

# RENEWABLE ENERGY



## WIND TURBINE CONVERTER, SMALL SIZE

### NEW CHALLENGES IN WIND POWER GENERATION

The energy production from wind source is increasing worldwide and there is a peculiar interest for machines small having power for operation in parallel to the grid as well as for stand alone application.

EEl has undertaken development of solutions for the parallel connection of 20 - 55 kW wind turbines with synchronous permanent-magnet generator. This configuration allows to eliminate the gearbox as well as to supply energy even when the frequency is variable.

The control logic has been developed to manage in an active way the anomalous operation conditions (grid failure; strong winds) independently from the safety system adopted (up-hinge, pitch control, etc).

Main characteristics of EEl converters are:

Efficiency: IGBT Active Front End,

Reliability: Only thin film DC link capacitors and modular design for easier maintenance operations

Safety: self-protection functions

Quality in energy production: low THD(I), adjustable power factor.

Flexibility: state-of-the-art solution, developed and designed according to customer needing



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STATE OF THE ART IN TECHNOLOGY

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## 20kW CONVERTER

Cabinet Description	
Dimension (HxLxP):	1750x600x500 (mm)
Colour	RAL 7032 (Gray)
Protection Degree	IP54
Cooling	Air Cooling
Compliant with DK5940 for the connection to the ENEL grid (in Italy)	

Technical Parameters	
Grid side	IGBT Active Front End
Output Voltage	400Vac +/-10%
Output frequency	50/60 Hz + - 5%
THD(I)	< 5%
Generator Side	Diode Bridge Rectifier
Max Input Voltage	400 Vac
Nominal current	40 A
Nominal Power	20 kW
Overload	110% for 1' every 10'
Overcurrent Protection	Included
Thermal Protection	Included
Efficiency	93%
Communication Protocol	RS485 (GSM module as an option)



## 55kW CONVERTER

Cabinet Description	
Dimension (HxLxP):	1750x600x500 (mm)
Colour	RAL 7032 (Gray)
Protection Degree	IP23
Cooling	Air Cooling
Compliant with DK5940 for the connection to the ENEL grid (in Italy)	

Technical Parameters	
Grid side	IGBT Active Front End
Output Voltage	400Vac +/-10%
Output frequency	50/60 Hz + - 5%
THD(I)	< 5%
Generator Side	IGBT PWM Inverter
Max Input Voltage	400 Vac
Nominal current	100 A
Nominal Power	55 kW
Overload	110% for 1' every 10'
Overcurrent Protection	Included
Thermal Protection	Included
Efficiency	93%
Communication Protocol	RS485 (GSM module as an option)

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## 2WIND

The 2Wind is a new turbine solution resulting from the cooperation of two leaders in the global energy market: **EEl** and **Sicme Motori**. It is the optimum electrical solution through the combination of extensive design experience and successful installations. 2Wind offers the energy market an integrated, reliable and competitive solution for power generating turbines.



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