

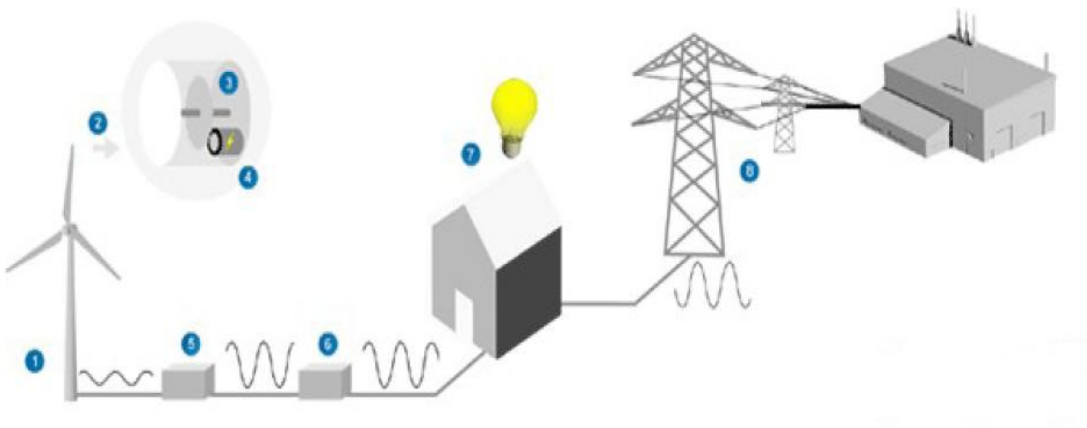
THE POWER OF NATURE



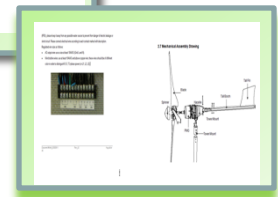
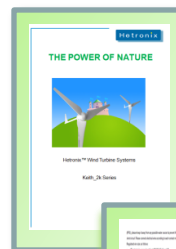
Hetronix™ Wind Turbine Systems

Keith_2K Series

How-Does –It-Work.....a simplified view



Hetronix proprietary system set



Hetronix Keith_2K Specifications

Hetronix Keith_2K wind turbine system is the latest small wind turbine generator system designed to provide electricity used for several applications;

- Off-grid: battery charging (stand-alone/remote) electrical power supply system.
- Grid-connected: using the Hetronix Inverter with the Keith_2K wind turbine system.

The Hetronix Keith_2K wind turbine system consists of a 2.4 meter rotor system and a generator of 35cm in diameter. The 63 kilogram wind turbine is rated at 2000 Watt @ 12.5 m/s wind.

Keith_2K features superior “low wind-speed blade design”. It provides great performance, very high system efficiency, and low noise. Depending on the output voltage, ensure you have the correct Hetronix Keith_2K system as there are various types. See the following table for more details.

Keith_2K wind turbine Efficiency

The generator of Keith_2K wind turbine system should begin to generate electricity when the wind speed reaches approximately 3,5 m/s. The rotor rotational speed will increase with higher wind speed. The generator output is proportional to the third power of wind speed. Please refer to Figure 4 for the relationship between energy output and wind speed.

Technical Specifications

Keith_2K Wind Turbine System	
Rotor diameter:	2.488 m
Swept area:	4.792 m ²
Cut-in wind speed:	3.5 m/s
High wind protection:	Active side-furling starts @ 16.5 m/s (Empennage_C)
Rated wind speed:	12.5 m/s
Overspeed Protection:	Electromagnetic over-speed voltage protection and resistor braking
Survival wind speed:	50 m/s
Rated power:	2kW @ 12.5 m/s
Generator type:	3-phase (AC) permanent magnet generator (PMG) of a 18 polarity structure
Rotor RPM:	145 rpm - 780 rpm
Maximum power PMG:	3.6 kW
Generator output options:	Keith_2K_A : 3Phase AC 7V - 55V Keith_2K_B : 3Phase AC 15V - 125V Keith_2K_C : 3Phase AC 30V - 240V Keith_2K_D : 3Phase AC 60V - 380V Keith_2K_E : 3Phase AC, 120V - 440V Keith_2K_F : 3Phase AC 160V - 600V
Hybrid option:	Keith_2K: Hybrid system with green UPS Inverter for Wind, Sun and Wind-AND-Sun (solar panel) application
Rotor blades:	Carbon/glass fiber reinforced composite
Blade part length:	1.20 m
Windturbine housing material:	Aluminium alloy
Total weight:	63 kg
Operational temperature range:	- 20 °C to 50 °C
Warranty:	4 –years with 3 years active service warranty

Keith_2K, the easy Wind Turbine system

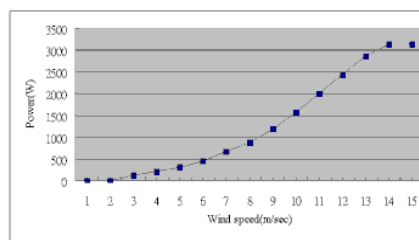
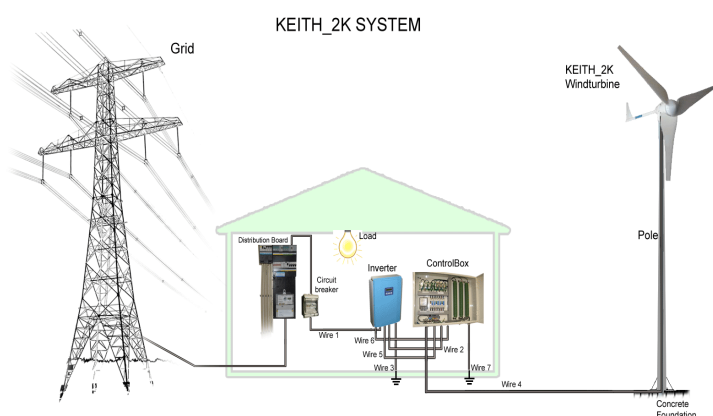
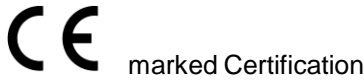


Figure 4

The Keith_2K wind turbine is a (HAWT) horizontal direct drive wind energy system for off-grid or grid-connected use. The single-phase grid-connected wind energy inverter is different when compared to traditional, stand-alone type wind energy inverters. It does not need additional expensive and large- space-required energy storage batteries, and is free from considerable battery maintenance expense. It efficiently converts power generated from the wind turbine and very efficiently converts to AC power which feeds into the grid, having the direct benefit of generated power and energy savings. It is suitable for domestic residence and industrial use.

Tested and Certified



Verification of MD & LVD Compliance

EN 61400-2: 2006 (Wind Turbine Generator Systems - Part 2: Safety of Small Wind Turbines)

EN ISO 12100-1: 2003, EN ISO 12100-2: 2003, Safety of Machinery

EN 60204-1: 2006, Safety of Machinery

EN 1050: 1996, Safety of Machinery

Machinery directive: 98/37/EC amended by 2006/42/EC

Low Voltage directive 2006/95/EC

Certified by SGS Taiwan LTD Electronics & Communication Services

Certificate No: EZ/2008/50037 C

Verification of EMC Compliance

EN 61000-6-2: 2005, EN 61000-6-4: 2007

EMC Directive: 89/336EEC amended by 2004/108/ EC

Certified by SGS Taiwan LTD Electronics & Communication Services

Certificate No: ED/2008/50046C



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