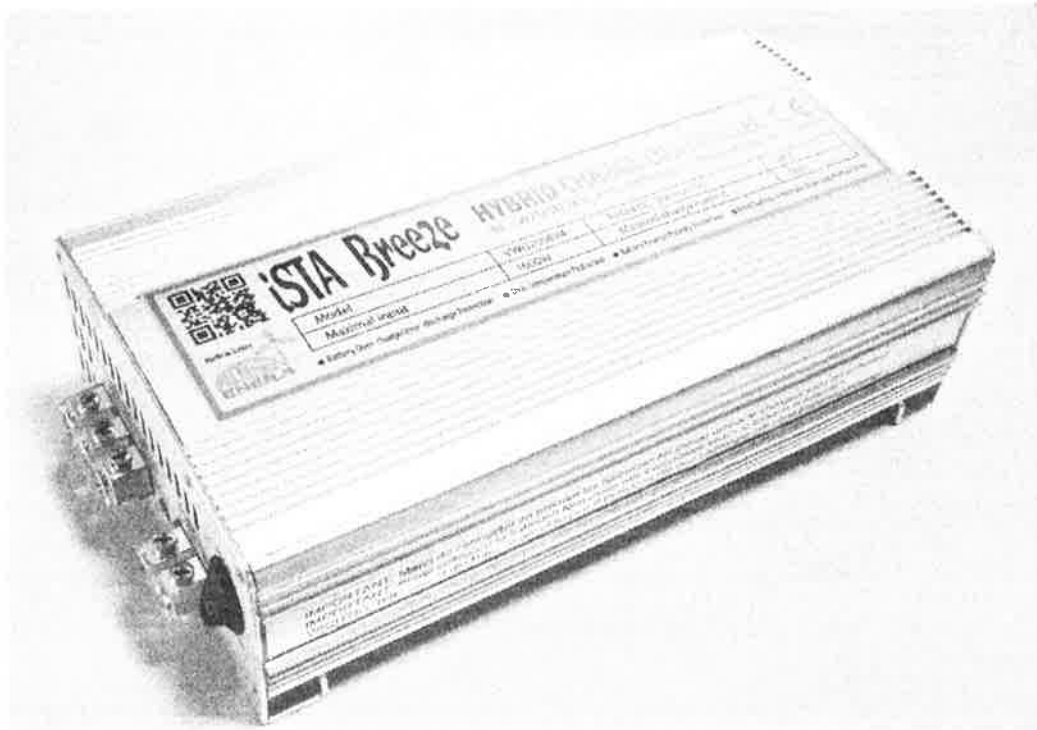


ISTA BREEZE® 1600W 24V Wind & Solar Hybrid Charge Controller

User Manual



Please read this manual very carefully. Failure to do so may result in serious injury and permanent damage to the hybrid charge controller and attached wind turbine. While every attempt has been made to ensure the information contained in this guide is accurate, we advise that we will not be liable for any omissions or inaccuracies.

Contents:

1. Safety

2. Features
3. Connection
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1. Safety

This manual must be fully read and understood before installation.

If you feel you do not have the necessary ability to connect this device contact your distributor.

Failure to connect the hybrid charge controller as indicated in Part C of this manual could result in the destruction of both the hybrid charge controller and the wind turbine.

Wind turbines **must** be connected to a load at all times. The hybrid charge controller is designed to fully protect the attached turbine.

Other important matters:

- Do not allow the unit to be exposed to moisture, rain or other liquids
- Protect the unit from direct sun and excess heat
- Ensure the unit is protected from unauthorised access including children
- Ensure all components are rated at the same voltage i.e. If you have a turbine rated at 24volts, the solar panel and battery should also be rated at 24 volts.
- Ensure the total wattage of the unit is not exceeded ie for the VWG2014 with the ideal mix being 1000 watt turbine and 500 watt solar
- Ensure all connections are firmly tightened
- Select suitably wire sizes for the currents being generated

2. Features

The VWG2014 hybrid charge controller is a smart controller.

The integrated micro computer monitors all the necessary inputs and outputs to ensure precise control.

Key features:

- Connection of both solar and wind
- Ensures the battery is maintained in best possible condition by preventing overcharging and over discharging.

- Automatic braking of the turbine when battery fully charged and/or no load connected
- Automatic braking of the turbine when charge current is too high i.e. in very high winds
- Manual brake switch, also have remote brake interface.
- A “Load” output where external devices can be switched on and off at user determined voltages.
- The “load” output is also current limited to protect the connected device
 - Reverse polarity protection for solar panel.
- Protection from lightning strike

3.Connection

IMPORTANT: Failure to connect the hybrid charge controller as indicated could result in the destruction of both the hybrid charge controller and the wind turbine and possible serious injury or death.

Refer to connection diagram on next page.

Do not erect or connect the turbine to the charge controller in windy conditions.

Always have the 3 wires from the turbine shorted together if not connected to the hybrid charge controller.

Ensure correct polarity is observed at all times i.e. Positive (+) to positive and negative (-) to negative for ALL connections. Failure to comply to this will void warranty.

Steps:

1. **Always** connect the battery to the charge controller **first** as shown in the diagram on the next page.
2. Ensure brake switch is on.

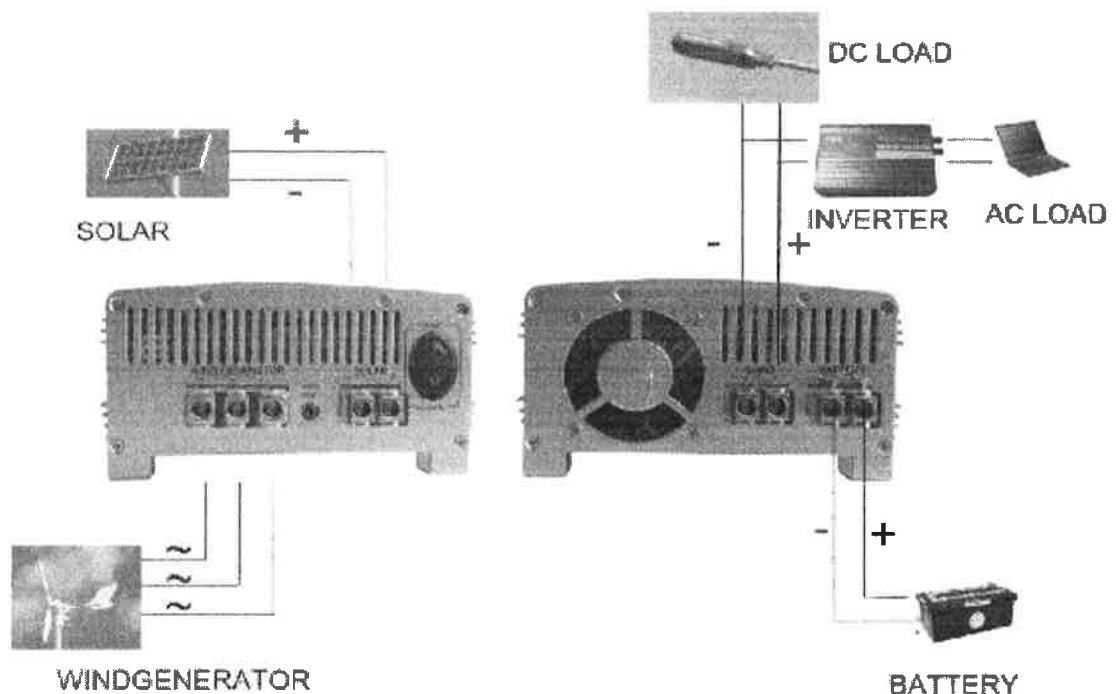
Do not proceed to the next step in windy conditions.

3. Remove one wire from the turbine leaving the other two shorted together and connect it to the hybrid charge controller as shown below
4. Remove the second wire and connect it to the hybrid charge controller. Note that at this point there is no load on the turbine until the second wire is connected to the hybrid charge controller so do this step as quickly as possible and NEVER do this in windy conditions.
5. Connect the third turbine wire.
The turbine is now protected.

6. Connect solar if have it as shown below.
7. Release brake switch and confirm turbine spins
8. Do not connect the load at this time until you have programmed the hybrid charge controller to values to suit the load

ATTENTION : This Hybrid Charge Controller suitable for ista BREEZE 1000W and 1500W turbine but when use 1500W wind power, controller can not support SOLAR power. For 1000W turbine, it support max. 300 solar panel.

Connection diagram



8GA cable size is recommended for short cable runs < 15 metres and heavier cable for longer runs to reduce cable losses

4. Troubleshooting

Condition	Cause	Fix
No display	Battery discharged, not connected or faulty	Recharge battery, check connections or replace battery
No load output	Nightlamp is "YES" and PV voltage is high than setting.	Set Nightlamp "NO". or wait the light dimmed.
Turbine not spinning	Brake switch is on	Turn off brake switch
Battery not charging	Battery too old	Replace battery

5. Specifications

Main parameters:

MODEL	VWG2014
Rated Power	Max. 1600W
Applicable batteries	24V, 100-300Ah
Battery full charge cut	28.49V
Battery low voltage disconnect load	22.55V
Battery low voltage reconnect voltage	25.10V
Max. Input Win. Power	1600W
Max. Input Solar Power	300W
Max charge current	60A
Recovery time after the automatic braking	6 min
No load loss	≤40mA
Dimensions	278×133×75mm
Net Weight	1.7kg
Working environment	Environment temperature -10℃~+50℃. Relative humidity 0~90%