EKOPOWER Measuring & Monitoring Systems for Energy & Environment

iBOX: iP Datalogger / Telemetry system

with Embedded Webserver & TCP/iP Connectivity Options

including: embedded TCP/IP-FTP-SMTP-HTTP & optional wireless WiFi (local) or GPRS/3G/WiMAX/UMTS router

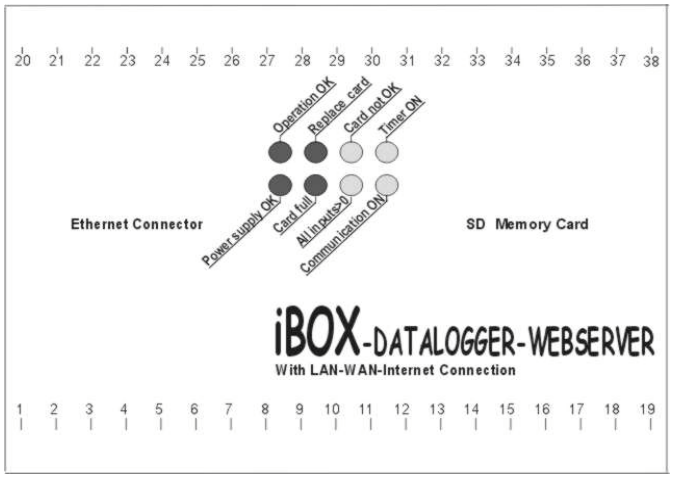
ONLINE INFORMATION FOR ANY MONITORING PROJECT

Besides standard solutions we supply tailor-made systems for specialized purposes

POSSIBILITIES of the iBOX: see also online excel sheet with possible items, links to datasheets and prices
> Simple operation via your web browser, also remote over the internet , see online demo of embedded webserver
> Access remote sensors over the internet or via optional Wireless WAN (via /GPRS/3G/UMTS) connection
> Log data from sensors, voltages, currents and/or serial input (multi channel)
> SD-card memory for secure data storage or backup: Secure Digital (SD) Memory Card: 128Mb...2 Gb
> Instantaneous values automatically transferred to server or website with optional online graphs or with webdisplay
> Data files automatically transferred by FTP to a specified server (either via ethernet or wireless 3G/GPRS connection)
> Integral online status display or via built-in webserver (either via ethernet or wireless GPRS connection)
> Optional Outputs can be controlled via the user-interface (via webserver)
> Optional Alarms can trigger outputs and send email alarm messages (may be forwarded as SMS text alerts)
> Web hosting optional available for demo & test purposes (for data files and/or online historical graphs & status)
> Measure & Control up to 3 switches via internet, using your browser, see demo
> Built-in web server for setup & reading values & status and for (protected) setup & setting logger parameters (like sample interval)

EKOPOWER supplies (for over 25 years) datalogger technology at excellent quality and low price.
The new iBOX family of iP dataloggers (4th generation) -with internet connectivity options- it is possible to realize a telemetry & control system over the internet: receive data files at your server and with optional *presentation of data at your website* control outputs via your browser, alarms can trigger outputs and receive alarm notification via email etc.
For remote or mobile applications a Ultra Low Power (ULP) version is availble with optional wireless (GPRS/3G/UMTS) router (Wireless WAN structure).

The iBOX has standard Ethernet (LAN), with optional WiFi or Internet (WAN/WWAN) connection and has a built-in webserver for reading values & status and for (password protected) setup & setting parameters, like sample interval and ranges & units for each input. The iBOX 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.



The *iBOX* datalogger is ideal for monitoring & control projects such as:
* *Wind and solar monitoring projects*
* Remote control & telemetry
* Energy management
* Weather stations & meteorology
* Environmental data collection
* Traffic
* Safety
* Factory & industrial data acquisition
* Embedded M2M applications
* OEM applications: we design according to your specific requirements (including your brand on the box !)

DESCRIPTION of iBOX system

The iBOX is an easy-to-use, accurate and reliable **internet enabled datalogger system** with built-in web server with versatile inputs :1 up to 40 analog & digital inputs and serial inputs (optional wireless inputs).
The iBOX **has integrated internet connectivity** with Ethernet connector and a **SD memory card** (128Mbyte up to 2 Gbyte) for data storage. Optional possibility: wireless GPRS/3G router for mobile or remote applications in Wireless WAN.

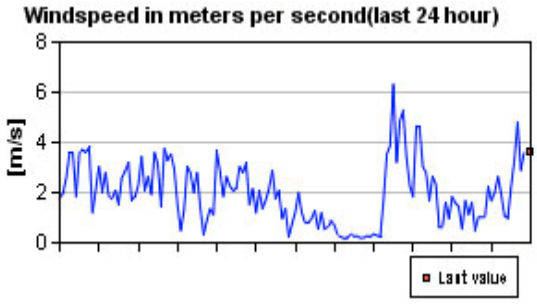
It is an essential tool for state of the art iP measurements for e.g. meteorology, environmental monitoring, wind energy feasibility studies, but also for general purpose projects: **complete systems according your requirements and specifications can be supplied**!
Controlling and working with the IBOX is made easy with the built-in webserver (with help functions).

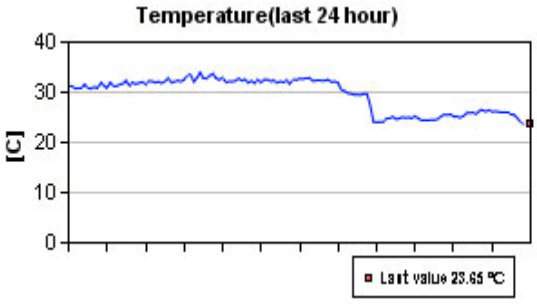
The iBOX logger configuration (number and type of input channels) and the logger parameters (like sample and record interval) are stored on the SD memory card. Besides the logger configuration also the recorded data is secure stored at the SD card.

The logger configuration (which is stored at the SD card) can only be changed by EKOPOWER or by authorized users by using special iBOX control software wich enable to setup the system and enter logger parameters quick and easy::
- ranges and units (preset at factory: according to the physical inputs boards and connected sensors/signals!!)
- optional alarms: software alarms via e-mail (or forwarded as SMS) and hardware alarms: open collector output (with optional DIN rail relais)
- sample interval, record interval, upload interval, iP address for server iP address of iBOX itself etc.
- moreover up to 3 switches vcan be controlled via the webserver (also remote over the internet)

The iBOX can send automatically data files via FTP to a specified server(e.g. the server of your website) 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***:
- which can be created at 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.
Example of standard graphs:





By using the embedded webserver of the iBOX it is possible (by using your browser): see demo
1. to set the logger parameters like:
- time and date, sample and record interval
- internet upload parameters: 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 (with optional online graphs)
  > 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

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

* *monitoring of machines*	* *energy management*	* *renewable energy projects*
* *meteorology*	* *research*	* *environmental technology*
* *process monitoring*	* *feasibility studies*	* *water level monitoring*
* *building physics*	* *solar energy projects*	* *wind energy evaluation*

NOTE: A different (but similar) design of the iBOX is the "sister" EKO21N, which has no Ethernet but serial RS232 / USB communication with ultra low power consumption (ideal for remote sites). EKO21N with optional GPRS internet connection (called EKO21N-iP) can send datafiles wireless to a specified server, with ultra low power consumption. By using a small battery pack it will operate during appr 5-10 years with one upload/day. Ask your supplier about the availability.

TECHNICAL FEATURES of the iBOX:

> 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 (one 24 bits non-volatile counter for eg kWh pulses) and 1 Event-logging input
> Up to 1 Serial RS232 inputs (protocol according your specifications, eg Windsonic anemometer without moving parts)
> Alarm outputs with E-mail/SMS notification (3 outputs with remote control possibility)
> 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 ideal for remote field applications with optional wireless GPRS/3G internet connection .

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

MAXIMUM SPECIFICATIONS

Features	**iBOX system**
MEMORY	
memory card	Secure Digital (SD)
memory size	Standard 128MB Up to 2 Gb
Data file format	ASCII (direct import in Excel)
INPUTS Optional wireless	
Analog inputs (or status)	1 up to 16 standard or special*) inputs in one unit
Expansion units	2 (up to 16 extra channels /unit, total max 40)
RESOLUTION	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)
Counter inputs	Option: 1 up to 5 (12bits) or 1 pc 24 bits non-volatile possible (kWh counter)
Serial inputs	Option : 1 (up to 115.2kb) (with polling)
Event logging input	Option
SAMPLE INTERVAL	Adjustable 1 - 200 sec (special up to 1kHz)
OUTPUTS	
Alarm outputs	up to 2 open collector (2 email/sms) Optional power relais at DIN rail
Control outputs	up to 3 open collector
e-mail alarm	Option via ethernet or 3G/GPRS connection
sms alarm	Option with GSM/GPRS connection
ETHERNET/INTERNET	Optional WiFi wireless Bridge or GPRS/3G wireless router
Web server	*embedded*
POWER 1)	
Standard version	6-12 Volt DC via 220V Or 24 V DC
ultra low power-field version	adaptor Option with Battery
Internal excitation for 4..20 mA	Option
Backup battery	Option (for logger part rechargeable)

*) **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)

1) For remote applications: an ultra low power system with battery life up to 10 years, running on one battery pack with optional GPRS/3G router ,which will be switched on only during data transfer!

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