

## Off-Grid PWM Wind Solar Hybrid Controller

### Product Characteristics

- ◆The product is manufactured according the JB/T6939.1-2004 industrial standard and GB/T 19115.1-2003 national standard also with users' technical requirements.
- ◆The big screen LCD display clearly presents the working status of the wind turbine, solar panel, battery and controller. (Wind turbine voltage, current, power display ;solar voltage, current, power display, battery charging current, voltage, charging power, power display.)
- ◆Two sets of control systems: PWM constant voltage system and three-phase dump load system.
- ◆PWM constant voltage control is 120% of the rated power of the wind turbine. In case exceeding of PWM's capacity, the three-phase dump load will automatically start immediately to ensure safe running of the overall wind turbine system.
- ◆When the battery disconnects or fails, the three-phase dump load will start automatically to avoid the wind turbine idling and runaway accident.
- ◆When the strong or super-strong wind conditions PWM control to ensure battery charged by the wind turbine with constant voltage and current.
- ◆The protection function of battery: polarity reverse protection, disconnection and damage protection.
- ◆Over-charging protection of the battery: When the battery is full (the battery voltage getting 125% of the rated voltage), the controller will carry out three-phase dump load automatically to stop charging the battery.
- ◆Auto recharging of battery: When the battery voltage reduces to 108% of the rated voltage, it stops three-phase dump load to recharge battery automatically.
- ◆For the different wind turbine type, the controller can be equipped with mechanical yawing, furred empennage, mechanical or hydraulic, pneumatic, electric magnetic and other brake functions.
- ◆The inside of the controller is equipped with surge arrester. Contain the over voltage into the wind turbine under the bearable voltage of the equipment or system. On the other way, to conduct the strong lightening current into the earth directly to avoid any damage.

- ◆ The controller is equipped with manual three-phase dump load switch. To using this switch, the wind turbine will carry out three-phase dump load forcibly.
- ◆ Optional communication Mode: RS232, RS485, GPRS, USB, RJ45 etc Can monitor multiple devices running.



### Technical Parameters of the Off - Grid Wind Solar Controller

| Type                                     | 5KW-48Vdc  | 5KW-120Vdc<br>(avail upon request) | 5KW-240Vdc<br>(avail upon request) |
|--|--|------------------------------------|------------------------------------|
| Wind turbine rated power                 | 5KW  | 5KW                                | 5KW                                |
| Wind turbine max. power                  | 10KW   | 10KW                               | 10KW                               |
| Solar panel power                        | 1.5KW  | 1.5KW                              | 1.5KW                              |
| Battery                                  | 48Vdc  | 120Vdc                             | 240Vdc                             |
| Function                                 | Rectifier, charge, control   |                                    |                                    |
| Display mode                             | LCD  |                                    |                                    |
| Display content                          | Wind turbine voltage, wind turbine current, wind turbine power, solar panel voltage, solar panel current, solar panel power, battery voltage, charge current |                                    |                                    |
| PWM constant pressure voltage            | >58Vdc   | >145Vdc                            | >290 Vdc                           |
| 3-phase load voltage of the wind turbine | 60±1Vdc  | 150±2Vdc                           | 300±5Vdc                           |
| Wind turbine recovery charging voltage   | 54±1Vdc  | 135±2Vdc                           | 280±5Vdc                           |
| Solar controller stop charging voltage   | 60±1Vdc  | 150±2Vdc                           | 300±5Vdc                           |
| Solar restore charge voltage             | <54Vdc   | <145Vdc                            | <290Vdc                            |
| Low-voltage of the battery               | 40±1Vdc  | 100±2Vdc                           | 200±5Vdc                           |
| Self-provided connecting wire of the     | >20mm <sup>2</sup>   | >10mm <sup>2</sup>                 | >6mm <sup>2</sup>                  |

|                                      |   |             |             |
|--------------------------------------|---|-------------|-------------|
| battery                              |   |             |             |
| PWM fuse                             | 125A  | 63A         | 40A         |
| Solar fuse                           | 32A   | 16A         | 10A         |
| Charging fuse                        | 160A  | 63A         | 32A         |
| Work environment temperature         | -30-60°C                                    |             |             |
| Relative humidity                    | < 90% No condensation                       |             |             |
| Noise (1m)                           | < 40dB                                      |             |             |
| Degree of protection                 | IP20 (Indoor)                               |             |             |
| Cooling method                       | Forced air cooling                          |             |             |
| *Communication interface (optional)  | RS485/USB/GPRS/Ethernet                     |             |             |
| *Temperature compensation (optional) | -4mv/°C/2V, -35°C~+80°C,<br>Accuracy: ± 1°C |             |             |
| Size of the controller (mm)          | 560*400*245                                 | 480*360*240 | 480*360*240 |
| Weight of the controller             | 26Kg  | 21Kg        | 21Kg        |
| Size of the dump load (mm)           | 660 x 510 x 450                             |             |             |
| Weight of the dump load              | 31Kg  | 31Kg        | 31Kg        |

\*Above parameters are only for reference

1. Parameters could be customized to user specifications.
2. Could have solar power control subject to user demand.
3. Size of the controller by blue meaning wall hanging case.