

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 specialised purposes

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

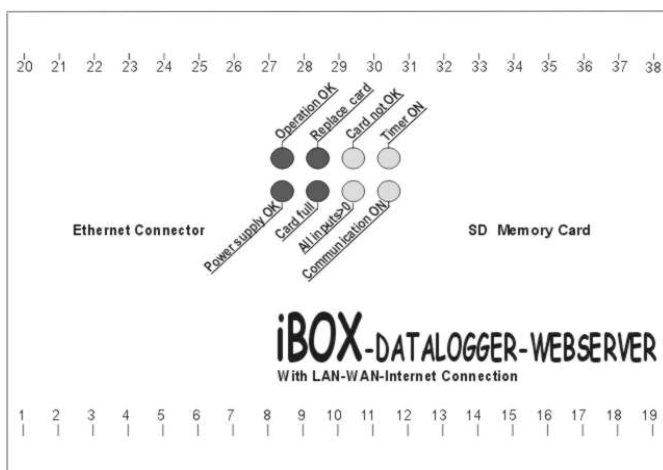
- > *Simple operation via your web browser, also remote over the internet, [see online demo of embedded webserver](#)*
- > *Access remote sensors over the internet or via optional Wireless WAN (via /GPRS/3G/UMTS) connection*
- > *Log data from sensors, voltages, currents and/or serial input (multi channel)*
- > *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 [webserver](#) for setup & reading values & status and for (protected) setup & setting logger parameters (like sample interval)*
- > *Quick and easy setup of the system (including setting logger parameters) by using the [iBOX control software](#)*
- > *For remote or mobile applications an Ultra Low Power (ULP) version is available with optional ULP wireless (GPRS/3G) router*

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 an Ultra Low Power (ULP) version is available 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 parameters can be changed via the embedded [webserver](#). See also : [demo](#)
Moreover by using the [iBOX control software](#) the setup of the system (including setting additional parameters) can be carried out quick and easy, like:

- ranges and units (password protected, 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 relays)
- sample interval, record interval, upload interval etc.
- iP address for server, iP address of iBOX itself etc.
- moreover up to 3 switches van be controlled via the webserver, also remote over the internet (if implemented).

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 status and values (which can be displayed at website with optional [online graphs](#) or with [webdisplay](#))
- file with recorded values (eg average values with optional min/max/standard deviation during each record interval)

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.

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*

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	
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)
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	
Web server	Optional WiFi wireless Bridge or GPRS/3G wireless router <u>embedded</u>
POWER 1)	
Standard version	6-12 Volt DC via 220V adaptor Or 24 V DC
ultra low power-field version	Option with Battery / solar module
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	
TEMPERATURE RANGE	
Humidity	-40 to +85 C (industrial / field version) up to 100% (non condensing in waterproof cabinet with dessicator)

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!