

## **EKO21N :ultra low power Datalogger** **EKO21N-iP:wireless iP Telemetry system**

### ULTRA LOW POWER DATALOGGER SYSTEM FOR ANY MONITORING PROJECT (optional online via wireless GPRS)

*Besides standard solutions we supply tailor-made systems for specialised purposes*

POSSIBILITIES of the iBOX: see also online [Excel sheet](#) with possible items, links to datasheets and prices

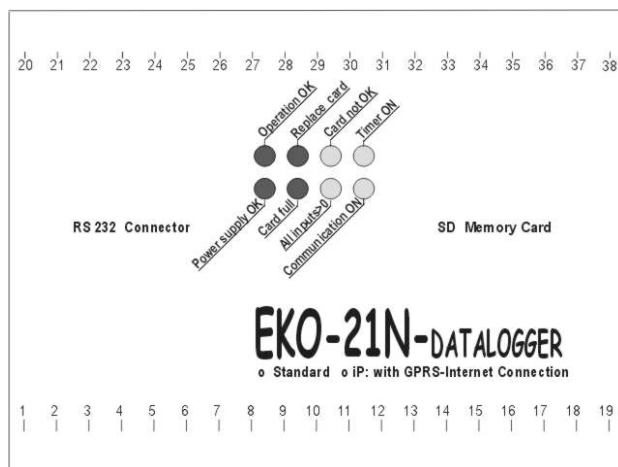
- > Log data from sensors, voltages, currents and/or serial input (multi channel)
- > Ultra low power consumption for remote or mobile applications
- > Simple operation via control software e.g. adjustable ranges and units for each input
- > SD-card memory for secure data storage or backup: Secure Digital (SD) Memory Card: 128Mb...2 Gb
- > EKO21N-iP: Access remote sensors over the internet or via wireless GPRS internet connection
- > EKO21N-iP: Instantaneous values automatically transferred to website and ( optional [online graphs](#))
- > EKO21N-iP: Data files automatically transferred by FTP to a specified server (via wireless GPRS connection)
- > Optional Alarms can trigger outputs andwith EKO21N-iP: send SMS text alerts

EKOPOWER supplies (for over 25 years) datalogger technology at excellent quality and low price.

The new EKO21N family of dataloggers (4th generation) is a very powerful system with **ultra low power consumption** (current typ 50-100 uA for standard configurations: up to 10 years running at a lithium battery pack)

The EKO21N has standard a serial interface (RS232 and optional USB cable and modem). By using the control software the setup & setting parameters, like sample interval can be adjusted. The EKO21N is supplied in different configurations, according to the **requirements of the user**: see specifications. Standard configurations are available e.g. 8 inputs of 4..20 mA and can be expanded up to 40 inputs.

EKO21N-iP with wireless GPRS **internet connectivity** it is possible to realise a wireless remote telemetry system over the internet: receive data files at your server and with optional [presentation of data at your website](#). Also alarms can trigger outputs and send alarm notification via SMS. The EKO21N family dataloggers is ideal for **remote or mobile** applications and for online monitoring of all kinds of (remote) processes, such as temperature monitoring of roads etc.



The EKO21N datalogger is ideal for monitoring projects such as:

- \* [Wind and solar monitoring projects](#)
- \* Remote telemetry
- \* Energy management
- \* Weather stations & meteorology
- \* Environmental data collection
- \* Traffic
- \* Safety
- \* Factory & industrial data acquisition
- \* OEM applications: we design according to your specific requirements (including your brand on the box !)

## TECHNICAL FEATURES of the EKO21N:

- > Inputs configurable for mix of 0/4..20 mA signals, volt inputs, status, temperature, frequency, mVolts, anemometer, wind vane etc.
- > Analog inputs standard 12 bits resolution, optional 16 bits resolution
- > Recording of instantaneous or average values with optional: min, max and standard deviation during each record interval.
- > Up to 5 Counter inputs/unit 12 bits (two 24 bits non-volatile counter for eg kWh pulses and 1 Event-logging input
- > Up to 2 Serial RS232 inputs (protocol according your specifications, eg Windsonic anemometer without moving parts )
- > Web hosting for EKO21N-iP optional available for demo & test purposes (for data files and/or online historical graphs & status)
- > Alarm outputs with optional SMS notification
- > Compact design : small (10 cm width) DIN rail cabinet
- > A wide range of sensor-excitations available (eg internal 24 V loop power for 4..20 mA sensors/transducers)
- > Sensors and Transducers according to your requirements: we also supply complete, ready-for-use systems (like wind, weather sensors)!
- > We supply a wide range of sensors and transducers with 4..20 mA, voltage or serial outputs
- > Ultra low power version EKO21N with RS232 control ideal for remote field applications  
with optional wireless GPRS internet connection and Alkaline or Lithium battery pack for appr 5-10 years.

## DESCRIPTION of EKO21N system

The EKO21N is an easy-to-use, accurate and reliable **ultra low power datalogger system with battery life up to 10 years, ideal for remote or mobile applications** and with versatile inputs :1 up to 40 analog & digital inputs and serial inputs (optional wireless inputs), see datasheet.

The EKO21N has standard a **RS232 serial** communication port (with optional **USB cable and modem**) and a Secure Digital (**SD**) **memory card** (128Mbyte up to 2 Gbyte) for data storage.

Type **EKO21N-iP** has **wireless GPRS internet connection**, see the details below.

The EKO21N dataloggers are an essential tool for state of the art measurements for e.g. meteorology, environmental monitoring, wind energy feasibility studies, but also for general purpose projects: **complete systems according your requirements and specifications!** Controlling and working with the EKO21N is made easy with the [EKO21N control software](#) (see also demo).

The EKO21N logger configuration (number and type of input channels) and the logger parameters ( like sample and record interval) are stored on the SD memory card. Besides the logger configuration also the recorded data is secure stored at the SD card.

The logger configuration (which is stored at the SD card) can only be changed by EKOPOWER or by authorized users by using EKO21N control software ( menu part: logger configuration , password available from your supplier). In this menu can be set:

- ranges and units (preset at factory: do not change as this must be according to the physical inputs boards and connected sensors/signals!!)
- alarms: software alarms via e-mail (or SMS using GPRS ) and hardware alarms: open collector output (if present in hardware)
- timing variables (do not change)

The **EKO21N-iP** can send (wireless) data files via FTP to a specified server -also with **ultra low power consumption-** at pre-adjusted intervals:

- file with instantaneous values and /or
- file with recorded values (eg average values with optional min/max/standard deviation during each record interval)

Moreover the data can be presented at a website with **online (historical) graphs**, using optional software running at the server, e.g. the server of your website or a PC with Windows XP-Prof, configured as server.

The online graphs can be created via:

- our server and copied into your own website/application (simply link, using copy and paste the graph)
- running at your own windows server

EKOPOWER can supply standard graphs or design special graphs and can assist you to setup the server and to install the graph software.

By using the EKO21N control software it is possible via RS232 / USB interface and/or via SD memory card slot (of notebook or SD reader):

### 1. To set the logger parameters like:

- time and date, sample and record interval
- internet upload parameters for EKO21N-iP: adjusting IP address of server (destination of data) , directory and the upload frequency of :
  - > instantaneous & last recorded values values (and status): after adjustable number of samples
  - > recorded values (data files): after adjustable number of record intervals

### 2. Read current and last recorded values, the status of the system and the present logger configuration.

The **optional wireless GPRS modem for EKO21N-iP** can be programmed in advance and loaded with the communication parameters in memory registers, like FTP server, passwords, data GPRS provider etc.

**NOTE:** A different (but similar) design of the EKO21N is the iBOX , which has Ethernet (no serial communication), with embedded webserver, see [seperate datasheet](#)

APPLICATIONS: measurement (industrial and remote field applications) e.g.:

\* *monitoring of machines*

\* *meteorology*

\* *process monitoring*

\* *building physics*

\* *energy management*

\* *research*

\* *feasibility studies*

\* *solar energy projects*

\* *renewable energy projects*

\* *environmental technology*

\* *water level monitoring*

\* *wind energy evaluation*

### MAXIMUM SPECIFICATIONS

(each system can be supplied according to customer specifications: ask for availability !)

#### Features

#### EKO21N datalogger family

#### MEMORY

memory card

Secure Digital (SD) INTERNAL or removable

memory size

Up to 2 Gb

data file format

ASCII (direct import in Excel)

#### INPUTS

analog inputs (or status)

Up to 16 standard or special\*) inputs in one unit

expansion units

2 (up to 16 extra channels /unit, total max 40)

#### RESOLUTION

counter inputs

Analog: standard 1 up to 8 ch 12 bits (free to choose nr of channels at order)

and/or 1 up to 32 ch 16 bits (free to choose nr of channels at order)

Option: 1 up to 5 (12bits) or 1 pc 24 bits non-volatile possible

(kWh counter)

Option

Event logging input

Adjustable 1 - 200 sec (special up to 1kHz)

#### SAMPLE INTERVAL

#### OUTPUTS

alarm outputs

up to 2 open collector ( max 2 SMS-

control outputs

up to 3 open collector

e-mail alarm

Option via ethernet or GPRS connection

sms alarm

Option with GSM/GPRS connection

#### RS 232 control

Modem /GSM

Option One way communication

GPRS modem : Data via FTP to server and  
online graphs & status

**EKO21N-IP**

#### POWER

Standard version

6-12 Volt DC via 220V Or 24 V DC

ultra low power-field version EKO21N

adaptor  
Option with Lithium Batteries

Special :

operating at one 3.6V  
lithium cell

Battery life (using Litium power pack for  
EKO21N field systems)

Up to 10 years

**Internal excitation for 4..20 mA**

Option

Backup battery

Option (for logger part rechargeabl

\*) **standard inputs:** 0/4..20 mA, voltage inputs, temperature inputs, **special** inputs for all kinds of sensors and signals (also mV inputs) **on request**

TEMP. RANGE

-40 to +85 C (industrial / field version)

**For remote applications: an ultra low power system EKO21N with battery life up to 10 years, running on one lithium battery pack! (ask for availability) v7 uly 2009**