technology innovation fund project approval
- ✧ Anhui province high and new technology product certification
- ✧ Utility patent of strong wind resistance, stepless dumpload wind power controller
- ✧ Utility patent of wind power boost charge circuit
- ✧ Utility model patent for integration of rectification and dumpload of wind power main circuit board
- ✧ "Industrial Products Quality Supervision and Inspection Center Test Report" from Posts and Telecommunications Ministry of Information Industry.
- ✧ European CE certification.
- ✧ Software product registration certification
- ✧ Appearance design patent certification

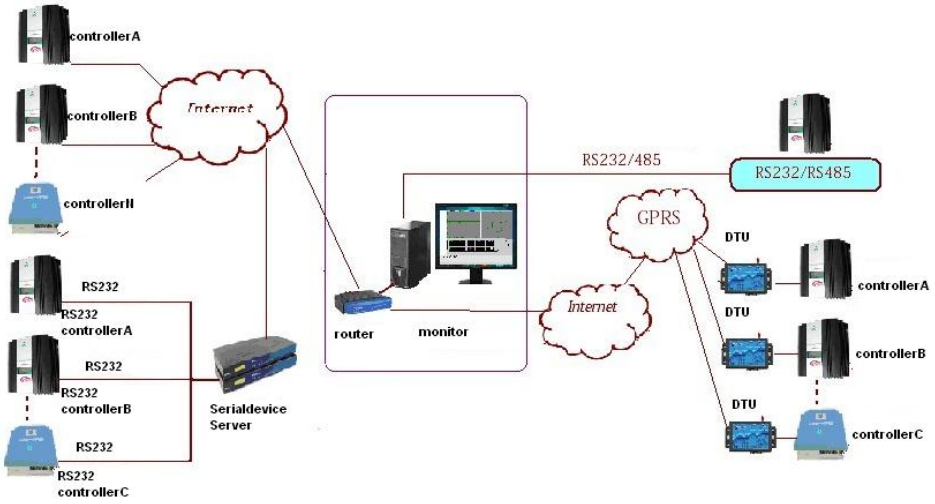
OPTIONAL FUNCTIONS:

- ✧ **Temperature compensation function**: the controller can automatic adjust dumpload start voltage according to different external environment temperature, which ensures battery charge efficiently.
- ✧ **Wind turbine low voltage charge function**: the controller can charge battery when wind turbine is in low rotate speed status, which can make full use of low wind power.
- ✧ **RS communication function**: RS232/RS485/RJ45/GPRS are optional communication ports.
- ✧ **By-pass function**: the controller will intelligently switch to the city grid for driving load when the battery is under voltage, which ensures the continuity and stability of the whole system.

- ✧ **SD card function**: with SD card, controller can store system history data when it is disconnected with PC.
- ✧ **Wind speed detection function**: the controller can detect real-time wind speed; the real-time wind speed value will be displayed via monitoring software.
- ✧ **Wind turbine rotate speed detection function**: the controller can detect real-time wind turbine rotate, the real-time wind turbine rotate speed value will be displayed via monitoring software.
- ✧ **Wind turbine micro current charge function**: when the wind turbine input DC voltage reaches to the pre-set value, the controller will produce small current charge battery.

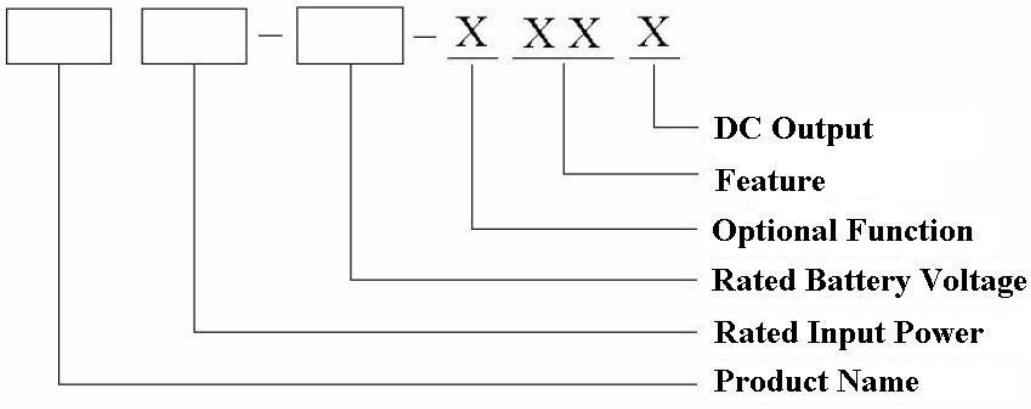
OPTIONAL ACCESSORIES:

- ✧ Ethernet communication module
- ✧ GPRS communication module
- ✧ SD storage card
- ✧ RS485-USB converter
- ✧ RS485-RS232 converter
- ✧ RS232-USB converter



PRODUCT DISPLAY:

MODEL SPECIFICATION:



Product Name		Rated Input Power		Rated Battery Voltage		Optional Function		Feature		DC Output	
WW	Wind controller	**02**	200W	**12**	12V	**N**	Normal	**00**	Normal	D	DC Output
WS	Solar controller	**03**	300W	**24**	24V	**L**	Low Voltage Charge	**01**	RS232		
WWS	Wind solar hybrid controller	**04**	400W	**36**	36V	**D**	Buck Voltage Charge	**02**	RS485		
		06	600W	**48**	48V	**B**	Economic	**03**	By-pass		
						S	Micro Current Charge	**04**	Solar Dumpload Separately		
						X	Complementing Bits	**10**	Wind Turbine Single Phase DC		
								11	Wind Turbine Single Phase DC，RS232		
								12	Wind Turbine Single Phase DC，RS485		
								XX	Other		

APPLICATION AREAS:

- ✧ Stand alone wind/solar hybrid power station.
- ✧ Stand alone domestic household wind/solar hybrid power system.
- ✧ GSM 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.

HELPFUL HINTS:

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

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

TECHNICAL PARAMETERS:

Product Model	**WWS02-12-N00**	**WWS03-12-N00**	**WWS04-12-N00**
Rated Battery Voltage	12V	12V	12V
Rated Wind Turbine Input Power	200W	300W	400W
Maximum Wind Turbine Input Power	300W	450W	600W
Wind Turbine Brake Current	17A	25A	34A
Rated Solar Input Power	150W		
Dumpload Start Voltage	13.5V		
Charge Shutoff 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	10A		

Rated Output Current of 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
Quiescent Current	≤20 mA
Ambient Temperature & Humidity Range	-20~+55℃/35~85%RH（Without Condensation）
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 Function	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.
By-pass function (Optional)	Auto Switch
Temperature Compensation Function (Optional)	-4mV/℃/2V ， －35℃--+80℃ ， Precison：±1℃
Communication Mode (Optional)	RS232、RS485、RJ45、GPRS (Optional)
Dimension (L x W x H)	142×150×82mm
Net Weight	1.9kg
Data for Low Voltage Charge Function	
Wind Turbine Start Charge Voltage	2V
Input Admittance Value	10/15S
Dimension (L x W x H)	220×150×8 2mm
Net Weight	2.8kg

In order to serve our customers better. Our company can adjust parameters configuration according to customer's requirement.

TECHNICAL PARAMETERS:

Product Model	**WWS03-24-N00**	**WWS04-24-N00**	**WWS06-24-N00**
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	13A	17A	25A
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	10A		
Rated Output Current of 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		
Quiescent Current	≤20mA		
Ambient Temperature & Humidity Range	-20~+55℃/35~85%RH（Without Condensation）		
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 Function	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.		
Communication Mode (Optional)	RS232、RS485、RJ45、GPRS (Optional)		

Temperature Compensation Function (Optional)	-4mV/℃/2V ， －35℃--+80℃ ， Precison：±1℃
By-pass function (Optional)	Auto Switch
Dimension (L x W x H)	142×150×82mm
Weight	1.9kg
Data for Low Voltage Charge Function	
Wind Turbine Start Charge Voltage	4V
Input Admittance Value	10/30S
Dimension (L x W x H)	220×150×82mm
Net Weight	2.8kg
In order to serve our customers better. Our company can adjust parameters configuration according to customer's requirement.	

TECHNICAL PARAMETERS:

Product Model	**WWS06-48-N00**
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	13A
Battery Under Voltage Shutoff	43.2V
Battery Under Voltage Recovery	48V
Input Over Voltage Shutoff	64V
Light Control On Voltage	4V
Light Control Off Voltage	6V
Rated Output Current of Load 1	10A
Rated Output Current of 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	LCD
Quiescent Current	≤20mA
Ambient Temperature & Humidity Range	-20～+55℃/35～85%RH （Without Condensation）
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 Function	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.
Communication Mode (Optional)	RS232、RS485、RJ45、GPRS optional
Temperature Compensation Function (Optional)	-4mV/℃/2V ， －35℃--+80℃ ， Precison：±1℃
By-pass function (Optional)	Auto Switch
Dimension (L x W x H)	205×150×82mm
Net Weight	2.2kg
Data for Low Voltage Charge Function	
Wind Turbine Start Charge Voltage	8V
Input Admittance Value	5/60S
Dimension (L x W x H)	220×150×82mm
Net Weight	3kg
In order to serve our customers better. Our company can adjust parameters configuration according to customer's requirement.	

Declare: Our company reserves the right to change products. Design and specification are subject to change without prior notice.