



SMS Remote Control

The *Libellula* wind turbines are equipped with a remote control system, using a **Short Message Service** (SMS) designed to send and receive messages to/from a control terminal (mobile phone or other GSM connected equipment).

The system allows a very simple use even with a mobile phone that can be used in order to receive messages and reports and/or in order to send requests of data or commands.



Data

The system is able to send data concerning the turbine's operational status to the remote terminal. This function is automatic, but can be also activated on request.

Data are sent:

- » automatically in case of turbine's malfunction or other problems in the network.
- » after sending a request message from the remote terminal

The system can be set in order to send messages asynchronously to two phone numbers stored in turbine control system memory when an alarm event and/or anomaly occurs.

Send Commands

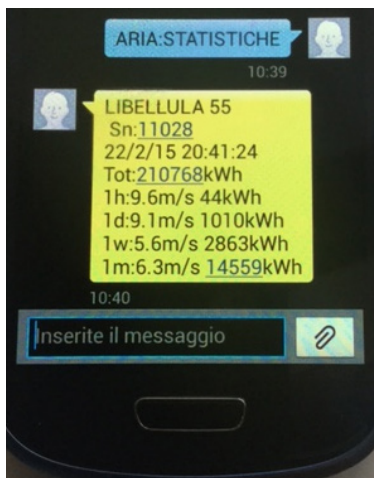
Commands can be sent from the remote terminal to the wind turbine.

Available commands:

- » STOP
- » START
- » RESTART

- » STATUS REQUEST
- » STATISTICS REQUEST

Two examples of SMS sent by the wind turbines are shown below.



Statistics SMS

- » Average wind speed and energy production during the preceding solar hour
- » Maximum wind speed and energy production during the preceding solar hour
- » Average (Max) wind speed and energy production during the last week
- » Average (Max) wind speed and energy production during the last month



Status SMS

Data displayed on the status message should be read as follows

- » Rpm rotore
- » Rotor rpm
- » Instant wind
- » Average wind
- » Turbulence
- » Wind direction
- » Generator's frequency
- » DC inverter voltage
- » Instant Power output to electrical power network
- » Average Power output to electrical power network in last minute
- » Power in last minute
- » Total Energy produced