EL-USB-VAC

High Accuracy Thermistor Glycol Probe Data Logger with LCD screen



- -40 to +125°C (-40 to +257°F) measurement range
- Stores over 32,000 readings
- EasyLog software available as a free download
- Logging rates between 1 second and 12 hours
- High contrast LCD, with four digit temperature display function
- Immediate, delayed and push-to-start logging
- User-programmable alarm thresholds
- Status indication via red and green LEDs
- Supplied with a thermistor glycol probe

This standalone data logger measures and stores more than 32,000 temperature readings over a -40 to +125°C (-40 to +257°F) range and is supplied with a high accuracy thermistor glycol probe. See page 4 for more details.

The user can easily set up the logger and view downloaded data by plugging the data logger into a PC's USB port and using the free EasyLog software. Data can then be graphed, printed and exported to other applications for detailed analysis.

The high contrast LCD can show a variety of temperature information. At the touch of a button, the user can cycle between the current, maximum and minimum stored values for temperature.

The data logger is supplied with a lithium metal battery which typically gives two year's logging life.

SPECIFICATIONS

Measurement range	-40 to +125°C (-40 to +257°F)
Accuracy (logger error)	±0.1°C (±0.2°F)
Accuracy (probe)	See 'Temperature Probe Accuracy' on page 4
Resolution (logger)	0.5°C (1°F)
Resolution (software)	0.1°C (0.2°F)
Logging rate	User selectable between 1 second & 12 hours
Operating temperature range	-35 to +80°C (-31 to +176°F) (data logger only)
Battery Life	2 years (at 25°C and 1 minute logging rate, LCD on)
Readings	32,510
Dimensions	135 x 24 x 21mm (5.31 x 0.94 x 0.82")

ACCESSORIES

BAT 3V6 1/2AA	Replacement battery
EL-DATAPAD	Handheld Programmer and Data Collector
EL-P-VAC	Replacement thermistor glycol probe
EL-PROBE-EXTENDER-5.0M-TP	Probe extension (5.0m)
EL-PROBE-EXTENDER-10.0M-TP	Probe extension (10.0m)

INCLUDED IN THE BOX

BAT 3V6 1/2AA	Battery
EL-P-VAC	Thermistor glycol probe
EL-LCD WALL BRACKET	Mounting Bracket
CAL-TEMP-UK	Temperature Calibration certificate

CALIBRATION CERTIFICATES INCLUDED

The EL-USB-VAC comes with a calibration certificate issued at 2 and 8°C, using reference equipment which has been calibrated by a UKAS/NIST accredited laboratory and using apparatus traceable to national or international standards. For more information, please see **www.lascarelectronics.com**.

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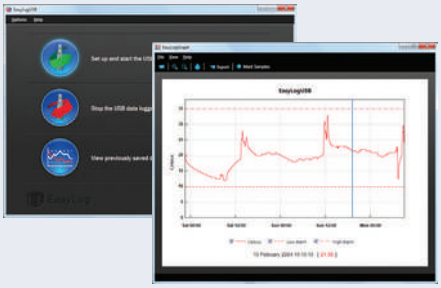
EasyLog

EASYLOG SOFTWARE

Lascar's EasyLog control software is available as a free download from www.easylogusb.com. Easy to install and use, the control software is compatible with 32-bit and 64-bit versions of Windows 7, 8 & 10. The software is used to set up the logger, download, graph and annotate data or export in Excel, PDF and jpeg formats.



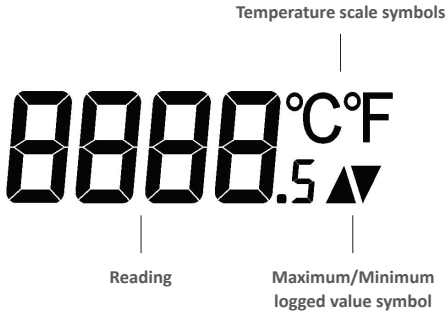
The software allows the following parameters to be configured:

- Logger name
- Measurement parameter (°C or °F)
- Logging rate (user selectable between 1 second and 12 hours)
- High and low alarms
- Immediate and delayed logging start

Download the latest version of the software free of charge from www.easylogusb.com

DISPLAY STATUS INDICATION

The EL-USB-VAC features a high contrast LCD which shows logged temperature values using seven segment numbers, along with annunciators. The LCD can also show information regarding the logging status.



The LCD shows three different recorded readings, which can be cycled through using the built-in push button. The most recent logged temperature, maximum logged temperature and minimum logged temperature can be displayed.

To increase battery life it is possible, via the software, to turn off the display or have it active only after pressing the button.

Display	Logger Status	Explanation
dS	Delayed Start	This is shown when the button is pressed and the logger is set to start at a specific date and time
PS	Push to Start	This will flash when the logger is setup for 'Push to Start' logging
log	Logging	This is shown when the logger is running in 'LCD off' mode, and the button is pressed. The display clears again after a short period
---	Stopped	If the logger has not been set to log and the button is pressed, three dashes are displayed for a short period
CLr ▲▼	Clear Max/Min	This indicates that the maximum and minimum stored values have been cleared after pressing the button for a few seconds. This will not work if the probe is disconnected or the logger is connected to a USB port
Prob	Probe has been disconnected	The flashing message 'Prob', followed by a number or letter, will be displayed if the logger is logging and the probe becomes disconnected. The number/letter confirms the type of probe that should be connected

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LED STATUS INDICATION

EL-USB-VAC features two LEDs:

- The first LED flashes **red** to indicate that the EL-USB-VAC is in an alarm condition. It will flash when the logged temperature has exceeded a Low or High alarm level.
- The second LED flashes **green** to indicate that the EL-USB-VAC is not in an alarm condition.

Using EasyLog software it is possible to set the alarm to remain active even if the reading has returned to normal, in which case the alarm LED will continue to flash red. This 'Hold' feature in the software ensures the user is notified that at some point an alarm level has been exceeded, without needing to download the data.

Using the control software it is possible to set a delayed alarm. In this mode the logger has to see multiple consecutive alarms before being activated.

Hold is enabled by default, and can be turned off via the control software. The red LED will then only flash whilst the logger is in an alarm condition. When the temperature returns to normal, the green LED will flash.

	**Green single flash (every 30 seconds)** The data logger is not currently logging, but is primed to start at a later date and time (delayed start)
	**Green single flash (every 10 seconds)** The data logger is currently logging. No alarm
	**Red single flash (every 10 seconds)** The data logger is currently logging. Low alarm
	**Red double flash (every 10 seconds)** The data logger is currently logging. High alarm
	**Green single flash (every 20 seconds)** The data logger is currently logging. Low battery
	**Red single flash (every 20 seconds)** The data logger is currently logging, however the battery is running low. Low alarm
	**Red double flash (every 20 seconds)** The data logger is currently logging, however the battery is running low. High alarm
	**Green double flash (every 20 seconds)** The data logger is full and has stopped logging
	**Red & Green single flash alternately (every 20 seconds)** The data logger is full and has stopped logging. High or low alarm
	**No LEDs flash** The data logger is stopped, the battery is empty or there is no battery
	**Red Triple flash (every 10 seconds)** The data logger is currently logging, but the probe has been disconnected

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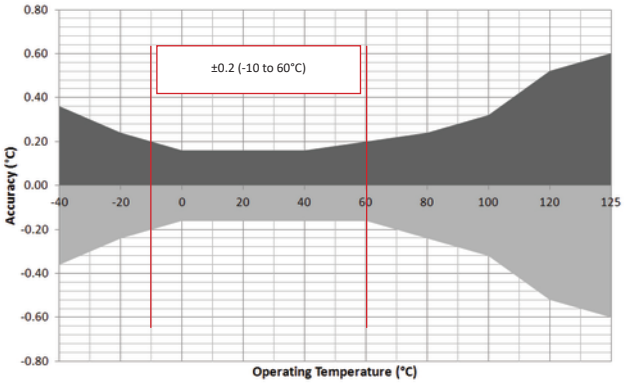
THERMISTOR PROBE

The probes supplied with the EL-USB-VAC uses a precision thermistor to sense the temperature. Alternative lengths and probe options are available. The probe type is selected in the control software and should match the label on the probe in use.

Alternatively, the probe length may be extended by the use of a suitable extension cable. We recommend twisted pair with high quality 3.5mm jack socket/plugs for best results.

The thermistor is externally isolated from the probe tip.

THERMISTOR PROBE ACCURACY



Supplied Thermistor Glycol Probe
Part number: EL-P-VAC

BATTERY INFORMATION

Replacement
We recommend that you replace the battery annually, or prior to logging critical data. Only use 3.6V ½AA lithium metal batteries. The data logger does not lose its stored readings when the battery is discharged or replaced; however, the data logging process will stop and will not resume until the battery is replaced and the logger restarted by EasyLog software or an EL-DataPad.

Before replacing the battery, remove the data logger from the PC. Please note that leaving the data logger plugged into the USB port for extended periods will cause some of the battery capacity to be lost.

Passivation
If left unused for extended periods of time lithium metal batteries, including those used in the EasyLog range of data loggers, naturally form a non-conductive internal layer preventing them from self-discharge and effectively increasing their shelf life. When first installed in the data logger, this may cause a momentary drop in the battery voltage (the Transient Minimum Voltage) as the internal layer is broken down, resulting in the data logger resetting. Inserting the batteries in the data logger and leaving it connected to a PC for about 30 seconds will remove this layer. After this, remove and re-install the batteries to reset the data logger. Overall battery life will not be affected.

WARNING

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