

# BUTTERFLY<sup>®</sup>

WIND POWER CONVERTER (WIND GENERATOR)

GREEK TECHNOLOGY

HORIZONTAL AXIS, DOWNWIND, VARIABLE SPEED  
OPERATION, WITH INTEGRATED ROTOR  
BLADES AND ELECTRIC GENERATOR,  
GEARLESS DRIVE TRAIN



Beautiful as a butterfly!

**Generator:**  
Multipole  
Permanent Magnet,  
Low Speed

**Nacelle:**  
Cast Aluminium

**Blades:**  
Carbon epoxy

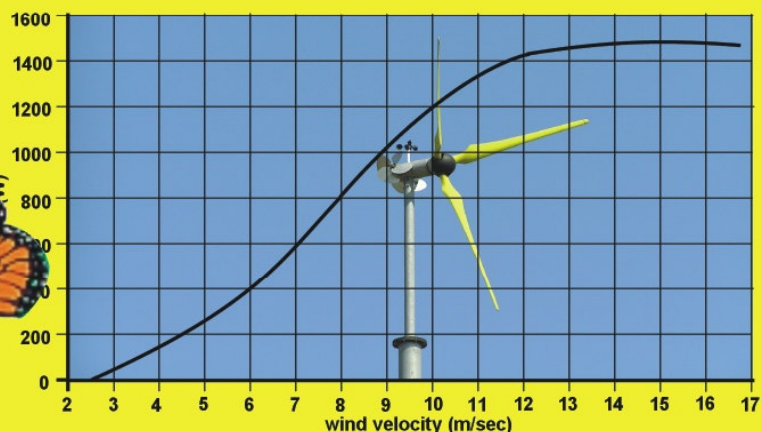
**Yaw System :**  
Via lateral propeller  
aerodynamic  
driven

**Output Voltage :**  
12, 24, 48 VDC /  
230 / 50 Hz



In the storm, BF uses  
the additional power of  
the wind for its protection,  
with the reduction  
of the swept area

POWER CURVE



## ENERGO TECH S.A.

RESEARCH AND DEVELOPMENT OF RENEWABLE ENERGY SYSTEMS

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# BUTTERFLY®

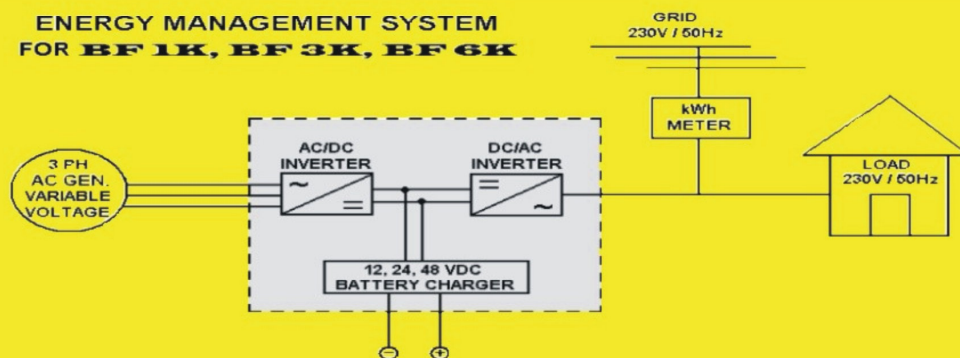
## WIND POWER CONVERTER (WIND GENERATOR)

### GREEK TECHNOLOGY

### TECHNICAL SPECIFICATIONS

TYPE :	<b>HORIZONTAL AXIS, DOWNWIND, VARIABLE SPEED OPERATION, WITH INTEGRATED ROTOR BLADES AND ELECTRIC GENERATOR, GEARLESS DRIVE TRAIN</b>		
<b>MODEL</b>	<b>BF 1 K</b>	<b>BF 3 K</b>	<b>BF 6 K</b>
<b>ROTOR</b>			
• Diameter / no of blades	3,0 m / 3 (three)	4,3 m / 3 (three)	4,6 m / 3 (three)
• • Blade / hub material	Carbon epoxy / inox steel		
• • Rated wind speed of rotation (rpm)	Variable of 30 – 800 rpm	Variable of 30 – 600 rpm	
• • Cut in wind speed (m/sec)	3 m/sec		
• • Power control	Active fluctuation of the surface through wind pressure, controlled by gas sprint piston		
• • Axis divergence (tilt)	0° from Horizontal level	4° from Horizontal level	
<b>GENERATOR</b>			
• • Type	<b>energotech bf</b> , synchronous, multi-pole, permanent neodymium magnet, variable speed		
• • Phases / Rotations	3 phases / 30 – 600 rpm		
• • Voltage per phase	10 – 50 VAC	20 – 80 VAC	
• • Insulation class	IP 23		
• • Maximum power	1,5 kW	3,5 kW	7 kW
<b>YAW SYSTEM</b>			
• • Type	Active, controlled in aerodynamic way through lateral blades and a reduced gear		
<b>AUTOMATIC STOP</b>			
• • Type	Electromagnetic through the electric field of the wind generator, controlled through the indicator panel.		
<b>TOWER</b>			
• • Description	It consists of two parts & 75 mm for BF 1K and & 180 mm for BF 3K & BF 6K, hot dip galvanizing, total height 12 m, based on the ground with 8 guywires with possibility of restoration.		
<b>CONTROL</b>			
• • Description	The produced current is led to a rectifying device where is turned into DC current. To the constant and stabilized current we connect the automatic control battery charger with wide range voltage input (10 – 125 VDC) 12, 24 ÷ 48 V and the inverter with output 230/50 Hz for connection to the grid or stand-alone operation. Farther details are following		

### ENERGY MANAGEMENT SYSTEM FOR BF 1K, BF 3K, BF 6K



**ENERGOTECH**