

INVERTERS

grid connect applications

PROVEN
PROVEN ENERGY

What is a Power Inverter?

The power inverter is the smart piece of kit that makes a grid connection safe with your generation plant!

Wind, solar and hydro systems are all connected directly into the customers' main distribution (fuse) board via an ECM controller and Sunny/Windy Boy inverter.

The Proven ECM controller takes the turbines voltage and rectifies it before it is fed into the inverter for synchronisation with National Grid frequency and modulation.

The power that is fed into the distribution board is exactly the same as what the customer is provided with through the national grid.

What about power cuts?

If the national grid goes down then your wind, solar or hydro system must also not be allowed to feed power into your circuits. Simple reason is that if the grid went down and an engineer was sent out by the power company he might get fried by several thousand volts charging down the line from your system! Hence, the inverter disconnects the system automatically for safety.



**Above, an installation showing 2off SWR2500 (windy Boy) inverters mounted with a Proven ECM controller, isolator switch and DC disconnect.*



**Shown above is a Sunny (Windy) Boy 3kW inverter*

Windy Boy inverters show optimal performance: The efficiency goes up to 96%. The advantages of the modular design, serial connection of the modules - no diodes, reduced mismatching effects etc., increase the total efficiency of the PV another 1% to 3%. The Sunny Boy implies an optimal system efficiency.

Typical Installations

A typical Grid Connected Proven installation will use a Windy Boy inverter - either a combination of WB2500's or WB3000's.

WT2500 - 1off WB2500
WT6000 - 2off WB3000
WT15000 - 6off WB2500

Highest Safety

Protection of personnel and the system are important issues that SMA pays special attention to. The Windy Boy Family includes electric separation, isolation monitoring, surge voltage protection and naturally a CE mark. All Windy Boys are equipped with an automatic islanding detection (MSD) that complies with VDE0126.

Surge Voltage Protection

All Windy Boy inverters are equipped with thermally monitored varistors on the DC side. Once the varistors trip, the thermal monitoring displays the status.

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