NetLife wind turbine

Cost effective - shorter ROI period compared to alternatives

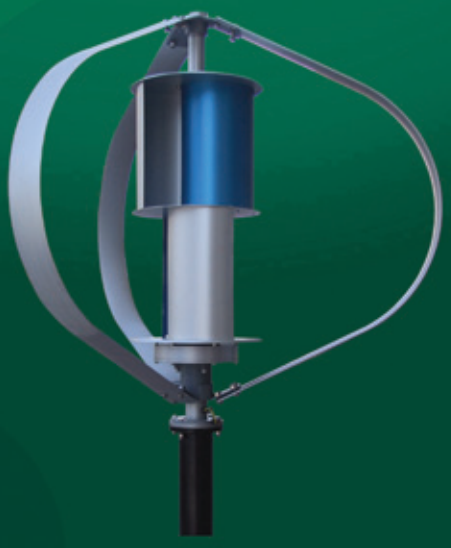
Key benefits:

Performance:

- Start-up and efficient generation at extremely low winds
- Superior efficiency
- Vibration free
- Silent operation in all wind regimes

Reliability:

- Robust design
- Simple to install
- No maintenance required

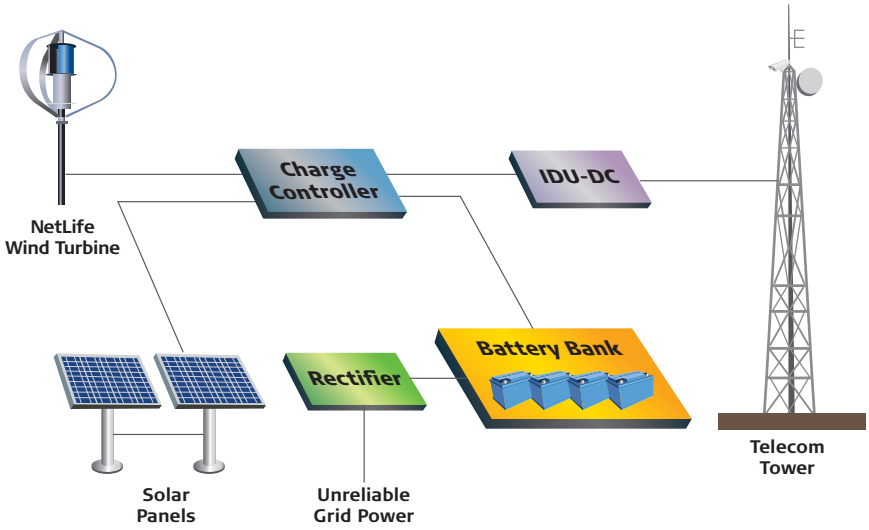


Applications:

- Wireless links and repeater sites
- VSATs in remote areas
- Surveillance cameras
- Control systems for oil, gas and water pipelines

The NetLife wind/solar power system provides a renewable energy source to a wide range of low energy consumption applications in remote and urban locations. NetLife wind/solar power system is the best option for powering wireless links, VSAT, surveillance cameras and control devices in remote areas, where central power grid is unavailable or unreliable.

The combination of solar panels and wind turbine guarantees a required continuous power output in different climates. NetLife vertical axis turbine's patented design makes it possible to start the generator at lower wind speeds which increases the total power generation compared to other wind turbines.



The advantage:

Connectivity is needed today in areas where grid power is not provided yet. Also connectivity is needed when a disaster has made the gird power unavailable. In some countries the grid power is available but not continuous while connectivity is needed round the clock. Renewable power sources are used widely in remote sites, like top of mountains in which even a generator will be costly due to the need for routine site visits, fuel top up and maintenance.

Battery backed power sources are used to address the need for power in all the above cases. Recharging batteries using photo voltaic cells known as solar panels are common but as the sun is shining with power generating levels in 6 hours a day only, the system should be operated with Batteries for more than 18 hours. More over the days with no sun shine would force the need for back up power for more than 3 days.

Wind turbines can generate power 24 hours a day provided that the wind is blowing with proper speed. Better wind possibility is experienced with cloudy and rainy weather when the sun shine is not available for PV panels.

The use of wind turbines reduces the need for PV panels by up to 25% and as the need for backup power is less, the number of batteries are reduced as well and this will reduce the cost of the total system while reliability and durability is improved.

Specifications

WIND TURBINE

General	
Rated Power	300 W
Rated Speed	835 rpm
Cut out Wind Speed	15.5 m/s
Generator Type	AC, 3 phase, Synchronism PMG

Dimension/Weight	
Rotor Diameter	1.24 m
Tower Height	1.06 m
Total Height	4.00 m (minimum)
Turbine Weight	25.5 kg w/o tower

Rotor Specifications	
External Darrieus	3 blades
Internal Savonius	2 layers
Blades Material	Anodized aluminum
Axis Material	Galvanized steel SS400

Braking System	
Automatic	3 phase, short circuit braking system
Manual	Optional

Operation Conditions	
Ambient Temperature	-10 ~ 40 ˚C
Ambient Humidity	95 ˚C max
Rated Wind Speed	13.5 m/s
Cut in Wind Speed	<3 m/s
Survival Wind Speed	60 m/s

CHARGE CONTROLLER

Technical Parameters	
Rated Battery Voltage	24 V
Rated Wind Turbine Power	600 W
Wind Turbine Maximum Input Current	40 A
Wind Turbine Maximum Input Power	1000 W
Unload Voltage˚ factory default˚	28 V
Unload Current˚ factory default˚	25 A
Rated Solar Power	300 W
Battery Over Discharge Voltage Shutoff	22 V
Battery Over Discharge Recovery	24 V
Output Protection Voltage	32 V
PV Voltage Of Light-Control On	Adjustable (2 V)
PV Voltage Of Light-Control Off	Adjustable (3 V)
Load 1 Rated Output Current	10 A
Load 2 Rated Output Current	10 A
Load 1 Output Mode (Factory Default)	3 Modes Selection (Light-Control On and Light-Control Off)
Load 2 Output Mode (Factory Default)	3 Modes Selection (Light-Control On and Light-Control 5 hours)
Control Mode	PWM
Display Mode	LCD
Display Parameters	Wind Turbine Power, Wind Turbine Voltage, Wind Turbine Current, PV Voltage, PV Charge Current, PV Power, Battery Voltage, Over Voltage, Under Voltage, Over Load, Short Circuit, Night, etc.
Working Temperature & Humidity	-20~+55 ˚C /35~85% RH (Without Condensation)
Temperature Compensation˚ optional˚	4 mV / ˚C /2V, -35 ˚C --+80 ˚C, Precision: ±1 ˚C
Communication Mode˚ optional˚	RS232, RS485, RJ45, GPRS, etc.
Quiescent Current	≤ 20 mA

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