Functional specification for super-intelligent wind and solar hybrid controller (systematic type)

One. Comprehensive overview

Our new Super-intelligent wind/solar hybrid controller line is here. This new generation of high performance and control is the best on the market for your renewable green energy application. It contains years of our tested application experience (such as waterproof "including salt spray", dustproof, wiring error like reverse polarity. Some of the other features are wind resistance loading limit control, energy management this controller can provide you with ultimate control and real time data you desire. Great controller for battery charging using solar and wind together. Applications like street light control are another feature the controller adopts to very well by giving the user menu items pre designated like street light or load on/off times and it has a convenient menu for rapid customization. One of the other noteworthy features is the Patented wind turbine limit protection system this protects the wind turbine and controller from rapid loading caused by extreme wind speeds. It also has the ability to apply loads slowly to slow or stop the wind turbine. If for any reason the battery fails during initial startup or repair of the wind turbine the system will apply the brake. Manual brake is possible via menu on 600 watt and physical switch brake on 1000 watt.

This controller also can show wind speed from an optional anemometer the anemometer requires the rs485 port so please preorder this if you intend to use this function.

Patented wind turbine designs:

1. Appearance - industrial grade exterior design, elegant appearance, great texture
2. Visual graphical user interface, easy to operate and identify
3. Reliable waterproof performance (circuit board, three proof treatment, layered structure design), even if the water (small amount), it will not damage the equipment
4. Standard configuration RS232 communication, it is easy to do the monitoring with the computer software. (RS485, short-range wireless optional) using a USB to RS232 members, more convenient to exchange data with a computer (computer with USB interface can be used); configure parameters do not need to connect battery, convenient for metering and configuration.
5. The wiring terminal adopts the injection molding technology, and the connection short circuit and the touch line phenomenon can not happen, so that the customer can operate more safely
6. The accumulator input end is continuously connected and will not be damaged, and buzzer alarm is also provided to avoid the damage of the equipment and the fire because of the wiring mistake, and the battery can be better protected
7. The input end of the photovoltaic panel is continuously connected and will not be damaged, and there is a buzzer warning. When the construction is in progress at night, no wiring errors will occur
8. The output end of the discharge has continuous short circuit output protection, over-current protection, after the exception of its own recovery, to avoid the use of electrical equipment failure (especially short circuit), causing damage to the controller, or cause fire.

9. For light / time control method using a client (such as street lamp) can configure the external optical probe, instead of photovoltaic panels to do photosensitive detection. The benefits are, photovoltaic panels can be installed in the underground lamp, if the installation position is not high, regular cleaning can improve the efficiency of power generation photovoltaic panels (optional).

10. Provide MPPT function (boost / Wind turbines, Buck / photovoltaic), so that the Wind turbines can charge the battery at low wind speeds, improving the utilization of wind energy. (Optional)

11. Patent type fan limit protection components. The blower in extreme wind speeds, or work in the battery off, to provide protection for fan and controller installed wind blower first etc. (optional)

12. The speed control of patent type fan method, can make the super speed fan is not good, in the wind, the fan can keep steady speed power generation, wind power capacity is greatly improved. Not by conventional methods such overspeed, direct brake, stop the wind turbine operation.

13. The speed control of patent type fan method, can make the super speed fan is not good, in the wind, the fan can keep steady speed power generation, wind power capacity is greatly improved. Not by conventional methods such overspeed, direct brake, stop the wind turbine operation.

14. The open parameter setting mode for battery overcharge and over put etc, makes the controller be suitable for use by various types of battery (such as lead-acid batteries, lithium batteries)

15. At present, LED is used as a light source lamp, can provide up to 120W output with energy management LED driver (built into the controller, through energy management, can provide reasonable fine for 15 days without light rain world, not light effect. On the one hand can reduce the cost of the system (photovoltaic panels, battery can reduce at least 20%) increase project profit, on the other hand, because of the constant current source is integrated in the controller, no electronic components in the lamp, greatly reduce the maintenance cost (not to do maintenance, then climbing tool used directly in the ground operation) (optional)

16. The controller provides a variety of output modes for selection (ordinary lamp output, led output, continuous output, and light on in the morning mode output) easy for a variety of applications.

17. Ultra-low static standby current, ensures the small power consumption, to avoid the large loss of battery energy, especially in the long-term rainy days, it will not deficit the battery.

18. Lightning protection components, which can basically put an end to the damage of induced lightning, to further improve the reliability of the equipment.

19. Open software platform (computer software), customers can customize their own applications.
(through the software or controller panel) quickly and simply, and support centralized monitoring functions, connect all equipments through 485 bus. Communication distance reaches 2KM.

20. The controller screen has a conventional fan, photovoltaic, battery, current, output voltage, power display, and fan, the cumulative generating capacity of PV and battery residual capacity display, display, fan speed, unloading current display controller. Temperature display.

21. Original controller terminals up alarm function, when the controller terminals facing up, alarm, require customers to use with the correct mounting direction, to avoid the possibility that use in the open air or bad weather, condensation on the wire surface, rain goes inside the controller, and then damage the controller.

22. The temperature monitoring function is integrated inside the controller, the temperature of the equipment is monitored at all times, so that the controller can work more safely and extend the service life of the equipment.

Product appearance:

Product size:

Ordinary type (L x W x H)
175mm *148mm *84mm

Lengthened type (L x W x H)
235mm*148mm *84mm
Product Model Description

MAX-Tx-WSz-0y-uuuu-t

1-- with TTL232 communication
2-- with 485 communication
3-- with wireless communication (short-range)

N-- No Wind turbines limit components
H-- Have Wind turbines limit components

N-- No Wind turbines MPPT components
H-- Have Wind turbines MPPT components

N-- No solar MPPT components
H-- Have solar MPPT components

N-- No LED constant driver
H-- Have LED constant driver

Yy=03----300W Wind turbines
Yy=06----600W Wind turbines
Yy=10----1000W Wind turbines

W-- Include Wind turbines input
S-- Include solar input
Z=none -- without output management
Z=I -- have 1 output
Z=II -- have 2 outputs

T -- New senior controller
X=1 -- 12V grade
X=2 -- 24V grade
X=4 -- 48V grade
X=A -- identify voltage automatically

Company code

Two. Product Parameter List

Super-intelligent wind/solar hybrid controller master device parameter list

<table>
<thead>
<tr>
<th>Battery parameter</th>
<th>MAX-Tx-WSz-0y-uuuu-t</th>
</tr>
</thead>
<tbody>
<tr>
<td>rated battery voltage</td>
<td>12V / 24V self adaptation 48V manually set</td>
</tr>
<tr>
<td>Battery protect method</td>
<td>reverse connection protection (do not burn any components, with voice prompt); over voltage protection, under voltage protection (for street light and such load)</td>
</tr>
<tr>
<td>battery temperature compensation</td>
<td>5mv/°C/2V (settable) (optional component)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Wind turbines input parameter</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated wind turbines power</td>
<td>300W/12V grade 600W/24V grade</td>
</tr>
<tr>
<td>Rated wind turbines input current</td>
<td>25A dc(DC after rectification; AC input of corresponding Wind turbines is ~20Aac)</td>
</tr>
<tr>
<td>Wind Turbines Max. Input Current</td>
<td>35 A dc (after rectification; AC input of corresponding Wind Turbines is ~28Aac) (working time &lt;=1 hour)</td>
</tr>
<tr>
<td>Wind Turbines Max. Rev Limit</td>
<td>500 Rpm (settable)</td>
</tr>
<tr>
<td>Wind Turbines Input Max. Current Limit</td>
<td>20A (settable)</td>
</tr>
<tr>
<td>Wind Turbines Protection Method</td>
<td>No-load input protection, overpressure protection (voice prompt), over rev protection, over current protection, induction lighting protection</td>
</tr>
<tr>
<td>Unloading Method</td>
<td>PWM stepless high-frequency soft unloading (without external resistor), with external resistor is also acceptable.</td>
</tr>
<tr>
<td>MPPT Function</td>
<td>Boost MPPT (optional)</td>
</tr>
</tbody>
</table>

**PV Input Parameter**

| Rated PV Input Current | 15A-40A |
| Rated PV Input Voltage | <=0.15V |
| PV Protection Methods | Reverse connection protection (voice prompt), over current protection, induction lighting protection |
| Unloading Method | Open circuit unloading |
| MPPT Function | Buck MPPT function (optional) |

**Others**

| Auxiliary Function | Temperature display (over temperature alarming), controller upside down display (terminal faces up, voice prompt) |
| Display Mode | Liquid crystal display (special) or software display |
| Communication Mode | TTL232 / RS485/USB interface / short range wireless (optional) |
| Displayed Contents (for reference, specific parameters may change according to actual device) | Wind Turbines input voltage, current, power, generated energy, rev, unloading current and abnormal information |
| | PV input voltage, current, power, generated energy and abnormal information |
| | Battery voltage, charging current, power, total charging capacity and battery status information |
| | LED driver output voltage, current, power and abnormal information |
| | 2 conventional output port output current, power and abnormal information |

| Power Consumption in Standby Mode (Screen Backlight Closed) | Approx. 20mA /12V system |
| | Approx. 18mA /24V system |
| | Changed according to different components. The total current of all components when install < 30mA |

| Operating Mode | 3M foil key operation (4 keys) |
| Working Temperature / Humidity Range (Environment) | -40~+65°C / 20~85%RH (non condensing) |
| Protection Grade | IP41 |
| Controller Size (L*W*H) | 175mm*148mm *84mm (regular model) |
| | 235mm*148mm *84mm (high power model) |
| Weight | 1.8KG (regular model) / 2.5KG (high power model) |

In order to better serve customers, our company can adjust and configure parameters according to customers' requirements.
Super-intelligent wind/solar controller optional parameter list

<table>
<thead>
<tr>
<th>Conventional output components (built-in)</th>
<th>Used in street lights control, conventional loading, inverters connection etc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>output numbers</td>
<td>2 outputs (individual control)</td>
</tr>
<tr>
<td>Rated output current</td>
<td>14A (each)</td>
</tr>
<tr>
<td>Protection method</td>
<td>Over current protection, short circuit protection (after protection, voice prompt, abnormality can be recovered)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Wind turbines MPPT component (boost type) (built-in)</th>
<th>Used to charging under low voltage and low wind speed, and improve Wind turbines generating efficiency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suitable battery voltage grade</td>
<td>12V/24V/48V</td>
</tr>
<tr>
<td>Max. input current</td>
<td>5A-25A</td>
</tr>
<tr>
<td>MPPT starting input voltage point</td>
<td>12V (factory value) parameter can be set</td>
</tr>
<tr>
<td>MPPT closing input voltage point</td>
<td>6V (factory value) parameter can be set</td>
</tr>
<tr>
<td>Working efficiency</td>
<td>&gt;90%</td>
</tr>
<tr>
<td>Working mode</td>
<td>PWM dynamic variable resistance matching tracking mode</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LED constant current driver component parameter (built-in)</th>
<th>Mainly used for controlling of electrodeless lamp and LED street lights, combine with energy management, extending the service time to more than 10 days.</th>
</tr>
</thead>
<tbody>
<tr>
<td>LED driver max. output power</td>
<td>65W/12V system, 120W/24V system</td>
</tr>
<tr>
<td>LED series number</td>
<td>1-14</td>
</tr>
<tr>
<td>LED driver output mode</td>
<td>Voltage / current / power (optional)</td>
</tr>
<tr>
<td>Driver output protection method</td>
<td>Open circuit, short circuit, over loading, reverse connection, lightening</td>
</tr>
<tr>
<td>Driver output voltage</td>
<td>0V-50V, max. &lt;58V</td>
</tr>
<tr>
<td>Driver output current</td>
<td>0-3A</td>
</tr>
<tr>
<td>Output management</td>
<td>Adjust power mode, high efficient energy manage (extend to a maximum service time in rainy days)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Short-range wireless communication component (external)</th>
<th>Used to monitoring the wireless parameter setting, know the controller working condition without opening the box.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Working frequency</td>
<td>315MHZ or 433MHZ</td>
</tr>
<tr>
<td>effective communication range</td>
<td>10 meters</td>
</tr>
<tr>
<td>Working carrier</td>
<td>electromagnetic wave</td>
</tr>
<tr>
<td>Modulation system</td>
<td>FSK</td>
</tr>
</tbody>
</table>

Customers should choose the above components according to actual situation.

Three. External wiring output port

Model: MAX-Tx-WSz-0y-Nuuu-t  Port definition, mainly used for charging control

Model: MAX-Tx-WSz-0y-Huuu-t  Port definition, mainly used for street lights
control

<table>
<thead>
<tr>
<th>BAT INPUT</th>
<th>SOLAR INPUT</th>
<th>WIND INPUT</th>
<th>NORMAL OUT</th>
<th>LED OUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>☑</td>
<td>☑</td>
<td>☐</td>
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<td>☑</td>
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</tbody>
</table>

[SOLAR INPUT]------Solar voltage input port, input voltage < 60VDC, input current < 15A

[BAT INPUT]------Battery input port, battery voltage 12V/24V/48V grade (pay attention to the polarity)

[WIND INPUT]------Wind turbines AC input port, non-polarity input.

[VO+ O1]--------Normal output port VO+ connects unloading positive, O1 connects unloading negative

[VO+ O2]--------Normal output port VO+ connects unloading positive, O2 connects unloading negative

[NORMAL OUT]------Normal output port

[LED OUT]--------LED driver output port, mainly connects LED lights (no constant current source inside LED lights)

NOTE: suggest doing wiring according to below order

For Model: MAX-Tx-WSz-0y

Battery—solar panel—Wind turbines—output loading

For Model: MAX-Lx-WSz-0y

Battery—output loading—solar panel—Wind turbines

The wrong order may cause abnormality of controller (the optional components which with Wind turbines limit protection could not follow the order)

Connecting as below shows
Model: MAX-Tx-WS-0y-Nuuu-t

<table>
<thead>
<tr>
<th>BAT INPUT</th>
<th>SOLAR INPUT</th>
<th>WIND INPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Model: MAX-Tx-WSz-0y-Nuuu-t

<table>
<thead>
<tr>
<th>BAT INPUT</th>
<th>SOLAR INPUT</th>
<th>WIND INPUT</th>
<th>01</th>
<th>02</th>
</tr>
</thead>
<tbody>
<tr>
<td>+</td>
<td>+</td>
<td>+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- [Diagram of battery and solar panel connections]
- [Diagram of wind turbine connections]
Model: MAX-Tx-WSz-0y-Huuu-t

1. Watch Screen

WATCH mode PV working condition: V, A, W, KwH
WATCH mode wind working condition: V, A, W, KwH

WATCH mode battery working condition: V, A, W, KwH
WATCH mode output 1 working condition: A, W, discharging time

WATCH mode output 2 working condition: A, W, discharging time

WATCH mode temperature

WATCH mode REV: wind turbine rotation speed per min: RPM
2. Setting Screen

Password: 0000 into setting

1.1 Add: If there are multiple communication methods from controller to laptop, for example, RS232, RS485, GSM, add numbers of communication methods, add digital number. Default 6.

2.2 OEY: Password setup for getting into controller setting, Default 000

2.3 SYS: 12/24/48V system auto recognition, Default: 003

000: system works at 24V
001: system works at 12V
002: system works at 48V
003: system auto recognition
2.4 T10+T1F: output 1 discharging time

[T1O]=0  [T1F]=0  range 0-16 hours
Output 1 begin to discharge when night time begins, but stop discharging at dawn.

[T1O]>0  [T1F]=0  range 0-16 hours
Output 1 will discharge at the set hours T10 (for example, 8hours). After discharge power at 8hours, output 1 will stop discharging. When dawn arrive also stop discharging.

[T1O]=0  [T1F]>0  range 0-16 hours
Output 1 continuously discharging power at the set hour no matter day time or night time.

[T1O]>0  [T1F]>0  range 0-16 hours
Output 1 will discharge when night time comes, lasting discharging time will last to the set [T10] hour and then turn off. Output 1 will wait to turn on and discharge again until to the [T1F] set time, discharging will be stop at dawn again.

2.5 T20+T2F: output 2 discharging time

[T2O]=0  [T2F]=0  range 0-16 hours
Output 2 begin to discharge when night time begins, but stop discharging at dawn.

[T2O]>0  [T2F]=0  range 0-16 hours
Output 2 will discharge at the set hours T20 (for example, 8hours). After discharge power at 8hours, output 2 will stop discharging. When dawn arrive also stop discharging.

[T2O]=0  [T2F]>0  range 0-16 hours
Output 2 continuously discharging power at the set hour no matter day time or night time.

\[ \text{T2O}>0 \quad \text{T2F}>0 \quad \text{range 0-16 hours} \]

Output 2 will discharge when night time comes, lasting discharging time will last to the set [T2O] hour and then turn off. Output 1 will wait to turn on and discharge again until to the [T2F] set time, discharging will be stop at dawn again.

2.6 NDS: Pole pairs of wind turbine: Default 6

2.7 NUT: Wind turbine braking time setting: Default 5 mins

2.8 BEN: Buzzing enable setting: 001 enable buzzer alarm:

1. A key input
2. The battery reversed
3. Photovoltaic panels reversed
4. The Wind turbines input limit protection
5. The temperature is too high
6. The first group of output short circuit, over current
8. The second set of output short circuit, over current
10. LED drive output over-current, short circuit, etc.
11. The controller terminals upward

2.9 NBI: Limited the max. charging current (default 5Amp) when boost is functioning

2.10 CLU: Boost function stop at the set volt. Default: 8V

2.11 SRU: Boost function start at the set volt. Default: 12V
2.12 NNI: Wind turbine max. charging current. Default: 18A. Then the wind turbine charging current reach at 18A or higher, the wind turbine will break.

2.13 NNS: Wind turbine max. RMP, default 500RMP. If the wind turbine RPM reach more than the set 500RPM, the controller will function the dumping.

Five. Special operations of controller

1. In standby mode (controller digital part displays "RUN" and flashing), long press the [ESC] button for 3 seconds, the Wind turbines enter manual brake immediately, and the Wind turbines graphic symbol will display a box, framed Wind turbines, which represents brake. If now you press [ESC] for 3 seconds, the braking action will be released slowly, and the Wind turbines generates again.

2. Press up and down simultaneously for 3 seconds, LCD digital part displays "RST", the controller is reset immediately, reinitialize working. The effect is the same as re-power-off and then re-energized. Recommended setting all the parameters, or encounter problems, perform this operation, reset controller.

Six. Abnormal information display

During operation of controller, if the output of LED driver, the first or the second group has protection fault such as short circuit, over current and etc., it will automatically prompt the abnormal information (graphics, or code hints), the output will be temporary closed until after dawn, The abnormal information automatically cleared.

Abnormal information for LED driver
E01 E02 E03 E04 E05 E06 E07 E08 E09 E10 E11
E01 ----- System output fast over current protection
E02 ----- System output intermediate over current protection
E03 ----- System output slow over current protection
E04-----System output over-voltage protection (open)
E05------ Driver output short circuit
E06------ System output fast over power protection
E07-----System output intermediate over power protection
E08-----System output slow over power protection
E09------ User set output limit fast protection
E10------User set output limit intermediate protection
E11------User set output limit slow Protection

If abnormal failure occurs at the ordinary output of first and second group, it will display the following graphic:

Abnormal failure occurs, it can be removed manually, and method of operation is: enter the menu, then exit, and the failure is clear (i.e., press "OK" once, and then press the "ESC" once,)

The audible alarm indicates that the status of the controller or abnormal information occurs, specific refer to [BEN] parameter description content.

**Special Note: All menu operation is in progress, you must return to the standby interface, otherwise the controller will temporarily stop the LED driver output, that is, enter the menu, internal LED driver has no output(if the drive is outputting before entering, it will close too).**
Seven. Usage of monitoring software (optional function)

In addition to the use of LCD controller to monitor the parameters and parameter settings, the computer monitoring software can also use our offer to set or view data. Using the monitoring software, can provide more and more comprehensive control measures.

And computer communication methods include TTL232 (standard), 485 (optional), short-range wireless communication (optional, external module), etc., according to the actual application of matching

The following description uses the standard interface (TTL232 interface) for the use of the process

The controller is connected to the computer via a USB to 232 communication cable

Before you are ready to use the computer to debug the monitor, you need to meet the following conditions:

1. controller is connected to a power supply (12V, or 24V)

2. USB cable has to install the driver ("DRIVE" folder)

3. the monitoring software must be installed (Wind and Solar Hybrid Controller (super).Exe)
A. Install the USB driver
In order to use installation drivers, it is recommended to use windows7 systems or more.

Computer connects to the controller, debug

A. First, according to the right picture, connect controller with the communication cable

B. Then connect the power supply (12V or 24V) to the corresponding battery input of the controller

C. USB end is connected to the computer; the other end is inserted into the controller

Till now, connection of computer and controller hardware is completed

B. Using of monitoring software

Open the monitoring software, displays below interface

If you need to display Chinese, click switch

Then click enter to the third page, shown as follows
Click the software will immediately search controller settings automatically, it will show the information such as

If you found. That means software has been connected to the controller, and all of the features of the software could be used.

Note: when do parameters writing operation to the controller, it is recommended to first read the parameters of the controller, and on this basis to modify, then write in.
Correspondence between the software on the parameters and the LCD screen as follows:

Photovoltaic panels are selected as light intensity sensing inputs.

An external light sensitive detector is selected as the light intensity sensing input.
This page is used to adjust the battery charging parameters, part of the LED street lamp management, fan MPPT management page, controller, the LCD screen has no such parameters, and must be set up by this computer software.

The left side of this page belongs to the internal parameters configuration page.

In general, non-professionals do not change, otherwise it may cause the controller does not work properly, may cause the battery overcharge, over discharge, damage to the battery. This is open to customers, mainly to familiar with customers can configure internal controller parameters more reasonable. To achieve a longer duration of use.

In general, non-professionals do not change, otherwise it may cause the controller does not work properly, may cause the battery overcharge, over discharge, damage to the battery. This is open to customers, mainly to familiar with customers can configure internal controller parameters more reasonable. To achieve a longer duration of use.
Battery voltage determining parameters:

1. Maximum limit voltage of battery. Default value 29.0V

   When the battery voltage exceeds this parameter voltage, the controller sends out prompt information, the controller automatically closes the input charging, and the automatic unloading program starts. For the battery with different capacity, the maximum voltage of this parameter can be adjusted properly. When the 24V system, this parameter is equal to the controller's internal parameters. 12V system, this parameter is equal to 2 times the controller's internal parameters.

2. Overvoltage recovery voltage of battery. Default value 27.5V

   After the overvoltage occurs, when the battery voltage is lower than the parameter voltage, the controller sends out prompt information inside the controller. The part automatically re enters the input charge, and the automatic unloading program is turned off. For the battery with different capacity, the maximum voltage of this parameter can be adjusted properly. When the 24V system, this parameter is equal to the controller's internal parameters. 12V system, this parameter is equal to 2 times the controller's internal parameters.

3. Battery undervoltage recovery voltage. Default value 23.0V

   After the undervoltage occurs, when the battery voltage exceeds this parameter voltage, the controller sends out prompt information, the drive is reset, the operation is enabled, and all functions are fully restored. For the battery with different capacity, the maximum voltage of this parameter can be adjusted properly. When the 24V system, this parameter is equal to the controller's internal parameters. 12V system, this parameter is equal to 2 times the controller's internal parameters.

4. Minimum voltage limit for battery. Default value 21.0V

   When the battery voltage exceeds this parameter voltage, the controller sends out the prompt information, the controller closes each kind of output. For the battery with different capacity, the maximum voltage of this parameter can be adjusted properly. When the 24V system, this parameter is equal to the controller's internal parameters. 12V system, this parameter is equal to 2 times the controller's internal parameters.
Wind turbines input MPPT control parameter configuration
(Set for Wind turbines MPPT components)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>MPPT Close V</td>
<td>6.0V</td>
</tr>
<tr>
<td>MPPT Start V</td>
<td>12.0V</td>
</tr>
</tbody>
</table>

MPPT Close Value:
MPPT Close Value: when the set wind generator input voltage reaches this setting value, close the MPPT function.
In practice, if the setting is too low, it will cause the fan to stall or even turn. In this case, the value is raised properly, so that the fan output voltage is high, then the power generation is started.

MPPT Start V:
When the input voltage of the wind generator is set to this setting value, the sequential maximum power point tracking operation is started and the maximum power output is maintained. This value must be greater than the MPPT, Close, and Value values.

After setting, click [write configuration] button, the setting information will be immediately written into the controller, when the operation is successful, it will prompt you successful operation.
The right side of this page is the configuration software and controller communications port, according to the actual use of COM port to select the configuration, in general, click the "AUTO" button, will automatically connect to the controller.

This page is used primarily to view real-time parameters and debug controllers, and to the left is to view real-time parameters; the right is to debug controllers and configure system information.

If use 485, or wireless communication connection, can manage multiple devices. It means that can do centralized monitoring; click the right button, the software automatically searches for connected devices, and list out. Click on the appropriate device, the information is displayed, or manipulate the setting of the corresponding devices.

The right side of the page is the controller test page. Used to freely output a data...
to the drive, judge the current output effect, as a reference of set parameters

(This part for the test of the LED drivers and lamp)

Using methods and steps

1. First select output mode

Voltage output mode, which allows not connect any load in testing. The controller output voltage is equal to the set voltage. **It is worth noting that, when the output voltage outputs from small to large, output voltage unloaded and on load, voltage is essentially the same; when unloaded, if the output voltage adjusted from small to large, the output of the driver may be different with the setting. When on load, the output does not have this problem. This is not a fault.**

Current / power mode, all belong to the current control scope, the output terminal must be connected to the load, otherwise, the voltage of the output terminal will be output to the highest voltage (<58V), **if connect load after output, it is possible to damage the load due to high voltage. So, it’s forbidden to connect load after output. (Under normal circumstances, the unload output, E-04 failure will be reported, and close the output)**

2. Temporarily set the maximum output range.

Select the maximum output setting according to the actual working scope of the load. If set too small, the output will be relatively small, set too large, may damage the load.

E.g.: 36W LED lamp (1W 1 tablets), if connect 12 in series, and then 3 groups in parallel, the working voltage is approximately 12 * 3.3V = 39.6V, total current 36W/39.6V = 0.91A

If choose the voltage mode, temporarily set the maximum voltage as 40V
If choose the current mode, temporarily set the maximum current as 0.91A.
If choose the power mode, temporarily set the maximum power as 36W.

3. Simulation output section to set the current actual output

Pull the scroll bar to select the current output value, it is recommended to set output from small to large in the case of not very sure.

Click the controller output as soon as required. The output results can be displayed in the right side of the interface which can see the result of feedback.

To close the output, click the Reset button. After reset, the controller back to normal working condition.

**Any write operation (except for the output button operation) shuts down the drive output. The read operation does not affect the normal operation of the controller.**

For controllers with only common switch outputs, you can use this button to open the output and turn off the output, click, output immediately, click, output closed.

The big button on the right is used for setting up parameters in the controller, or the operational problems that can use this button to restart the controller once, return to normal working condition. This process and re power effect is the same.

**Note:** The Manual may be subject to change according to the product. When using, please refer to the enclosed instruction. Without prior notice!