

SMART ENERGY STORE

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TECHNICAL INFO ON FEEDING ELECTRICITY INTO GRID

Windy Boys WB 1100 und 1700 are inverters for small and ultra-small wind energy systems for feeding power into the public grid and for use in stand-alone grids. Just like all SMA inverters, Windy Boys are compatible with all communication products and leave no margin of doubt with their high degree of protection (IP65) and SMA grid guard® monitoring system that can be used across the globe.



Achieving high yields from your wind energy system is only possible if the inverter is synchronized precisely with the output characteristic of the wind generator you are using. In contrast to photovoltaic applications, allowance must also be made for fast and constantly changing loads. The Windy Boy inverter features an operating mode designed specifically for wind generators, permitting optimum adjustment of power output to the generator characteristic of the ANTARIS wind turbine. By altering the Windy Boy's parameters, the ANTARIS wind turbine's settings can furthermore be optimised to suit locations exposed to strong or light winds.

The transformer-based concept, grid guard® automatic disconnection facility, automatic 50/60 Hz recognition capability and a wide range of country-specific approvals permit grid-connected operation of the ANTARIS wind turbine almost anywhere in the world at minimum installation cost and involving straightforward authorisation.

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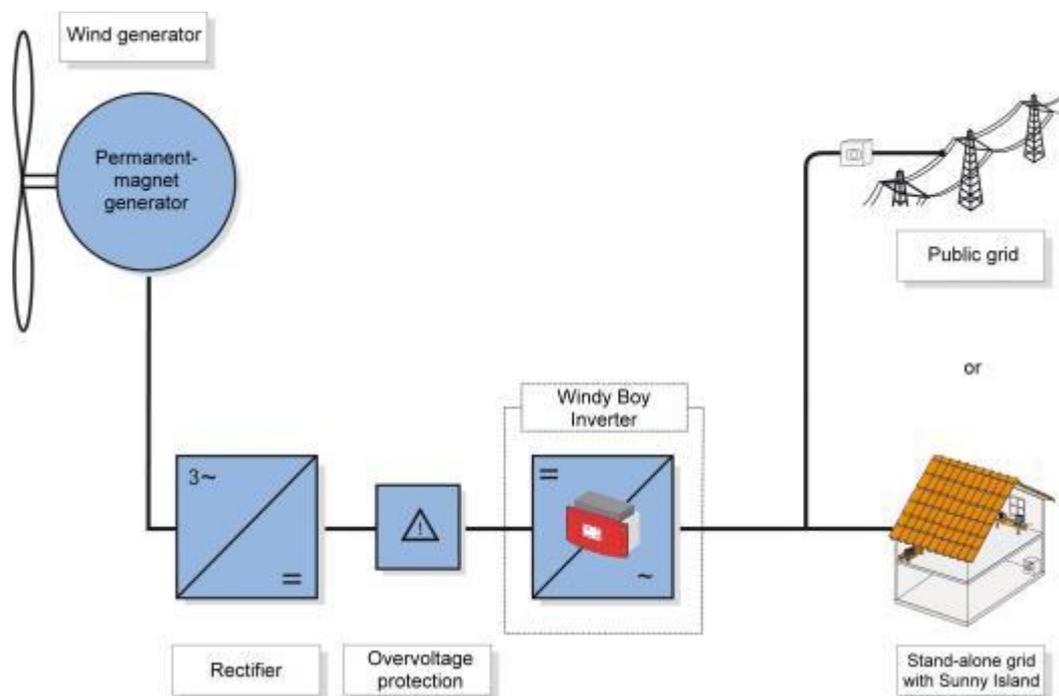
Inverter - communication

In addition to a display, the Windy Boy's standard interfaces (RS232 and RS485), SMA power line or wireless link provide numerous options for diagnosis, data visualisation, saving data and telemetric the ANTARIS. Compatibility with all SMA communication products permits a wide range of applications, including system monitoring via the Internet.

And this is how power is fed into the grid ...

The wind-generated energy is consumed within your own four walls without the need for interim storage in a battery. Excess energy is fed into the public grid and remunerated at the going rate.

The resultant potential savings are huge, particularly since there is no longer any need to invest in expensive and high-maintenance batteries. With the Windy Boy inverter, it is possible to operate grid-connected wind energy systems with permanent magnet generators and a downstream three-phase rectifier. The Windy Boy converts the rectified DC voltage from the generator, which varies with speed, into grid-compliant AC voltage.



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Stand-alone inverter, system manager of an autonomous energy supply

Together with the battery unit, the Sunny Island stand-alone inverter forms a standard AC grid into which all components, both power consumers and power generators, can be integrated. With this interconnected AC set-up and the Sunny Island as its system manager, SMA has developed a technological solution for supplying energy in remote areas at long distances from the public grid or for supplying emergency power in unstable grids.

For the first time, photovoltaic systems, ANTARIS wind turbines, diesel generators, water turbines or combined heat and power systems as well as normal 230 V loads can be connected on the AC side. This obviates the need for costly DC cabling and provides a maximum of flexibility, allowing a stand-alone grid of this type to be matched quickly to growing demand without major technical input. Developed by SMA and Braun Windtechnik, this technology makes it possible to supply electricity to a large proportion of the 1.6 billion people who still have to manage without it today.

- Independent energy supply
- Freely selectable energy sources
- Adaptation to any local situation

