CUSTOMER'S GUIDE

AUTOMATIC wind LOAD CONTROLLER

12_24 BATTERY VOLT 800 W

The Auto Controller allows direct connection of wind generator (three-phase turbine with permanent magnets of up to 800W for battery bank in order to generate a complete solution for wind power via battery charging.
In case off excessive turbine speed (for example, a storm) automatically controlling the braking system, avoiding mechanical damage.
Also in case the controller itself excessive temperature (over 80 ° C) battery charge is stopped and the turbine braked until the temperature reached acceptable levels (less than 70 ° C).

The battery bank voltage is constantly monitored, so that, upon reaching full charge, the charging system is disconnected and braked turbine.

Even the controller automatically detects the voltage used in the battery bank (12V or 24V) by adjusting its internal parameters as appropriate. Note that it is always preferable to use systems of 24V, because the current is involved half of the 12V system, which generates much less heat losses.

Connection

The controller You have the following connections:
The main connector has five contacts: three contacts for the three phases of the wind turbine (phase A, B, C), a contact to the positive terminal of the battery (BATTERY),

Internally there is a 30A fuse to protect a printed board in case of a short circuit. Usually this fuse should not burn, because there is protection against reverse polarity of both the battery and solar panel.

Two LED lamps indicates the operation of the controller. They are connected to a specific card connector as indicated in the drawing.

Note that the braking is gradual, taking about 20 seconds for the turbine reaches the minimum speed. As the brake is based on dynamic friction, ie to dissipate the energy generated by the turbine itself, this will not necessarily stop completely. In case of strong winds braked turbine will continue to rotate but with a low speed ..

Operation

Conect the battery bank to the controller. The wiring to the battery bank must have a minimum diameter of 4 mm ² copper. After a moment, the two LEDs (red and yellow) should flash briefly, indicating system startup. Soon after, the yellow LED should be activated, indicating that the controller measured the voltage of the battery bank, and initialize its internal constants properly (12V battery bank or 24V). If both LEDs blink to power the controller, and then the yellow LED remains off means the battery voltage is outside the permissible limits (less than 8V).In this case you need to recharge the battery bank before connecting it to the controller, or replace the batteries. When connecting the battery pay attention to the polarity. If you reversed the controller will not be energized, but no damage your system.

Connect the three cables of the wind turbine to the controller. Note that the controller is powered down, keep braked turbine. The connection order of the three cables is not important.

When load conditions (rotation in the wind turbine or the solar panel voltage in the case of hybrid systems) the yellow LED flashes, indicating that the battery bank is being charged.

To reach full charge voltage, the red LED turns on and charging the battery bank is interrupted.

If the red LED flashing pass means that some critical condition is satisfied, and the system frenou turbine and briefly turned off the battery charge to protect them.

Characteristics Basic s

- Input for wind generator 800W.
- Operation in 12V or 24V with automatic detection.
- Battery reverse polarity protection.
- Short-circuit protection (internal fuse 30A).
- Disconnection and braking of the turbine by excessive temperature.
- Disconnection and braking of the turbine by over-voltage.
- Disconnection and braking of the turbine by overspeeding.
- Fully prepared with solid-state components.
- Braking soft turbine, avoiding mechanical shock.
- Braking the turbine without even energizing.
- Option for manual brake switch.
- Ambient temperature compensation (-0,033V / ° C) for battery charging.
- Status indication via two front LEDs.
- **Reading the battery voltage, input voltage, temperature, r otação the turbine is through an optional external connection equipment in the purchase ..**
- Automatic shutdown upon reaching maximum temperature or minimum operation.

Indication LEDs

Yellow LED	Switched on	Powered system
	Off	De-energized system
	Flashing	System powered and battery charging
Red LED	Switched on	Fully charged battery
	Off	Battery not fully charged
	1 pulse	Battery disconnected or wrong voltage
	2 pulses	Excessive input voltage
	3 pulses	Rotation excessive turbine
	4 pulses	Overtemperature

Technical specifications

	12V battery	**24V battery**
Decision voltage to 12V or 24V system	17.0 V	
Voltage for battery charging start	12.6 V	25.2 V
Voltage for battery charging end	14.8 V	29.6 V
Minimum voltage battery detection gift	8.5 V	17.5 V
Maximum input voltage	25.0 V	45.0 V
Shutdown Temperature High Temperature	80 ° C	
Shutdown temperature at low temperature	-30 ° C	
Reclosing temperature for high temperature	70 ° C	
Reclosing temperature for low temperature	-20 ° C	
Temperature compensated battery charging limits	-0.033 V / ° C	
Ranges of temperature compensation	5 ° C | 15 ° C | 25 ° C |35 ° C | 45 ° C	
Fan drive temperature (optional)	60 ° C	
Minimum turbine rotation to indicate charge	300 rpm	
Maximum speed turbine	3000 rpm	
Maximum power at wind turbine inlet	300W	800W
Recommended Battery	12V / 200Ah	24V / 150Ah
Internal fuse	30A	
Proportional braking time	20 seconds	
Data switching time in HMI (optional)	5 seconds	
Recovery time after error conditions cease	2 minutes	