

# EL-USB-CO

## Carbon Monoxide (CO) Data Logger with USB Interface

### FEATURES

- 0 to 1000 ppm CO measurement range
- Stores up to 32,510 measurements
- User-programmable warning threshold with bright visual and audible warnings
- USB interface for set-up and data download
- Expected sensor life: 4 years
- Supplied with replaceable internal lithium battery and Windows control software

This standalone data logger measures and stores up to 32,510 Carbon Monoxide (CO) readings over a 0 to 1000 ppm measurement range and -10 to +40 °C (14 to +104 °F) operating temperature range. The user can easily set up the logging rate and start time, and download the stored data by plugging the data logger into a PC's USB port and running the purpose designed software under Windows 2000, XP and Vista (32-bit). The data can then be graphed, printed and exported to other applications. The data logger is supplied complete with a long-life lithium battery. Data is stored in non-volatile memory and is retained when the battery is empty. A bright red LED will flash and a buzzer can sound when a preset warning level has been exceeded.



### ORDERING INFORMATION

Standard Data Logger (Data Logger, Software on CD, Battery)	EL-USB-CO
Replacement Battery	BAT 3V6 1/2AA

### IMPORTANT SAFETY WARNING

DO NOT ATTEMPT TO USE THE EL-USB-CO WITHOUT READING AND UNDERSTANDING THE DOCUMENTATION. CARBON MONOXIDE MONITORING IS A COMPLEX PROCEDURE. IF THERE IS ANY DOUBT AS TO THE SAFETY OR APPLICATION - STOP! CONSULT A QUALIFIED EXPERT.

The EL-USB-CO is a professional measuring instrument, designed to record Carbon Monoxide (CO) gas levels for later analysis. It is not an alarm/safety/warning device and should not be used in this capacity for the following reasons:

1. The lights and sound emitted by the EL-USB-CO to indicate a high level of CO do not provide adequate warning to those in the surrounding area that a high level of CO has been recorded.
2. The battery life of the EL-USB-CO during audible and visual indication of a high level of CO will rapidly diminish and will therefore only be active for a short period of time.
3. The EL-USB-CO takes a sample reading at intervals as set by the user for recording/monitoring/analysis purposes. Dangerous levels of CO will not register with the device until a sample reading is taken.
4. Due to the limitations of the device as a professional instrument, it is left to the user to set the light and sound alarms indicating the presence of CO. Therefore the instrument can be set up to provide NO form of warning.

Carbon Monoxide is poisonous. It is a clear, colorless gas that has no smell or taste and can be lethal even in very low concentrations. It can injure or kill people and animals who are not adequately warned of its presence.

In areas where the safety of humans and animals is a concern we insist that a domestic or industrial CO detector/alarm, designed to a nationally approved quality standard, with features such as a high decibel alarm or siren and a clear visual warning, specifically designed to provide adequate warning of dangerous CO levels, be installed, used and maintained.

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Specifications	Minimum	Typical	Maximum	Unit
Measurement range	3		1000	ppm CO
Internal resolution		0.5		ppm CO
Accuracy (overall error)	±2 ppm	±6%		
Repeatability		±3		%
Long Term Drift			5	% / year
Zero Offset		±2		ppm CO
Response time (to reach 90%)		1		Minute
Logging rate	every 10 s		every 5 min	-
Operating temperature range (15-90 %RH, non-condensing)	-10 (+14)		+40 (+104)	°C (°F)
Operating pressure range	900		1100	mBar
1/2AA 3.6V Lithium Battery Life			3*	Month

\*with battery supplied, 5 minute logging rate, 25 °C ambient temperature, audible warning disabled, reading < 10ppm CO

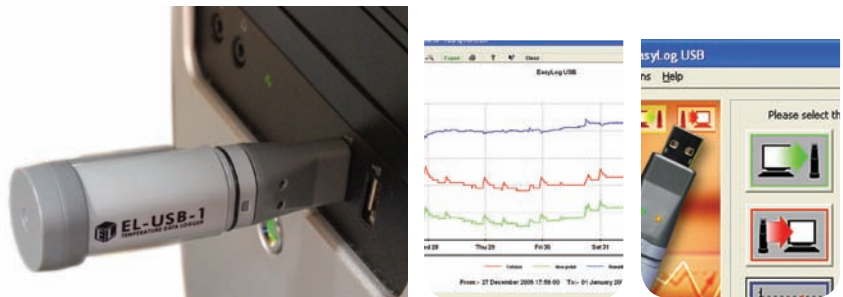
### EL-WIN-USB (CONTROL SOFTWARE)

Lascar's EasyLog USB control software is supplied free of charge with each data logger. Easy to install and use, the control software runs under Windows 2000, XP, Vista & 7. The software is used to set-up the data logger as well as download, graph and export data to Excel.

The software allows the following parameters to be configured:

- Logger name
- Logging rate (10s, 30s, 1m, 5m)
- Warning threshold
- Start date and start time

The latest version of the control software may be downloaded free of charge from [www.lascarelectronics.com](http://www.lascarelectronics.com)



On inserting a battery the Red then Green LED will flash in turn for approximately 2 min, while the logger stabilises. Do not connect to the USB port of a computer until this has finished.

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### LED FLASHING MODES

EL-USB-CO features a red and a green LED.

By default hold is disabled. In this mode the red LED will no longer continue to flash after the logged reading has returned to normal from an alarm condition.

Hold can be turned on via the control software. In this mode the red LED that indicates an alarm condition will continue to flash, even after the logged reading has returned to normal. 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.

The LEDs on an EL-USB-CO will flash in one of the following ways, assuming hold of the warning threshold has been turned off in the EL-WIN-USB control software:

		<b>Green single flash (10 seconds)</b> The data logger is currently logging. No alarm.
		<b>Green single flash (20 seconds)</b> The data logger is currently logging. No alarm. However, the battery is low and should be replaced before logging important data.
		<b>Green single flash (30 seconds)</b> The data logger is not currently logging, but is primed to start at a later date and time (delayed start).
		<b>Green double flash (20 seconds)</b> The data logger is full and has stopped logging. No alarm.
		<b>Red single flash (10 seconds)</b> The data logger is currently logging. Alarm.
		<b>Red/Green single flash (20 seconds)</b> The data logger is full and has stopped logging. Alarm.
		<b>No LEDs flash</b> The data logger is stopped, the battery is empty or there is no battery fitted.

### AUDIBLE WARNING

The audible warning will sound once per second when the warning threshold has been exceeded. To disable the warning, remove the cap from the data logger.

The audible warning will sound once every 60 seconds when there is a low battery condition. This indicates that the battery must be replaced.

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### DIMENSIONS

All dimensions in mm (inches)



### BATTERY REPLACEMENT

We recommend that you replace the battery every 3 months, or prior to logging critical data.

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

Only use 3.6V 1/2AA lithium batteries. 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-CO from the PC.

#### **Note:**

Leaving the EL-USB-CO 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.

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### THE EASYLOG USB RANGE

Each EL-USB data logger features the direct-to-USB connection and easy-to-use functionality that the range is known for. The range comprises of the data loggers detailed in the following table:

Part No	Function	Range	Accuracy (overall error)		Readings	Battery	Battery Life*
			Typ.	Max.			
EL-USB-1	Temperature	-35 to +80 °C (-31 to +176 °F)	±1°C (±2°F)		16,382	3.6V ½AA	1 Year
EL-USB-1-PRO	High Temperature	-40 to +125 °C (-40 to +257 °F)	±0.2°C (±0.4°F)	±0.5°C (±1°F)	32,510	3.6V ¾AA	3 years
EL-USB-1-RCG	Temperature with rechargeable battery	-20 to +60 °C (-4 to +140 °F)	±1°C (±2°F)		32,510	Lithium Ion	1 month (rechargeable)
EL-USB-2	Temperature, humidity & dew point	-35 to +80 °C (-31 to +176 °F) 0 to 100%RH	±0.5°C (±1°F) ±3%RH	±2°C (±4°F) ±6.0%RH	16,382	3.6V ½AA	1 year
EL-USB-2+	Increased accuracy temperature, humidity & dew point	-35 to +80 °C (-31 to +176 °F) 0 to 100%RH	±0.3°C (±0.6°F) ±2.0%RH	±1.5°C (±3°F) ±4.0%RH	16,382	3.6V ½AA	1 year
EL-USB-2-LCD	Temperature, humidity & dew point with LCD	-35 to +80 °C (-31 to +176 °F) 0 to 100%RH	±0.5°C (±1°F) ±3.0%RH	±2°C (±4°F) ±6.0%RH	16,379	3.6V ½AA	1 year
EL-USB-2-LCD+	Increased accuracy temperature, humidity & dew point with LCD	-35 to +80 °C (-31 to +176 °F) 0 to 100%RH	±0.3°C (±0.6°F) ±2.0%RH	±1.5°C (±3°F) ±4.0%RH	16,379	3.6V ½AA	1 year
EL-USB-3	Voltage	0 to 30V d.c.	±1%		32,510	3.6V ½AA	1 year
EL-USB-4	Current loop	4 to 20mA	±1%		32,510	3.6V ½AA	1 year
EL-USB-5	Counter, Event & State	N/A		±3 secs/24 hrs	32,510	3.6V ½AA	1 year
EL-USB-TC	Thermocouple (J, K and T-type) K-type probe included	-200 to +1350°C (-328 to +2462°F) (K-type)	±1°C (±2°F)		32,510	3.6V ½AA	6 months
		-200 to +1190°C (-328 to +2174°F) (J-type)					
		-200 to +390°C (-328 to +734°F) (T-type)					
EL-USB-TC-LCD	Thermocouple with LCD (J, K and T-type) K-type probe included	-200 to +1350°C (-328 to +2462°F) (K-type)	±1°C (±2°F)		32,510	3.6V ½AA	6 months
		-200 to +1190°C (-328 to +2174°F) (J-type)					
		-200 to +390°C (-328 to +734°F) (T-type)					
EL-USB-CO	Carbon monoxide	0 to 1000ppm <b>NOT A LIFE SAVING DEVICE</b>	±6ppm		32,510	3.6V ½AA	3 months
EL-USB-CO300	Carbon monoxide	0 to 300ppm <b>NOT A LIFE SAVING DEVICE</b>	±4ppm		32,510	3.6V ½AA	3 months
EL-USB-LITE	Low cost temperature	-10 °C to +50 °C (+14 to +122 °F)	±1°C (±2°F)		4,080	CR1620 Lithium coin cell	1 month
EL-USB-RT	Real-time temperature & humidity monitor	-20 to +70 °C (-4 to +158 °F)	±1.5°C (±3°F) ±4.5%RH		7 days	N/A	N/A

\*Depending on logging rate, ambient temperature, and use of alarm LED

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