

EnviroMon Data Logging System

EnviroMon is a complete data logging system. It automatically measures and records temperature, humidity and other parameters and provides warnings when readings go out of range.

EnviroMon is both flexible and economical: you can start off just recording a single temperature and expand to monitor up to 40 sensors spread around a site.

EnviroMon works on a network so that sensors can be placed 100s of metres apart. Measurements from the network can be read off the display on the logger, sent to a printer, downloaded to a PC or even displayed live on a website. Using a modem (radio, telephone or GSM) the loggers can be monitored remotely.

The system offers these important benefits:

It carries out routine measurements automatically leaving staff to get on with their job
It sounds an alarm when there is a problem: if there is no alarm, no action is required
It maintains a permanent record of measurements, so that you can prove compliance with appropriate legislation
It provides timely warnings of equipment failure, minimising the risk of spoiled stock
It is easy to install and use.



The system has the following features and options:

- Operation with a PC or stand-alone (computer required for installation)
- Mains powered, with battery backup
- Can print reports directly
- Can be operated via a modem, network or internet for remote monitoring
- Can publish data live to a website
- Wide range of alarm options
- Fahrenheit or Celsius temperature reporting
- Highly accurate sensors

The EnviroMon Network:

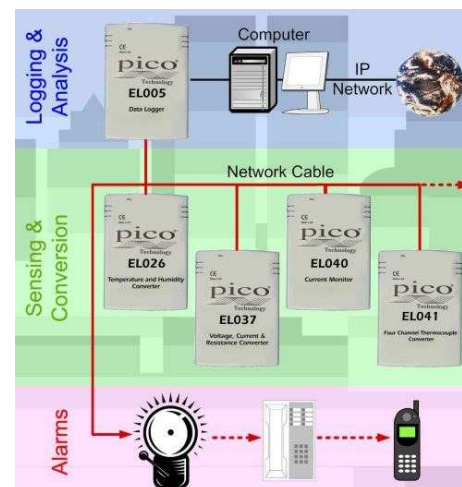
The [network](#) is a four-wire cable that carries power and data between the logger, converters and optional equipment like remote alarms.

The logger can be attached anywhere along the network cable.

For most applications, low cost telephone style cable is used. This allows operation with 400 metres of network cable between the logger and the furthest sensor.

With thicker cable, this distance can be increased to a kilometre or more.

Cables can be purchased in standard lengths; alternatively you can make your own.



EnviroMon Data Loggers

At the heart of the EnviroMon system is the data logger, which takes readings at intervals from one minute to four hours. The logger can send reports to a printer at specified intervals, or can transfer data to a computer for long term storage and graphical analysis. The logger contains back-up batteries so that it continues recording if the mains power fails. There are two types of logger to choose between: the EL008 which has a display, and the EL005 which does not.

The loggers can be used in a number of ways:

- As data logging system. The logger collects data unattended for a period of time (say a week), it is then connected to a PC to download the data for display, storage and analysis.
- As a [remote data logging](#) system. The logger(s) are sited remotely (either at a fixed location or on a truck, ship etc) and data is downloaded periodically to a local PC via a modem (radio, telephone or GSM) or even via the internet.
- As a data acquisition system. The logger is permanently connected to the PC, so that readings can be monitored real time on the PC screen. Data can also be published to a website - see [dynamic web pages](#) for more information

- As a stand alone monitoring system (EL008 only). Once configured readings are displayed on the built in screen and / or sent to a printer. This approach is useful if you just want the system to warn when a reading goes out of range and you do not want to use a computer.

EL005 Data Logger

The EL005 logger has no display or buttons, and so must be connected to a computer or printer to view the data.

The EL005 has a larger memory than the EL008 (250,000 samples compared to 15,000) and long life internal rechargeable batteries.

This combination makes it ideal for recording data over long periods of time.

The EL005 does not have an internal alarm: if you need an audible alarm, connect an [EL006 audible alarm unit](#) to the network.

The EL005 logger has internal re-chargeable batteries. These batteries are kept topped up whilst mains power is available, and will keep the system running for up to 72 hours during a mains power failure. The EL018 dialler adapter/battery backup can provide power to the system for much longer periods in the event of mains failure.



EL008 Data Logger

The EL008 data can be collected then downloaded to a computer, alternatively it can be used as a stand alone data logger.

If used as a stand-alone logger, you will still need to connect it to a computer (via the serial port) during the installation and set up process. However, once the system is operational, you can disconnect the computer and control the logger using the built in buttons and display.

If your logger is connected to a computer, there are many more facilities available to you. An [overview of the software](#) is available.

The display on the logger will continuously cycle through each of the sensors, displaying the name and reading, followed by the date and time. You can hold the display on a particular sensor. The display will then show only the reading for that location.

The EL008 logger has a battery compartment for 4xAA batteries: these batteries will keep the system running for up to 24 hours during a mains power failure. The optional [EL018 dialler adapter/battery backup](#) can provide power to the system for much longer periods in the event of mains failure.



EnviroMon Data Logger Specifications

| Logger | EL008 with display | EL005 without display |
|---------------------------------|-------------------------------------|-----------------------------|
| Sampling rate | 1 to 240 minutes per sample | 1 to 240 minutes per sample |
| Max number of readings | 15,000 | 250,000 |
| Internal alarm | 55dB | None |
| Max number of converters | 10 | 10 |
| Max number of sensors | 30 | 40 |
| Support for GSM / SMS | No | Yes |
| PC Connection | Serial port | Serial port |
| Power | 12V DC (mains adaptor) | 12V DC (mains adaptor) |
| Battery backup | 4 x AA alkaline cells(not supplied) | Internal rechargeable cells |
| Price | £299.00 | £149.00 |

EnviroMon Converters and Sensors

EnviroMon takes readings from a number of sensors. These sensors are connected to converters that transform the analogue signals from the sensor into digital signals: these digital signals can then be transmitted reliably and accurately to the logger over long or short distances.

Which converter is best for your application depends on what you wish to measure. This page describes the available converters and sensors.

- [Temperature and Switch position converter and sensors](#)
- [Thermocouple converter](#)
- [Humidity / temperature converter](#)
- [General purpose converters](#)
- [Current monitoring](#)

3 Channel Converters (Temperature and Switch Position)

EL001 Three channel converter

The three channels on the EL001 can measure any mix of temperature or switch position. The following sensors are available, all have 5 meter leads for connecting to the converter.

Price £99.00

EL029 Switch position / door switch sensor

- The switch module is commonly used to monitor whether a door is open or closed. In normal use a (supplied) magnet is attached to the door to be monitored and the EL029 to the door frame. Alternatively an external microswitch (not supplied) can be wired in. The display on the logger reports either 'Open' or 'Closed'.
- **EL015 Temperature sensor** The EL015 is a precision resistive sensor suitable for measuring temperature from -30°C to +70°C. Unless the temperature you need to measure is outside this range this sensor represents the best choice for measuring temperature.



(The EL001 is not waterproof)

| | EL015 Temperature | EL029 (Door) switch |
|-------------------|-----------------------------|---------------------------------|
| Range | -30 °C to 70 °C | Closed / Open |
| Resolution | 0.01 °C | NA |
| Accuracy | ± 0.3 % (0 to 70 °C) | NA |
| Dimensions | 6 mm by 50 mm on a 5 m lead | 72 x 45 x 28 mm with a 5 m lead |
| Price | £18.00 | £20.00 |

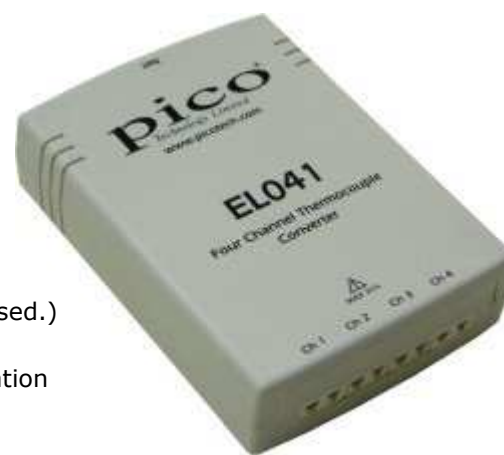
EL041 Thermocouple Converter

The 4 channel EL041 thermocouple converter is designed to measure a wide range of temperatures with any [thermocouple](#) that uses a miniature size thermocouple connector.

Featuring built-in cold junction compensation (CJC), the EL041 has an effective temperature range of -270 to 1820°C (The actual temperature range depends on the thermocouple being used.)

In addition to temperature measurement, the cold junction compensation can be switched off to enable the EL041 to measure ±60mV signals.

Note: The EL041 is designed to work only with the EL005 logger.



| | |
|---------------------------|---|
| Number of Channels | 4 |
|---------------------------|---|

| | |
|--------------------------------|--|
| Thermocouples Supported | B, E, J, K, N, R, S, T or mV |
| Voltage Input Range | ±60 mV |
| Resolution | 15 bits + sign |
| Accuracy | Thermocouples: ±(0.5 °C + 0.3 % of type K reading) Millivolts: ±0.3 % |
| Conversion Time | 1 second |
| Overload Protection | ±10 V |
| Input Connector | Mini-thermocouple plugs |
| PC Connector | via EnviroMon network |
| Operating Temperature | 0 to 70 °C (20 to 30 °C for quoted accuracy) |
| Operating Humidity | 25 to 75 %RH |
| Price | £199.00 |

Humidity / Temperature Converter

EnviroMon can measure humidity/temperature using the EL026 converter and EL030 temperature and humidity sensor. Each EL030 is calibrated for high accuracy measurements.

| Sensor | Range | Accuracy | Resolution |
|-------------|--------------------------|--|------------|
| Temperature | -20 to 70 °C | ± 0.2 °C (0-70 °C) +/- 0.3 °C (rest of range) | 0.01 °C |
| Humidity | 0 to 95 % non-condensing | ± 2.5 % (0 to 90 %) | 0.01 % |
| Price | £199.00 | | |



Current Monitoring

EL040 Current Monitor

With the present drive towards energy efficiency the EL040 will find uses both at home and in industry.

In industry currents can be monitored enabling more accurate costing to be placed on different tasks and find out exactly where a high percentage of current consumption is being made.

Armed with this information decisions can then be made on methods of reducing or eliminating this in-efficiency, so saving money.

The EL040 enables an EnviroMon network to monitor three AC current signals.

AC current clamps or current transformers are used to provide an input to the EL040. The EnviroMon can then be used to monitor current consumption or produce alarm conditions when consumption rises above or falls below preset limits.



| | |
|------------------------------|---|
| Number of channels | 3 |
| Sensor type | Current clamp |
| Max. input voltage | 1 V RMS AC |
| Input Impedance | >1 MΩ |
| Frequency range | 20 Hz to 1 kHz |
| Accuracy | ± 1 % (0 to 200 mV)* ± 2.5 % (200 mV to 1 V) |
| Operating temperature | 0 °C to +70 °C |
| Input connector | 4 mm banana |
| Price | £249.00 |

- When using a 200 Amp current clamp which measures 1 Amp per mV.

TA011 300 Amp AC Current Clamp

Not being powered by batteries the TA011 is ideally suited to applications where current consumption is being monitored over long periods of time.

Removing the need to check the condition of the batteries regularly, makes the TA011 ideally suited for use with the EL040 current monitor when monitoring current consumption over months or even years.

| | |
|---|------------------------------|
| Current range | 0.1 A to 300 A RMS AC |
| Accuracy: 0.1 to <50A 50A to 300A | $\pm 3.0 \%$ $\pm 2.0 \%$ |
| Output voltage | 1 mV AC per 1 Amp AC |
| Operating temperature | 0 °C to 50 °C |
| Maximum conductor size | 29 mm |
| Price | £50.00 |

