



WHISPER 200 (1KW) GRID TIE WIND TURBINE

LUMINOUS
RENEWABLE ENERGY

The Whisper 200 is now available in "Grid Connect" configuration also. The system comprises of

- A. Whisper 200 (1000W) in 120V configuration
- B. Grid tie interface controller-*
- C. Grid tie inverter with 120V DC to 300V DC input, 220/ 230V AC Single phase output. Options of output frequency are 50 Hz or 60 Hz. **

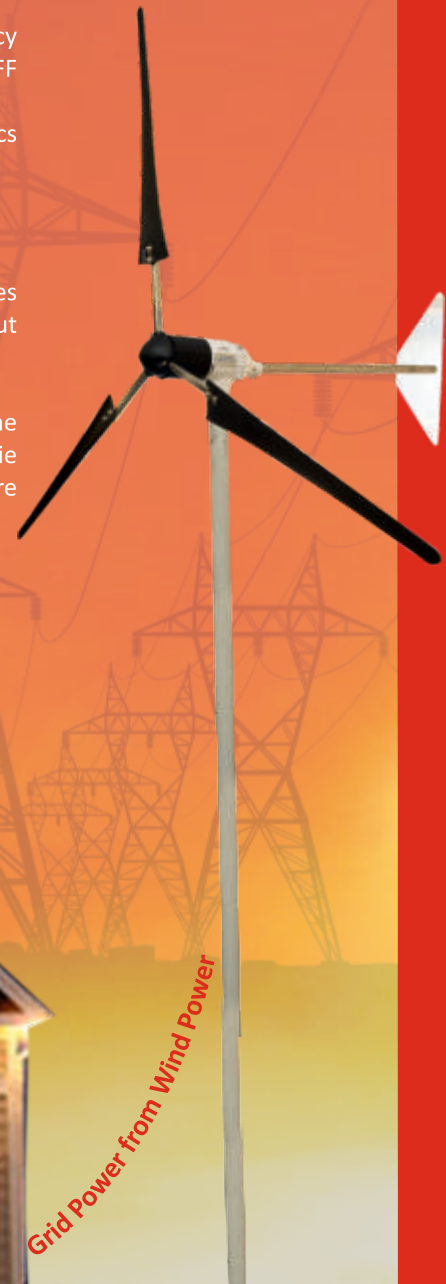
APPLICATION

- A. Light weight turbine can be installed on rooftops of country homes or city high rise
- B. Can be installed on mobile phone towers, thus reducing electricity cost.
- C. In the event of mains power failure when other grid tie systems have to be shut down, this system can be diverted to battery /inverter set for supply of emergency power. Unlike the other grid tie wind turbines, this system can be converted to OFF GRID configuration when the grid power is not available.
- D. The wind turbine is IEC 61400 & CE certified while controllers and power electronics are CE certified.
- E. An optional solar panel can also be connected to the system as shown in the picture.

* Accepts input of 120V AC to 300V AC 3 phase from the wind turbine and provides DC Output without any spikes almost like solar power. It also regulates the output voltage within maximum limit of 280V DC.

** Grid Tie inverter O/P specification to be mentioned in Purchase order.

*** In case customer wants to use any other grid tie inverter, he has to provide the minimum & maximum DC voltage & current acceptable at the input of the grid tie inverter as well as output AC voltage & frequency. The interface controller can be re configured to any grid tie inverter.



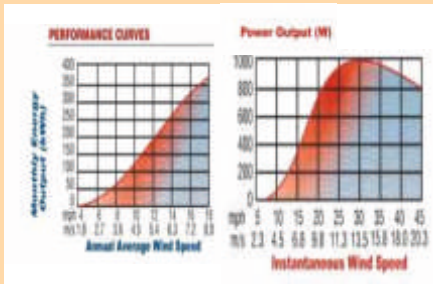
Grid Power from Wind Power



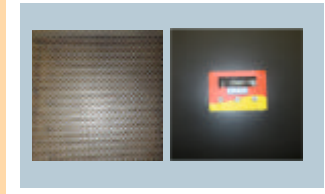
Whisper 200



Specification	
Model	Whisper 200
Number of Blades & Rotor shaft	3
Blade extenders	Stainless Steel
Rotor/Blade Diameter	2.72 M
Body/housing	Cast Aluminum & MS duly marine coated as per ASTM B - 117
Mount	2.5 inches
weight	30kg
Peak Electrical Power	1000 Watts peak (as per IEC 61400 test)
1 min max average Power Output	700 Watts (as per IEC 61400 test)
Rated/Voltage	24V/ 36V/ 48V/ 120V/ 240V DC (controller o/p)
Rated wind speed	11.6 m/s to 13 m/s
Startup/Cut in wind	2.7 m/s
Survival wind speed	55 m/s
Safety in high wind	Mechanical furling electro magnetic braking



Grid Tie Interface Controller



Specification :

- Capacity 1.5KW/ 120V(Input and output voltage band can be reconfigured at factory as per customer demand)
- 1500 W dump load for o/p voltage control
- Optional output for battery charging during mains grid non availability
- a. I/P voltage: 0 to 360V AC, 3 PH. (W200)
 - I/P voltage: 230V AC, 1 PH. (from Mains)
 - O/P voltage: 0 to 280V DC.
 - I/P signal: Fault signals from inverter.
 - Auto change over to dump in case of DC voltage beyond safe working range
- b. Dump Load ON or Speed Control voltage: 280V.
- c. Dump Load Off high voltage: 135V.
- d. Dump Load Off low voltage: 85V.
- e. Status monitoring of main set points
- f. Digital LCD display of the following:-
 - Wind turbine charging current.
 - Wind turbine charging voltage.
 - Wi1nd turbine charging power
- g. Dimensions:
 - Controller: 255x255x145 mm
 - Dump Load: 225x230x105 mm

Grid Tie Inverter

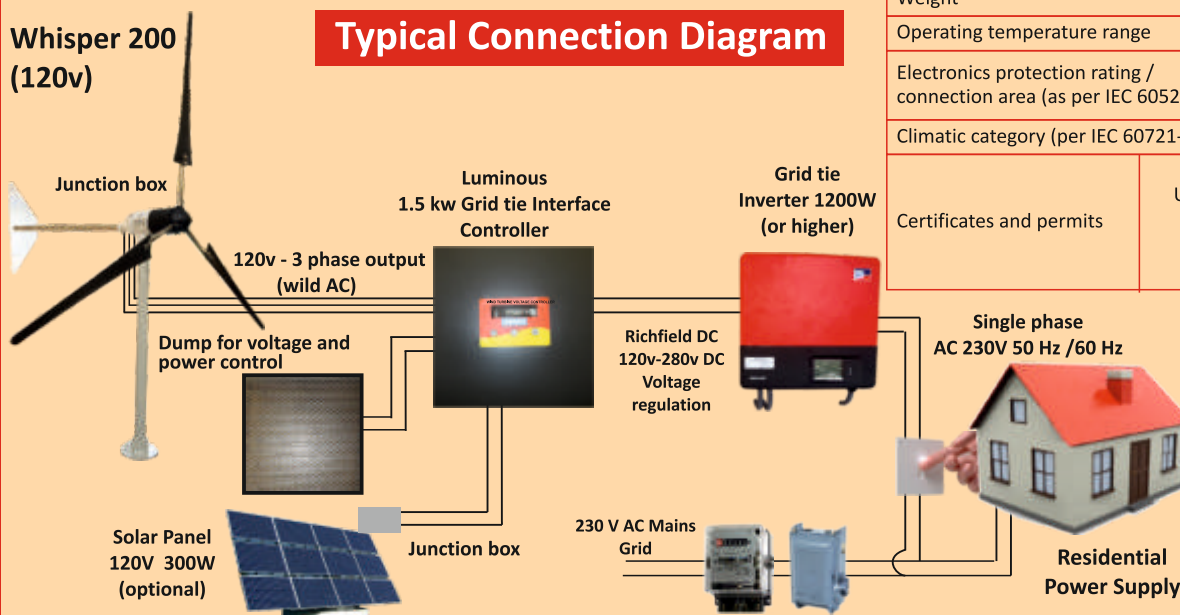


Specification

Input (DC)	
Max. DC power (@ cos φ = 1)	1320 W
Max. DC voltage	400 V
MPP voltage range	100 V – 320 V
DC nominal voltage	120 V
Min. DC voltage / start voltage	100 V / 120
Max. input current / per string	V12.6 A / 12.6 A
Number of MPP trackers / strings per MPP tracker	1 / 2
Output (AC)	
AC nominal power @ 230 V (50 Hz/60 Hz)	1200 W
Max. AC apparent power	1200 V
Nominal AC voltage; range	A220, 230, 240 V; 180-265 V
AC grid frequency; range	50, 60 Hz; ± 4.5 Hz
Max. output current	6.1 A
Power factor (cos φ)	1
Phase conductors /connection phases	1 / 1
Efficiency	
Max. efficiency	92.1 % / 90.9 %
Protection devices	•
DC reverse-polarity protection	•
ESS switch-disconnector	•
AC short circuit protection	•
Ground fault monitoring	•
Grid monitoring	•
General data	
Dimensions (W / H / D) in mm	440 / 339 / 214
Weight	23 kg
Operating temperature range	-25 °C ... +60 °C
Electronics protection rating / connection area (as per IEC 60529)	Ip65 / IP65
Climatic category (per IEC 60721-3-4)	4K4H
Certificates and permits	CE, VDE 0126-1-1, UTE C 15-712-1, DK 5940*, RD 1663 , G83/1-1, EN 50438**, C10/C11, PPDS, IEEE 929

Whisper 200 (120v)

Typical Connection Diagram



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