ATR SA Pty (Ltd)

Brochure

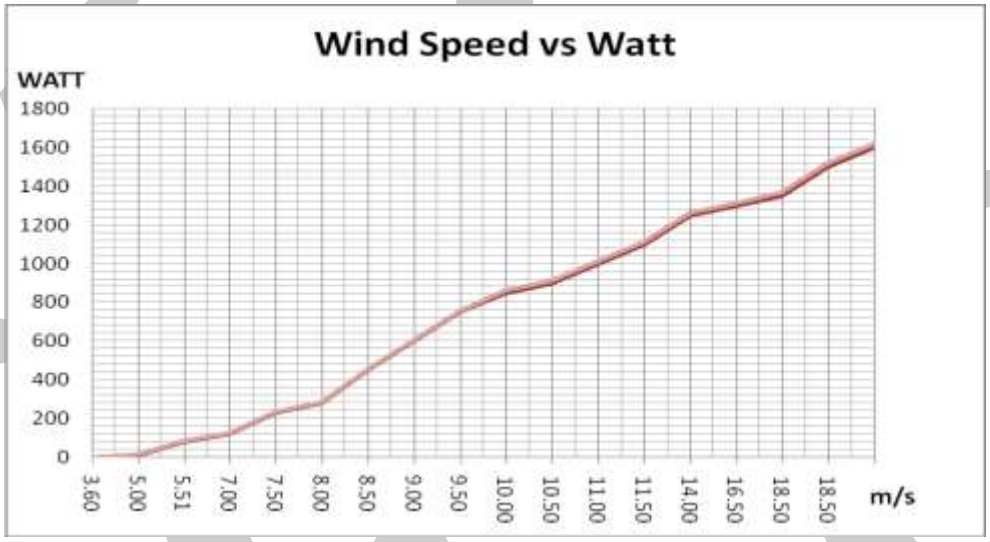
ALTERNATE TECHNOLOGY RESOURCE SA Pty (Ltd)

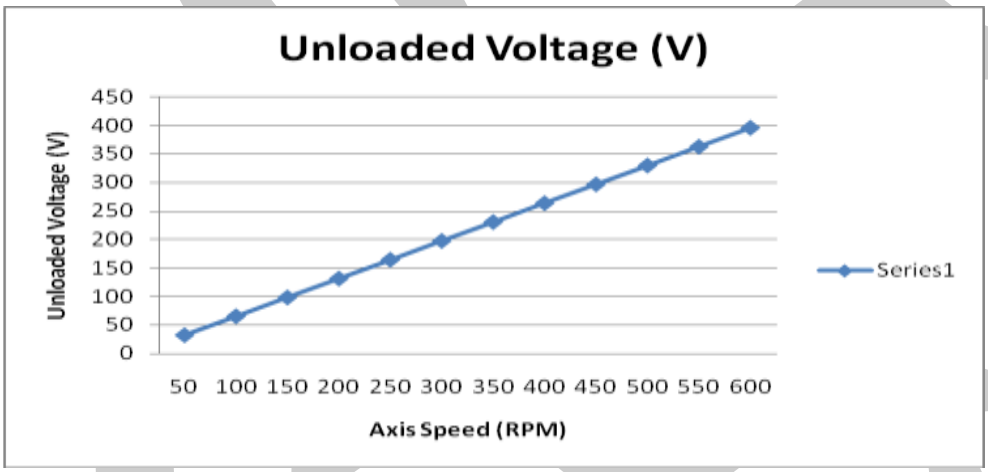
08/03/2010

General information and data of the OSPREY GR-1 Wind Turbine and associated products.

OSPREY GR-1

The OSPREY GR-1 Vertical Axis Wind Turbine is a state of the Art wind turbine designed by ATR SA PTY (Ltd) that is specific focussed on the urban environment. It's noiseless and safe operation even at extreme wind conditions and its aesthetic appearance makes it most suitable for Home and Business installation alike. The Osprey GR-1 is generating three phase AC power even at relative low wind speeds.





Suitable for charging 12,24,36 or 48 Voltage Systems.

The Osprey wind turbine solves many of the issues associated with traditional HAWT or "propeller" type design and due to the unique Vane design and the notable absence of sound, the Osprey cannot over speed and will continue to operate even at extreme winds. The traditional horizontal wind turbines, in most cases, need a complex breaking mechanism of some sort to reduce revolution to avoid blade shear and thus reduce power output at strong wind condition when this is the time you want to harvest the wind and not slow down. Due to the design of the Vertical concept wind turbine the Osprey GR-1 only requires a 1.5 meter square footprint and can be stacked in multiples without interference of each other if more power is required.

The relative light weight of< 65 Kg enables the installation on Roofs, side of Buildings and on Communication Towers.

For the Osprey GR-1 to operate efficiently the Mast height or installation height should not be lower than 9 meters, also have no close objects that may reduce the wind such as Trees or Buildings blocking the wind. The concept of a VWAT allows harvesting the wind from all sides without stopping for reorientation to the new wind direction, hunting for wind, unlike the common horizontal wind turbines and regardless of the wind direction will keep on operating at peak even in turbulent wind

condition. The Maintenance free design, only one moving part, saves costs on operational maintenance expenditure and therefore the Osprey GR-1 is most suitable for remote installations.

Low Wind Condition (New Model)

OSPREY GR-1

Technical Facts:

Permanent Magnet Generator	PMG

Rated Output Power (Watt) optimum	1400
Rated Rotation Speed (Rpm)	550
Weight (Kg)	+-80
Power Cable Cross Sectional area (mm)	6
Application	Battery Charging
Vane Material	High Quality/Weather proof Anodised Aluminium
Physical dimension Height (mm)	1500
Physical dimension Width (mm)	1200
Windings temperature ratings (Celsius)	180
Magnets temperature ratings (Celsius)	180
Generator connection	Single Shaft
Unloaded Voltage at max. RPM (Volt)	350
Output at max. RPM (Watt)	1400
Generator Configuration	3 Phase star connected AC output
Generator outer Case Material	High standard Aluminium alloy

(PatentPending)

The Osprey uses the latest technology of a permanent magnet generator (PMG) that replaces conventional brush and wound coil generators, which are high maintenance. The PMG uses rare earth magnet generated magnetic fields to produce electricity at lower revolutions and far higher output. The Osprey has no gearing and is mounted on a single shaft direct drive, reducing the need for ongoing maintenance.

From an ecological respective the Osprey GR-1 appears as a solid object to Birds so they simply fly around it unlike with the horizontal turbines were Birds tend to fly through the propeller and get hurt or killed.

The robust but lightweight construction of the Osprey GR-1has been designed for maximum strength and virtually eliminates the significant risk of high speed blade shear and subsequent balance destruction associated with traditional HAWT designs, an occurrence mostly associated with rare wind carried debris or Bird strikes.

<u>WTTC- Wind Turbine Charge Controller</u>

The Wind Turbine Charge Controller (WTCC) that is used with the Osprey GR-1 was designed specific to compliment the efficient operation of the Osprey GR-1. The Controller will optimise the charge rate versus Turbine output. In simplified terms it will act like a "Clutch" on a motor car and it senses the rpm/Voltage and output of the turbine respectively, managing the load without slowing the turbine below efficiency level and thus optimising the charge into the Battery system. It regulates the AC input of the Turbine and rectifies the output into DC. The unique feature of the WTCC is that once the Batteries are fully charged there is no load dump required due to the design of the Osprey GR-1 Wind Turbine.

The WTCC that ATR has selected as a preferred Voltage Regulator is manufactured by MLT Drives South Africa.

ATR
Alternate Technology Resource SA

Alternate Technology Resource SA Customer List

Customers for the OspreyGR-1/2 include apart from several private customers:

- ***MOBAX- Telecom International (installation of Cell Phone Transmitter stations throughout Africa).***
- ***FACILLICOM a International Company operating mainly in Africa, a solutions provider for several Telecom projects and other civil projects.***
- ***SOLEIL an International Company operating in EUROPE, SOUTH AMERICA and AFRICA providing alternate power solution.***
- ***REUTECH a Manufacturer of high tech Military equipment, branching out into a solution provider in telecom business.***
- ***SENSESEVEN a Company involved in providing alternate power solution to the private sector and South African government, involved with low cost housing to provide electricity.***
- ***NEDSHIELD a Company that is a solution provider to Municipalities for alternate power solutions.***
- ***IST a solution provider to Vodacom/MTN installations.***