EL-USB-1

Temperature Data Logger with USB Interface

This data logger measures and stores up to 16,382 temperature readings over a -35 to +80°C (-31 to +176°F) range. The user can easily set up the logging rate and start-time, and download the stored data by plugging the module straight into a PC's USB port and running the purpose designed software under Windows 98, 2000 or XP. Data can then be graphed, printed and exported to other applications. The data logger is supplied complete with a long-life lithium battery, which will last for at least 1 year. Correct functioning of the unit is indicated by a flashing red, green and orange LEDs. The data logger is protected against moisture to IP 67 standard when the protective cap is fitted.

- -35 to +80°C (-31 to +176°F) Measurement Range
- USB Interface for Set-up and Data Download
- 2 User-Programmable Alarm Thresholds
- Bright Red, Green and Orange LED Indication
- Replaceable Internal Lithium Battery
- IP 67 Protection

WINDOWS CONTROL SOFTWARE

Easy to install and use, the control software runs under Windows 98, 2000 and XP (Home and Professional Editions)*. It allows the user to set up and download any EL-USB-1. The latest version of the control software may be downloaded from *www.lascarelectronics.com*.

DATA LOGGER SET-UPS

- Logger Name
- °C, °F
- Logging Rate (10s, 1m, 5m, 30m, 1hr, 6hr, 12hr)
- High and Low Alarms
- Start Date and Start Time

ORDERING INFORMATION

	Stock Number
Standard Data Logger (Data Logger, Software on CD, Battery)	EL-USB-1
Replacement Battery	BAT 3V6

SPECIFICATIONS

Specification	Min.	Typ.	Max.	Unit
Measurement range	-35 (-31)		+80 (176)	°C (°F)
Internal resolution		0.5 (1)		°C (°F)
Accuracy (overall error)		±1 (±2)		°C (°F)
Logging rate	every 10s		every 12hr	-
Operating temperature range	-35 (-31)		+80 (176)	°C (°F)
1/2AA 3.6V Lithium Battery Life	1*			Year

* @ 25°C and 1m logging rate

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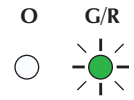
LED FLASHING MODES

EL-USB-1 features 2 LEDs.
- The first LED flashes orange (O) to indicate a problem condition on the EL-USB-1.
- The second LED flashes green or red (G/R) to indicate alarm level status.
  It will flash red when the logged temperature has exceeded a Low or High alarm level.

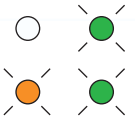
By default latching is enabled, so the red LED will continue to flash, even after the logged temperature has returned to normal. The red LED will effectively have latched into its alarm condition. This feature ensures that the user is notified that an alarm level has been exceeded, without the need to download the data from the logger.

Latching can be turned on via the control software. The red LED will then no longer continue to flash after the logged temperature has returned to normal. Instead, the green LED will then flash.

The LEDs on EL-USB-1 will flash in one of the following ways, assuming latching is turned off.



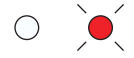
Green LED flashes twice every 10 seconds
- The data logger is not currently logging, but is primed to start at a later date and time.



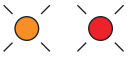
Green LED flashes once every 10 seconds
- The most recently logged temperature is between the Low alarm and High alarm levels.

Green and Orange LEDs flash once every 10 seconds
- The most recently logged temperature is between the Low alarm and High alarm levels, but the data logger's memory is full, so no more readings are stored.

NB: If latching is enabled, then a flashing green LED indicates that no alarm condition has ever been logged.

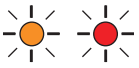


Red LED flashes once every 10 seconds
- The most recently logged temperature is equal to or lower than the Low alarm level. (if latching is enabled, then the alarm condition may have been triggered a while ago)

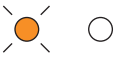


Red and Orange LEDs flash once every 10 seconds
- The most recently logged temperature is equal to or lower than the Low alarm level (if latching is enabled, then the alarm condition may have been triggered a while ago), but the data logger's memory is full, so no more readings are stored.

Red LED flashes twice every 10 seconds
- The most recently logged temperature is equal to or higher than the High alarm level, (if latching is enabled, then the alarm condition may have been triggered a while ago).



Red and Orange LEDs flash twice every 10 seconds
- The most recently logged temperature is equal to or higher than the High alarm level (if latching is enabled, then the alarm condition may have been triggered a while ago), but the data logger's memory is full, so no more readings are stored.

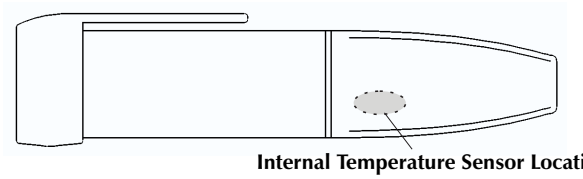


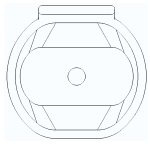
Orange LED flashes once every 60 seconds
- The battery is reaching the end of its useful life, as its voltage has dropped below 3.3V.
- Data logging continues until the battery voltage drops below 2.8V.

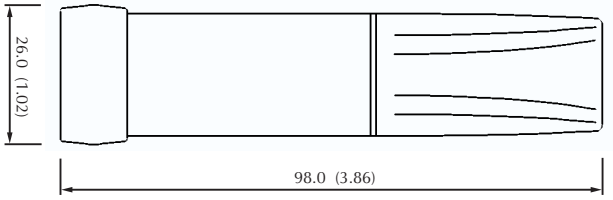
No LEDs flash
- The logger is not being used.

or
- The logger was logging, but has now shut down due to a flat battery (voltage has dropped below 2.8V). Plug the data logger into the PC and run the control software to find out which condition applies.

DIMENSIONS All dimensions in mm (inches)







BATTERY REPLACEMENT

We recommend that you replace the battery every 12 months, or prior to logging critical data.

The EL-USB-1 does not lose its stored readings when the battery is flat or when the battery is replaced; the data logging process will however be stopped and cannot be re-started until the battery has been replaced and the logged data has been downloaded to PC.

Only use Sonnenschein 3.6V 1/2AA lithium batteries (SL-750/S). Check with your supplier that the battery you are ordering is 'press fit' and is not fitted with solder tags. Before replacing the battery, remove the EL-USB-1 from the PC.

Note:
Leaving the EL-USB-1 plugged into the USB port for longer than necessary will cause some of the battery capacity to be lost.

WARNING: Handle lithium batteries carefully, observe warnings on battery casing. Dispose of in accordance with local regulations.