

PowerWind 500

The PowerWind 500 is perfectly tailored to the requirements of smaller community wind installations. It combines a superb profitability due to outstanding energy yield with a low sound power level. Moreover its aesthetic design with conical tubular tower and reduced heights make the PowerWind 500 perfect to integrate in community surroundings.

The PowerWind 500 is a variable-speed, pitch-controlled wind turbine, certified in accordance with IEC wind class IIA& IIIA. It has a rated power output of 500 kW and a rotor diameter of 56 m & 60m. The turbine design is based on the well-proven modular drive train concept and combines robust mechanical engineering with state-of-the-art power electronics. Many years of wind energy experience and the success of the 900 kW PowerWind 56 have been drawn on in the creation of these new models & 850kW PowerWind 60.

Designed to simplify logistics, the PowerWind 500 is particularly beneficial for locations which are difficult to access or have weak infrastructure.



PowerWind 500

The PowerWind 500 has a superb profitability due to the highest energy yield in its class.

- Higher energy yield than all other comparable wind turbines in the same class due to large rotor diameter
- Variable speed and pitch control allow maximum energy production at reduced drive train loads
- Multiple tower sizes from 44-71 m

Low sound power level due to reduced rotor speed.

- Sophisticated turbine design concept allows lower rotational speed and therefore a very low sound power level

The PowerWind 500 is modelled after the proven modular drive train concept — sharing the same mechanical robustness as the established PowerWind 56 & PowerWind 60.

- The newly developed PowerWind 500 is designed with a maximum rated power of 500 kW
- High reliability due to sophisticated components from reputable European manufacturers
- Robust engineering

By using a full-scale modular converter in the megawatt class, the PowerWind 500 benefits from the experience gained with multi-megawatt turbines.

- Minimal disturbances (harmonics and flicker) due to use of a full-scale converter
- Large reactive power control range for potential of grid support
- Fault ride through in accordance with international grid requirement (optional)

By consciously reducing the system dimensions, difficult logistics requirements are met.

- Transport in containers possible
- Transport of the three rotor blades on a single truck
- Lesser crane requirement than multi-megawatt turbines, therefore significantly higher crane availability
- No special permit for road transport required in many countries

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With its full range of features, the PowerWind 500 perfectly matches the requirements of smaller community wind installations.

- Highest energy yield due to large rotor diameter options
- Low sound power level due to reduced rotor speed
- Compact design facilitates logistics and installation even in difficult locations
- Full-scale converter makes the system suitable even for weak grids

All key components are sourced from reputable European manufacturers and meet high durability standards.

- Close cooperation with leading companies in the wind industry from Germany, Finland & Denmark.
- Core suppliers certified to ISO 9001: 2008

The modern control concept offers web-based system monitoring and control.

- Simple web-based remote monitoring (SCADA) independent of a specific site

The high importance given to environmental protection is clearly reflected in our design.

- Where possible, no hydraulic units are used
- Enclosed oil and grease collecting trays

Compliance with all applicable safety standards is guaranteed.

- Lightning and surge protection corresponds to the lightning protection zone concept of IEC 61400-24
- Design of the tower fixtures is in accordance with DIN EN 25817-B and EN 50308

Design Evaluation in accordance to IEC61400-22ed 2010.

The PowerWind 500 was developed to provide easy service and maintenance.

- Accessibility to all main components with the possibility of easy replacement
- Customized service packages available

Performance Parameter for PowerWind 500-60m			
Rated power output	500 kW	Generator	Asynchronous, air-cooled
Cut-in wind speed	2.5 m/s	Nominal rotation	1,350 rpm
Rated wind speed	9.2 m/s	Enclosure class	IP 55
Cut-out wind speed	25 m/s	Converter	Full-scale converter (water-cooled)
Rotor diameter	60 m	Tower	Conical steel tower
Rotor swept area	2,826 m ²	Hub height	44, 46, 49, 50 m
Rotor speed Speed control	6-24.9 rpm		(59 and 71 m on request)
	Individual electrical pitch	Nacelle	Glass fibre reinforced plastic
Aerodynamic breaking	Individual full span pitch	Blades	Glass fibre reinforced plastic
Operating temperature range	-20 °C to +40 °C	Blade length	29.1 m
Power factor	0.9 ind. to 0.9 cap.	Number of blades	3
Wind class	IEC 61400 IIIA	Control system	PowerWind
Gearbox	One planetary and two spur gears	SCADA	PowerWind SCADA System
Gear ratio	01:54.2	Grid connection	50 Hz/690 V
Mechanical brake	Disc brake on high-speed shaft (hydraulic)		
Yaw drive	3 AC motor drives with planetary gear	Available from:	
Yaw brake	Friction brake	PowerWind Limited	
		Plot no.352-353	
		HSIIDC Industrial Area Bawal	
		Rewari, Haryana-123501	
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