

EASIDATA Mark4 Data Logger

Features

- Comes with 4, 8 or 16 channels
- Real time clock
- 64K, or 256K memory capacity
- 16 bit precision
- True vector wind analysis every second
- High level programming language
- EasiAccess database/reporting software included.

Applications

- Industrial monitoring
- Agricultural research
- General meteorology
- Pollution monitoring
- Water resource management

Options

- 2 line alpha-numeric LCD Display
- Customer specified data collection schedules
- Various communications are available to suit any requirement. eg, radio link, modem, digital GSM modem, CDMA and others.
- A wide range of sensors

Due to its advanced functionality, the Mark 4 is particularly suited to complex, real time analysis of sensor inputs, fast data collection, and user programming for variable data collection and analysis requirements.

Sensor Interface

The Mark 4's 16 bit resolution simplifies connection to a wide range of sensors with varying signal levels, and gives high precision measurements for every sensor. Up to 16 sensor inputs can be read simultaneously.

Memory

64K, or 256K RAM memory provides up to 80,000 readings, facilitating high intensity data collection, or long intervals between data collections. Data is stored in secure battery-backed data memory, split into four independent areas. Normally daily summaries are stored in memory area 1, hourly data in area 2, and more detailed data in the other two areas. If the system software should fail, (due to a lightning strike nearby for instance) then within a minute an automatic circuit will restart the logger, ensuring that data storage is continuous and uninterrupted. The internal real time clock ensures that the current date and time are always stored with the data, even if the logger is switched off between data collection periods.



Internal Data Calculations

The Mark 4 can store up to 216 data types, including real time calculations on sensor inputs (eg. current sensor readings, means, maximums, minimums, true vector wind analysis, evaporation rate etc). New commands can be sent to the logger at any time to reconfigure its storage operation. These commands are written in a simple high level language which includes IF, THEN, ELSE and other powerful constructs. You can program the logger to meet your specific requirements now, and re-program it when those requirements change in the future.

Windows Software (included)

Envirodata's EasiAccess Windows software supports the Mark 4 and features graphing of data, database, reporting and Weather Station management functions.

The transfer rate and data range are selected using Envirodata's EasiAccess program which is supplied with every EasiData Mark 4 logger. Data collected is in a standard text or ASCII form which also allows easy export to spreadsheets or other application programs.

EasiAccess software will operate on computers 486, Pentium and above, utilising Windows 95, 98, 2000 & NT. It allows the operator to store, and report/graph user-selected data and sensor ranges along with viewing real-time data as it occurs.

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In addition to transferring stored data to a computer, you can view current sensor readings at any time on your computer screen, or on an optional logger LCD display.

Special Purpose Programs

Because of its large memory capacity and the flexibility of its programming environment, you are able to install quite complex special purpose programs in the MK 4 logger. One such program is AirData. This program analyses wind speed and direction each second and provides true vector analysis: the unambiguous net effect of the wind, output in both polar and rectangular coordinates in real time.

Specifications

Hardware

CPU	68HCII Microprocessor
Real Time Clock	32 KHz Crystal, accurate to better than 5 minutes per year
EPROM	Non-volatile 27C256 32k CMOS EPROM
EEPROM	Non-volatile 512 Bytes (special data)
Program RAM	Battery backed CMOS static RAM, 32K
Memory RAM	Battery backed CMOS static RAM, 32K, 64K, 128K or 256K
Communications	RS232C standard interface
RS232c Interface	6 pin weatherproof connector
Sensors	Connected by weatherproof 3 pin polarised locking connectors
Solar Charger	2 pin polarised weatherproof locking connector
Power Switch	Withdrawable transport plug to stop/start system
Status Indicator	High Intensity LED with 3 distinct flash rates
Technology	Low power High speed CMOS

RS232c Interface

Configuration (Terminal)	Standard pins: 2, 3, 6, 7, 20 for DTE
Baud rate	One of 300, 1200, 2400, 4800, 9600
Interface parameters	Software selectable: normally 8 bit, no parity, one stop bit
Protocols	Xon/Xoff
Hardware interface	Connects to terminal or modem device through suitable cable
Software interface	Any Terminal program or Envirodata's START4 software

Power Supply

Battery	6.0 ampere hour internal rechargeable lead acid gel cell. Operates station for 15–30 days depending on sensors connected. Optional solar panel charger operates station indefinitely. Internal regulator to prevent overcharging. Adaptor to allow recharging from conventional wall chargers
Supply Voltage	Nominal 12 volt battery, 10 to 13 volt operating range

Charging	Recharges to 70% in 30 hours at 200mA
Charger Input	14 to 20 volts at up to 200mA
Power Consumption (excluding sensors)	Less than 10mA in normal mode
Sensor Consumption	Typically 0.1 to 5.0mA per sensor

Software

General	Basic operating system held in EPROM Special parameters held in EEPROM Rest of operating system in RAM
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Data

Data memory	64K or 256K
Data storage	20,000 or 80,000 values
Data resolution	16 bit resolution (+/- 32,767) counts
Memory Partitions	1 to 4 memory areas, independently set to any size
Maximum count rate	Simultaneously on all channels 0–60Hz
Sample period	1 second to 10 minutes
Scaling Factors	Basic equation programmed and selected by software
	Individually set for each channel; ranges: For "Lin" multiply 1–32,000; divide 1–32,000
	Offset 0–32 000; 21 different user defined formats

Protection Features

Voltage Indicator	Software device, 8 bit resolution
LED Indicator	Flash rates: Every 1 second – communications mode Every 2 seconds – normal operation Every 4 seconds – low battery
Transport plug	Prevents accidental or unauthorised switch off
Power Consumption	Power limit to sensors and to any one sensor Internal Battery fuse Communications mode (high power usage) automatically disconnected after timeout period without use

Output

Output Format	Fully software controllable standard ASCII file format. Data is stored chronologically with 24 hour clock and calendar date
Processing Routines	Fully software definable 12 different processing routines currently available
Independence	One processing routine can be specified for each storage command handling up to seven sensors all with the same service times

Sensors

Connectors	3 pin polarised weatherproof
Positive	5–7 volts DC at 5mA maximum
Signal	0 to 5 volts D.C., 15 bit resolution

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