



P.O. Box 4904
5604 CC Eindhoven, The Netherlands
Tel: +31.40.2814458 Fax: +31.40.2814119
Internet: www.ekopower.nl info@ekopower.nl
BTW/VAT nr: NL 0724.40.314.B01
KvK/CoC nr: 17087267

Subject : General Offer & description of wind/meteo monitoring system with [EKO21N](#) or [iBOX](#) datalogger module
WindOne: FIRST CLASS , AFFORDABLE highly accurate & reliable [Wind Energy/ Meteo MONITORING SYSTEM](#)

Application: Wind energy feasibility studies and power performance evaluation of wind energy projects.
with optional remote wireless GPRS/3G internet connection: **receive data files at your desk or server via FTP**

Version: dec 2013

Dear lady/sir,

Thank you for your interest in EKOPOWER wind/meteo monitoring systems.

EKOPOWER is the European leader for affordable, accurate and reliable wind monitoring equipment **for professional use** and **supplies the worlds first online field datalogger with wireless GPRS or 3G internet connection**, using the new ultra low power datalogger module EKO21N (with RS232 interface) or iBOX (with Ethernet interface) and both with optional remote wireless GPRS/3G internet connection (see www.ekopower.nl).

Please refer to separate datasheets for technical information and specifications (see also links in the spreadsheet)

We offer you the best solution to meet the requirements for your wind monitoring project.

The system meet the recommendations of the **International Standard** for Wind Turbine power performance testing

IEC 61400-12 & WMO no8 specifications. Ultra high resolution sample values for wind speed (0,01 m/s) result is unique highly accurate wind speed measurements. See details "Most significant Features" and "Know How" at our website.

EKOPOWER also supply also dataprocessing services and software.



The EKO21N or iBOX unit can easily be mounted to a DIN rail or with wall bracket in waterproof cabinet (easy replaceable for service)

For wind monitoring projects a mast is usual required. If you want EKOPOWER can arrange masts up to 80 meter, Including installation of the mast, together with our mast partners.

This cooperation result in a very high quality & cost effective system, supplied by experienced specialists.



The ultra low power system is designed for First Class Wind Monitoring for unattended operation at Remote Sites.

Can be powered by batteries (or solar power supply) also if a GPRS modem (for EKO21N) or GPRS/3G router (for iBOX) is present. The battery pack makes the system more reliable than with solar power supply and less sensitive for vandalism. A battery pack (lithium for high/low temperatures) is enough for some years of operation of the datalogger system and the GPRS/3G modem/router (with daily upload)! The system can be built in waterproof vandalism resistant waterproof cabinet (Protection Class up to IP66/67 and with optional siligagal bag) and clamps for mounting to mast (available for many sizes). The SD memory cards (standard 128 MB, up to 2 GB possible) are specified for high temperature range.

A laptop pc can be used for local connection to the EKO21N datalogger (by RS232 or USB) for reading values, adjusting parameters, reading status etc. For iBOX via ethernet cable to PC, using the embedded webserver.

The webserver is also available via GPRS/3G connection when the sim card in the 3G Router has static IP address.

The control software is very user friendly and not protected (data can be imported directly in Excel etc).

Easy to use dataprocessing software is supplied for making calculations and graphs The 128 MB SD memory card can store a lot of recordings of 10 min values, (including for all windinputs each 10 min: average, min, max and turbulence intensity and time & date) resulting in a capacity of **several years** of data! Status of power supply is indicated by LED on logger (voltage to read with laptop). The sample and record interval are adjustable, also too choose 10 minutes! Each station has its own identification number and text for location can be entered before use. A password is required to change the configuration- settings of the logger. The offered anemometer MAX40+ is a first class accurate and reliable, sold may thousands during many years! Heating is not required but a possible option, the same with the windvane .

A SMS message/email can be send when the battery is LOW.

For additional details, proposed configuration, prices and datasheets please refer to the appendix of this quotation. Configuration of the datalogger can be choosen standard 12 bits or 16 bits for high resolution system.

DATA PRESENTATION

Data can be read via computer monitor (also by graphs): current data or recorded values (adjustable average period).

Data can be imported directly in e.g. Excel for data processing . Basic data processing utilities are available from EKOPOWER.

Third party advanced data processing software is available (eg from windgrapher)

DATA TRANSFER & DATA COMMUNICATION options

There are several ways to transfer the recorded data to the office for dataprocessing:

- 1) A local (untrained) person replaces the memory card and send it the office
- 2) A local person can download the data into a laptop PC (by PC Card drive or serial usb interface for EKO21N)
- 3) If the GPRS/3G network (for datacommunication) is available automatic datatransfer (and system check) is possible.

EKOPOWER supplies optional hosting service for "Cloud" storage and/or webpages with [online graphs](#).

By using the Cloud the data can be downloaded from free private FTP server

(only available when logger is connected to internet: wired or wireless)

INPUTS: recommended inputs:

- **wind speed (standard 1-3, optional up to 8):** using the unique running average technique, including overvoltage/static discharge protection (1.5kW), appropriate for anemometer MAX40+ HIGH RESOLUTION 0.01 m/s, lightning protection unit (up to 20.000 A). Range 0-50 m/s, resolution 0,01 m/s (optional 0,001 m/s), achieved by special signal conditioning, which result in unbeatable ultra high accuracy for average values and standard deviation (16 bits calculation procedure)
- **wind direction(standard 1-2, optional up to 6):** including overvoltage/static discharge protection (1.5kW), pulsed excitation for saving power and determination of polar average (scalar average is not appropriate for wind direction, due to the discontinuity at 0 and 360 degrees!). This input is appropriate for windvane, lightning protection unit (up to 20.000 A). Range 0-360 degr resolution 0.1 degr **OPTIONAL:**
- **1 temperature range -30 to, +70 C, resolution 0,01 C , with optional humidity sensor and atm. pressure sensor.**
- **Other optional inputs possible (eg 4..20 mA, volt, counters, status,output power, current (AC/DC) , solar sensor , rain collector etc)**



SENSORS & TRANSDUCERS: wind speed sensors eg at 2/3/4/5/6 heights

- **Anemometer type MAX40+** supplied with standard calibration (typ. 0.2 m/s accuracy), with optional Measnet or NIST Calibration certificate (certified accuracy 0.1 m/s) OR any other anemometer, like Thies First class.
- **Wind vane type DIR21+** (or NRG 200P): a high-quality lightweight vane with a fast response with long life potentiometer, accuracy appr +/-4 degr., with stainless steel mounting materials.
- **Temperature (accuracy typ 0.2 C) TS21 in shield WS21**
- **Atm pressure sensor APS21 built in the EKO21N with typ. 1 hPa accuracy at 25 C**
- **Optional sensors possible like humidity, rain, power, current (AC/DC) etc.**

For detailed technical information about the datalogger and users worldwide please refer to our website and the [manual](#) (version 12).

For **GPRS/3G system (quad band system for world wide use)** a **sim cards** is required from local supplier and can be tested by us in advance if roaming is activated.

Also the used frequency of the GPRS provider must be specified at order: default 900/1800 system see also <http://www.gsmworld.com/>. The iBOX system can also be expanded with a WiFi module.

Price and Conditions

Price total	: see separate Excel price lists (total price depending on configuration) ex. VAT (BTW) (for export free of VAT!)
Price Validity	: 30 days (unless otherwise agreed)
Delivery	: freight to be specified
Origin:	: complete system:European Union
Time for delivery	: usual appr 4 weeks, with MEASNET certificate some weeks extra (after receipt of payment)
Terms	: METAALUNIE conditions, see attachment of e-mail
Guarantee	: 2 year carry-in for construction faults
Payment	: in advance

EKOPOWER is specialist in high quality, customized wind & meteo monitoring systems since 30 years and exported equipment all over the world.

If you have any question please contact us. We are looking forward to carry out your order!

Yours sincerely,

EKOPOWER Sales Team