

E200 WIND TURBINE

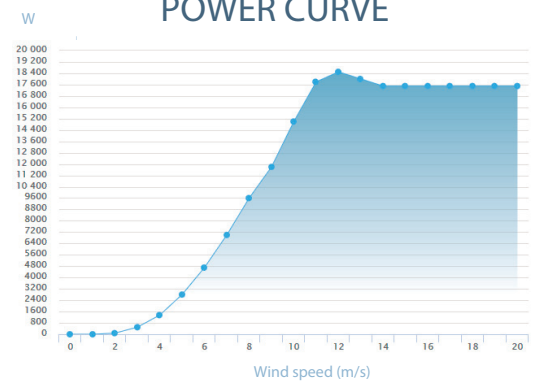
DATA SHEET

THE LARGE WIND TECHNOLOGY IN SMALL

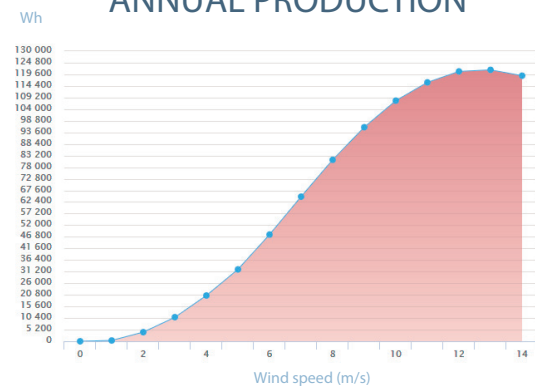
Our patented technology is an intelligent adaptation of the main systems which big turbines have to small turbines from 10 to 60 kW. High security, maximum control and the best efficiency on the market in power generation.

GENERATOR	Nominal power	20kW
	Configuration	3 phases - 500V - Direct drive
TURBINE	Configuration	3 blades, horizontal axis, Upwind
	Rated power	18kW - IEC61400
	Applications	Direct grid tied - Micro grids
	Rotor speed	120 - rpm
	Start rotation	1,85m/s
	Cut production	30m/s
	Protection	Ip - 65 - Sand and high protection
	Weight	1000kg.
ROTOR	Yaw	Aerodynamic downwind orientation
	Diameter	9,8m
	Swept Area	75,4m ²
	Blade length	4,5m
	Blade material	Fibreglass, flex resins and polyurethane
BRAKE SAFETY SYSTEM	Regulation speed	Active pitch, electronical regulation and brake
	Pitch	Variable pitch with active control By wind and power
	Brake	Electromechanical safety brake
TURBINE CONTROL	Electronic control of	Wind speed Temperature (optional) Frequency Voltage Grid failure Sensors failure
	Electronic system	Programmable system to adapt the turbine Register alarms
INVERTER	Software	Customizable software. General screen of key parameters (optional)
	Solar inverter	Compatible with solar inverters of constant voltage at 500V

POWER CURVE



ANNUAL PRODUCTION



E200 WIND TURBINE TECHNICAL PROFILE

PITCH CONTROL

Patented technology. Characteristics:

- Sturdiness
- High endurance
- Full angle pitch control
- Spring passive security, if any fault
- Hydraulic control
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Scalable technology from 5 to 100 kW of power:

- Simple
- Very secure
- Fully controlled

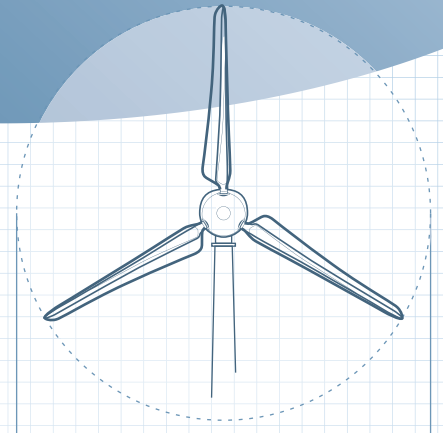
ELECTRONIC CONTROL

Multi-program functions:

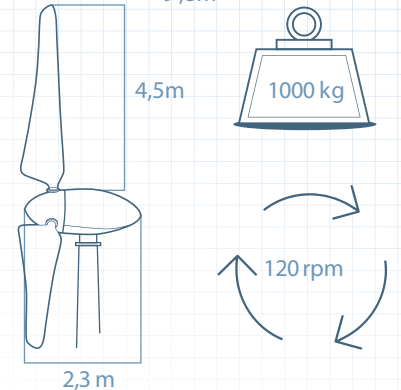
Full control of:
rpm, Hz, m/s, torque, AC/DC voltage

Reads all the turbine parameters, which let you decide the best actions in external controls to optimize your production and security.

The software enables different types of behaviours depending on the wind conditions to increase the efficiency.



9,8m



4,5m

1000 kg

120 rpm

2,3 m



**THE HIGHEST TECHNOLOGY
IN SMALL WIND TURBINES**

ACTIVE PITCH AND PASSIVE PROTECTION

The active pitch control enables the position of the blade for production to vary for each engine rotation speed and wind speed from the beginning up to high wind speed.

The benefits of mechanical simplicity and advanced electronics are combined to make a perfect tandem and maximize energy production.

THE CFD AND AERODYNAMIC DESIGNS

For the full wind turbine design it has been done a complex aerodynamic study based on the most modern techniques of computational fluid dynamics.

In this case, the studies required a very high computing capacity and expert knowledge because the conditions are complex due to the wind turbines operation conditions.

MONITORING SYSTEM

To say that our product is the best, it is necessary to prove it, so we have chosen to provide a complete monitoring system of various parameters of the wind turbine to left the user to check the production and it condition, even from the Internet, without being on site.

Silent



The aerodynamic profile of the blades is based in the FX profile series, and its design is for magnimize production and minimize noise



Efficiency

The control system allows to extract the power maximum available since the start of rotation and can adapt to any environment



Greater safety than ever

3 security systems, active and passive: electromechanical active brake, aerodynamic and passive dock, which act in any condition



Waterproof

The materials used are made with a tropicalization treatment to install in islands, deserts or aggressive environments.



High endurance

According to IEC 61400-2 the design of the wind turbine is classified as Class 1, with safety factors in the critics components of an $F_s = 9$



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2014



IN PROCESS OF CERTIFICATION:

