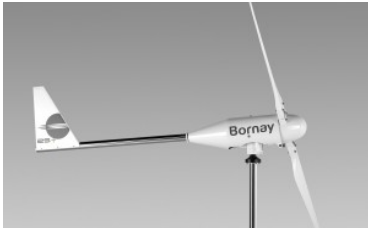


# WIND +

Wind + is the result of over 45 years of experience in the small wind industry, where Bornay has worked hard to innovate and to get a so far unknown result.



Aerogenerador minieólica Bornay Wind 13+



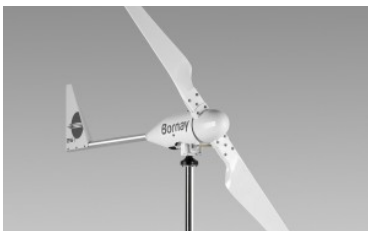
Aerogenerador minieólica Bornay Wind 25.2+



Aerogenerador minieólica Bornay Wind 25.3+



Aerogenerador minieólica Bornay Wind 13+



Aerogenerador minieólica Bornay Wind 25.2+

The range of our small wind turbines, Wind+, goes a step further with the development of the small wind technology to an extent unknown in this technology.

Under an aesthetic already known, we have worked hard in an evolution towards more compatible, easier to install and better performance turbines.

Among the most notable challenges, the new Wind+ is equipped with permanent magnet neodymium alternator to a single output voltage of 220 Vac, for any application, providing maximum efficiency equipment. The second major challenge comes from the hand of the control electronics, with 2 drivers for all applications: Controller MPPT for battery charging and interface for direct connection of all types of consumption, both AC or DC, or grid connection inverters.

The new drivers introduce a new machine control system, which incorporates voltage control and rpm, ensuring perfect machine control, while substantially improving the efficiency of the wind turbine.

We have employed 8 years for the development of the new range of small wind turbines, Wind+, with the implication of three technicians and the collaboration with the UPV (Polytechnic University of Valencia). There have been interesting results at key points of development of small wind turbines: Up to 20% more output, lower startup speed, efficiency alternator up to 96%, compatible with all types of batteries (included Lithium), new compatibilities with direct consumption, remote monitoring...

With the Wind +, small wind turbines open a new stage, with many applications and integrations with other technologies. Some of the main characteristics of the new Wind + range of wind turbines are:



### Placement

- Previous to the installation of the wind turbine.
- Windspeed data logger.
- Site parametrization
- Selection of the ideal wind turbine.
- Possible wind turbine improvements (blade diameter, power curve definition).



### Maximum Efficiency

- Power production at low windspeed up to 20% more than previous models.
- Alternator efficiency up to 96%.



### Security x 3

- Three control systems improve the security of Wind + wind turbines:
  - Electronic controller
  - Wind + Speed Control
  - Tilting disorientation.



### Modularity

- Options to integrate the wind turbine into many applications:
  - ModBus communication
  - AC / DC applications
- Direct uses (water pumping, motors ...)



### Monitoring

- Monitor your wind turbine thru Bvisual platform.
- Monitor your renewable energy system:
  - Wind / solar production, battery status, inverter status, consumptions ...
  - thru VRM - Victron Energy Remote Monitoring (coming soon)



### Remote control

- Control your wind turbine remotely.
  - Change power curve parameters.
  - Reduce power peak production.
  - Actualizaciones de firmware.
- Protection mode in case of natural disasters.



## Wind + Speed Control

- Intelligent speed control system over the power curve
  - Cp
  - Lambda

## SPECIFICATIONS

	Wind 13 +	Wind 25.2 +	Wind 25.3 +
<b>Technical Specifications</b>			
Number of blades	2	2	3
Diameter	2,65 mts.	4,05 mts.	4,05 mts.
Material	Fiberglass and carbon fiber		
Direction of rotation	Counterclockwise		
Control systems	1. Electronic regulator 2. Passive by tilting		
<b>Electrical specifications</b>			
Alternator	Three phases permanent magnet		
Magnets	Neodymium		
Nominal Power	1000 W	3000 W	5000 W
Peak Power	1500 W	3500 W	6000 W
Nominal Voltage	220 Vac	220 Vac	220 Vac
RPM	@ 450	@ 400	@ 400
Controllers	Wind + MPPT Controller Multi voltage: 12, 24, 48 Vdc Current: Max. 125 Amp. Battery type: Flooded, AGM, Gel, Lithium Wind + Interface Direct water pump AC or DC (Grundfos SQFlex) Telecom Grid connection		
<b>Performance, wind speed</b>			
Working windspeed range	2 - 30 m/s	2 - 30 m/s	2 - 30 m/s
For turn on	3 m/s	3 m/s	3 m/s
For nominal power	12 m/s	12 m/s	12 m/s
For automatic brake system	14 m/s	14 m/s	14 m/s
Survival	60 m/s	60 m/s	60 m/s
<b>Physical specifications</b>			
Windturbine weight	41 Kg	93 Kg	107 Kg
Controller weight	30 Kg	30 Kg	30 Kg
Packaging Dimensions - weight	50 x 77 x 57 cm - 68 Kg 153 x 27 x 7 cm - 7 Kg	120 x 80 x 80 cm - 150 Kg 220 x 40 x 15 cm - 19 Kg	120 x 80 x 80 cm - 160 Kg 260 x 40 x 15 cm - 22 Kg
Total	0,22 m3 - 65 Kg	0,90 m3 - 169 Kg.	0,91 m3 - 182 Kg.
Warranty	3 years	3 years	3 years

# WIND + MPPT CONTROLLER

Wind + MPPT Charge controllers rectifies, controls and filter the energy produced by the wind turbine, and supplies energy suitable for battery charge, optimizing and generating the maximum possible energy output from the wind turbine, thanks to the Masimum Efficiency MPPT tracker.

Wind + wind turbine supplies three phases AC energy at a nominal voltage of 220 V.

Wind + MPPT Charge controller do all functionalities to rectify and extract the maximum power available from the wind, suplying DC energy at 12, 24 or 48 volts to the battery bank.

MPPT Charge Controller includes all security and control systems, with programable configuration and control available to all kind of wind conditions.

Ask you nearest installer for a bigger information about all this new functionalities of the Wind + MPPT Charge Controller.

## Wind Turbine Input

Input	Three phases AC
Connectors	MC4
Operating Voltage range	80 - 480 Vac
Maximum Voltage	510 Vac
Maximum power	3000 W (Wind 13+) / 6000 W (Wind 25+)
Braking Resistance	5000 W (Wind 13+) / 10000 W (Wind 25+)
Overvoltage protection	Varistors

## Output

Current	DC
Connectors	2 x M10
Output voltage	12 / 24 / 48 Vdc
Protection	Output protected with a 125 Amp fuse

## Operational

Stand by consumption	< 3 W
Max. Power consumption	< 30 W

## Connections

Anemometer	Yes, Optional
Communications	2 x RS485 / 1 x RS232
USB	1 x mini USB Type B female
Bluetooth	Optional with Bornay Bluetooth dongle
Emergency stop	Yes, Brake switch
Remote emergency stop	Yes, with external interruptor
Relay	Free potential relay Libre de potencial, COM, NO, NC
Digital auxiliary inputs	2

## Physical

Enclosure rate	IP20
Material	Aluminium
Color	RAL7035
Cooling	Forced ventilation
Mounting system	Wall installation
Dimmensions	508 x 597 x 190 mm
Packaging	585 x 660 x 275 mm - 0,10 m3
Weight	30 Kg (Wind 13+) / 35 Kg (Wind 25+)
Packaging Weight	31,5 Kg (Wind 13+) / 36,5 Kg (Wind 25+)

## WIND + INTERFACE

Interface Wind + rectifies, controls and filter the **energy produced by the wind turbine**, and supplies energy suitable for use in different applications:

- **Grid connection**, interface supply direct current to a grid connection inverter. Available with SMA grid connection inverters.
- **Water pumping**, interface supplies energy directly to the water pump, direct current to work with pumps like or alternate current at 230 V three phases to work with any kind of pump or motor.
- **Telecom**, this interface delivers direct current to supply directly to the telecom rectifiers or alternate current to the telecom inverters, depending of the telecom electronics manufacturer.

ModBus Communication, allows us a bi-directional communications between the different components of the system: for energy management, monitoring, parameters change ...

### Wind Turbine Input

Input	Three phases AC
Connectors	MC4
Operating Voltage range	80 - 480 Vac
Maximum Voltage	510 Vac
Maximum power	3000 W (Wind 13+) / 6000 W (Wind 25+)
Braking Resistance	5000 W (Wind 13+) / 10000 W (Wind 25+)
Oversvoltage protection	Varistors

### Output

Tipo de salida	CA / CC
Conectores	MC4
Rango de voltaje	80 - 380 Vac / 100 - 450 Vac
Protección	IGBT

### Operationals

Stand by consumption	< 3 W
Max. Power consumption	< 30 W

### Connections

Anemometer	Yes, Optional
Communications	2 x RS485 / 1 x RS232
USB	1 x mini USB Type B female
Bluetooth	Optional with Bornay Bluetooth dongle
Emergency stop	Yes, Brake switch
Remote emergency stop	Yes, with external interruptor
Relay	Free potential relay Libre de potencial, COM, NO, NC
Digital auxiliary inputs	2
Digital outputs	Pulse frequency output to synchronize with inverters that allows F-P power curves signal

### Physical

Enclosure rate	IP20
Material	Aluminium
Color	RAL7035
Cooling	Forced ventilation
Mounting system	Wall installation
Dimensions	399 x 494 x 190 mm 220 x 490 x 353 mm (Optional Telecom Rack)
Packaging	280 x 480 x 560 mm - 0,08 m <sup>3</sup>
Weight	14 Kg (Wind 13+) / 18,5 Kg (Wind 25+)
Packaging Weight	16,5 Kg (Wind 13+) / 21 Kg (Wind 25+)

## APPLICATIONS



RURAL  
ELECTRIFICATION



WATER  
PUMPING



TELECOM



GRID  
CONNECTION

# DOWNLOADS

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## Brochures

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### WIND + BROCHURE MARCH 2020

 [Catalogo Wind Plus-ENG Rev 0320.pdf](#) Size: 58.8 MiB

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### WIND + MPPT CHARGE CONTROLLER

 [MPPTWindPlusEng.pdf](#) Size: 6.3 MiB

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### INTERFACE BORNAY WIND PLUS ENG

 [InterfaceWindPlusEng.pdf](#) Size: 5.52 MiB

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## Towers


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### REQUERIMIENTOS TORRE / TOWER REQUIREMENTS WIND 13 +

 [Requerimientos Torre - Tower Requirements Wind 13.pdf](#) Size: 91.97 KiB

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### REQUERIMIENTOS TORRE / TOWER REQUIREMENTS WIND 25.2 +

 [Requerimientos Torre - Tower Requirements Wind 252.pdf](#) Size: 92.1 KiB

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### REQUERIMIENTOS TORRE / TOWER REQUIREMENTS WIND 25.3 +

 [Requerimientos Torre - Tower Requirements Wind 253.pdf](#) Size: 92.15 KiB

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### PLANO PLETINA FIJACIÓN BORNAY

 [Bornay-Pletina-Fijacion.pdf](#) Size: 143.4 KiB

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### PLANO PUNTERA BORNAY

 [Bornay-Puntera-torre.pdf](#) Size: 169.03 KiB

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### TORRE BORNAY P750

 [Bornay-Torre-P750.pdf](#) Size: 221.28 KiB

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### AUTOCAD PERSPECTIVA AEROGENERADOR BORNAY

 [Bornay-plano-perspectiva.dwg](#) Size: 268.38 KiB

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## Manuales

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### WIND 13+ MANUAL V1.8

 [Wind 13+ Manual v1.8.pdf](#) Size: 1.04 MiB

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### WIND 13+ MANUAL V1.5

 [Wind 13+ Manual v1.5.pdf](#) Size: 1.22 MiB

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### WIND 25.2+ MANUAL V1.8

 [Wind 25.2+ Manual v1.8.pdf](#) Size: 1.11 MiB

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### WIND 25.2+ MANUAL V1.5

 [Wind 25.2+ Manual v1.5.pdf](#) Size: 1.2 MiB

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### WIND 25.3+ MANUAL V1.8

 [Wind 25.3+ Manual v1.8.pdf](#) Size: 971.73 KiB

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### WIND 25.3+ MANUAL V1.5

 [Wind 25.3+ Manual v1.5.pdf](#) Size: 1.2 MiB

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### WIND + MPPT MANUAL V05-23

 [WIND + MPPT MANUAL V05-23.pdf](#) Size: 1.32 MiB

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### WIND + MPPT MANUAL V2.0

 [Wind+ MPPT Manual v2.0.pdf](#) Size: 1.75 MiB

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### WIND+ MPPT MANUAL V1.5

 [Wind+ MPPT Manual v1.5.pdf](#) Size: 1.79 MiB

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### WIND + INTERFACE MANUAL V05-23

 [WIND + INTERFACE MANUAL V05\\_23.pdf](#) Size: 1.1 MiB

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### WIND+ INTERFACE MANUAL V1.5

 [Wind+ Interface Manual v1.5.pdf](#) Size: 945.93 KiB

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