



HYenergy Wind & Solar Hybrid Charge Controller 12v and 24v Models

Warning: None of HYenergy off-grid wind turbines can be grid tied without battery. Please don't try to connect off-grid controller to inverter directly. Connecting off-grid controller to inverters may pose risk of fire hazard and have wind turbine/electrical failure.

Controller is for battery charging only. Controller for HYenergy wind turbines can only directly connect to battery. You should never connect controller directly to any other devices such as inverters. Connecting controller to inverters or other devices than battery may pose risk of fire hazard and have wind turbine/electrical failure.

For HY-400, HY-600 and HY-1000 models, Minimum 50 amps AC brake switch is recommended between wind generator and controller in order to protect wind generator and controller from damages at high winds of 50 mph or higher. AC brake switch should be turned on (3 AC Wires are short circuited) BEFORE high winds of 50 mph or higher occur. If the controller experiences failure, you can short-circuit the wind generator immediately by crossing out 3 AC wires using the AC brake switch to prevent freewheeling. Properly sized circuit breaker must be installed between controller and battery to prevent wind turbine freewheeling and battery short-circuit. Recommended circuit breaker sizes are listed in our wind turbine guidebook.

I. Introduction

This multifunctional Hybrid Solar/Wind controller combines the functions of AC to DC rectifier, load control and dump load control for wind and/or solar systems. It eliminates the need for separate rectifier, solar charge controller and wind turbine controller. It is the most cost effective solution for renewable energy systems.

Features

- ✓ High Reliability: Extra large heat sink and efficient ventilation design ensure reliable and efficient operation.
- ✓ Great for hybrid wind/solar system, hybrid controller can support battery charging from simultaneous wind generator load and solar load combined up to 550w.
- ✓ Charge Control: Constant voltage series PWM regulation to provide highly efficient battery charging increase battery capacity and life.
- ✓ Load control and diversion control: The controller has over-charge protection, short-circuit protection, pole-confusion protection and automatic dump-load function. It is reliable with a highly efficient, long service life.
- ✓ Built in "Stop Switch" to slow or stop wind turbine for maintenance or high winds.
- ✓ Uses advanced technology and automated production to provide exciting new features at a competitive cost.

II. Technical Specifications

Controller Model	12V
Rated DC Voltage (V)	12Vdc
Peak Power (W)	650w
Self Consumption	< 10 mA
Operation Ambient temperature	-20°C~50°C
Size (L X W X H) Inch	15" x 7" x 6"
Maximum Wind Speed	50 mph

Controller Model	24V
Rated DC Voltage (V)	24Vdc

Peak Power (W)	1200w
Self Consumption	< 10 mA
Operation Ambient temperature	-20°C~50°C
Size (L X W X H) Inch	15" x 7" x 6"
Maximum Wind Speed	50 mph

III. Installation Guidelines

We recommend the following guidelines for installation; these guidelines should not be served as installation procedures, professional installation is required for all HYenergy wind turbines:





- 1 Shift the brake/release switch on front panel to “STOP” position.
2. Open the top cover of controller by removing the screws as shown:



3. Install a minimum 100amp breaker switch for the 3-phase AC wires from generator, and connect the wind generator 3-phase AC wires from breaker switch to controller's "WIND" terminals (no sequence).
4. Connect solar panel to "SOLAR" terminals on the controller. Skip this step if solar panel is not used. Make

sure the positive & negative terminals of solar panel are connected to positive & negative solar terminals on the controller. (Please check polarity is correct).

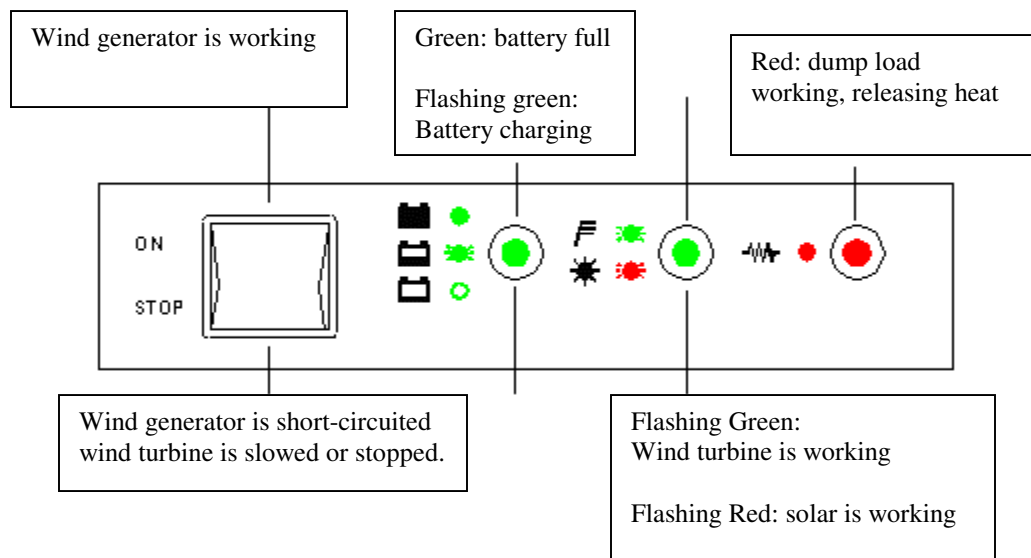
Solar panel must be rated 12V for 12V controller, solar panel must be rated 24V for 24V controller. Higher voltage solar panel will damage the controller or cause controller malfunction.

5. Connect battery to "BATTERY" terminals; make sure the positive & negative poles of battery are connected to positive & negative battery terminals. (Please check polarity is correct). Properly sized circuit breaker must be installed between controller and battery to prevent wind turbine freewheeling and battery short-circuit.

Recommended circuit breaker sizes are listed in our wind turbine guidebook.

6. Shift the brake/release switch on front panel to "ON" position.

IV. Indication Lights



Note: Output voltage of some solar panels is much higher than 12V or 24V, and this may trigger the dump load early or make battery light show “solid green”. Please make sure the maximum output voltage of solar panels is below 14V for 12V controllers and below 28V for 24V controllers.