

# EasyLog Data Logger Series



## Overview

EasyLog model EL-USB series products are a line of low cost, compact, battery-operated data loggers with built-in memory and USB interface. Each product in the line offers a specific measurement function and range (see table below). Features shared by all EasyLog data loggers are:

- Programmable high and low alarm thresholds.
- All data is recorded to built-in, non-volatile memory. EasyLog data loggers do not lose readings when the battery is discharged or replaced.
- Automatic time and date stamping of logged data.
- Program the logger to begin recording immediately, or at a specific date and time.
- Bright, multi-color LEDs indicate status and alarm conditions during logging.
- Built-in USB interface for easy setup using any PC.
- Built-in, replaceable lithium battery (provided).
- Intrinsic isolation for voltage and current measurements.
- Removable cover protects the USB interface.
- Removable clip secures the instrument during transport or deployment.
- EasyLog application software for data logger setup, data download, and analysis.

## EasyLog Products for Any Application

From temperature and humidity to carbon monoxide trending, there's an EasyLog data logger that's right for you (click on page number to jump to page):

Measurement		Model EL-USB						Page Number
Function	Range	-1	-2	-3	-4	-TC	-CO	
Temperature	-35 to +80°C (-31 to +176°F)	●						<a href="#">3</a>
Humidity temperature, dew point	0 to 100% RH -35 to +80°C (-31 to +176°F)		●					<a href="#">4</a>
Voltage	0 to 30 VDC			●				<a href="#">5</a>
Process current	4 to 20 mA				●			<a href="#">6</a>
Thermocouple	-130 to +900°C (J-type) -200 to +1300°C (K-type) -200 to +350°C (T-type)					●		<a href="#">7</a>
Carbon monoxide	0 to 1000 ppm						●	<a href="#">8</a>

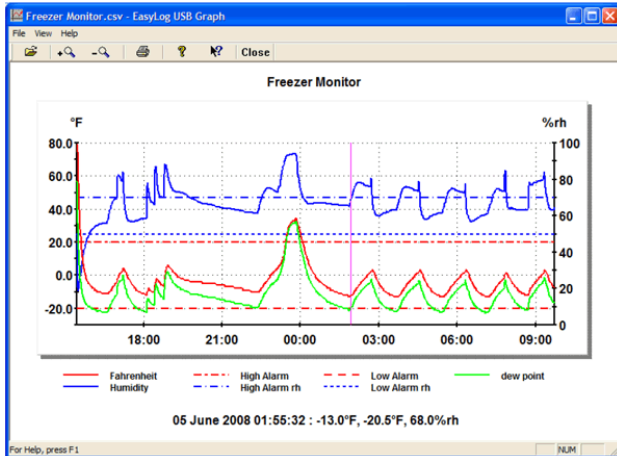
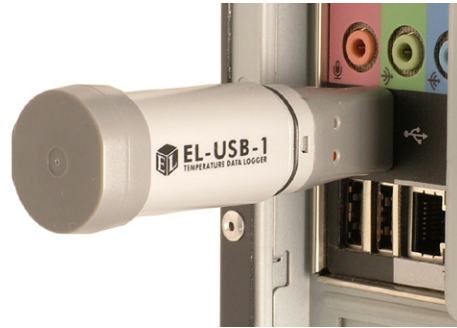
# EasyLog Data Loggers

## Easy to Program and Deploy

Getting an EasyLogger product ready to acquire data is simple:

1. Remove the protective USB cover (image 1).
2. Plug the instrument into any convenient USB port.
3. Program the data logger with the provided EasyLog software (image 2):
  - Give the logger a unique name (convenient when deploying multiple units).
  - Select the required sample rate.
  - Select high and/or low alarm thresholds.
  - Select the specific date and time to begin logging.

Now remove the data logger from the USB port, replace the USB cover, and deploy the instrument wherever you need it.



	A	B	C	D	E	F	G	H	I
	Freezer Monitor	Time	Fahrenheit(°F)	High Alarm	Low Alarm	Humidity(%rh)	High Alarm rh	Low Alarm rh	dew point(°F)
1	1	4/6/2008 15:26	77	20	-20	50	70	50	56.9
2	2	4/6/2008 15:27	79	20	-20	25.5	70	50	40.7
3	3	4/6/2008 15:28	75	20	-20	20.5	70	50	31.9
4	4	4/6/2008 15:29	66	20	-20	19	70	50	22.6
5	5	4/6/2008 15:30	56	20	-20	20	70	50	15.5
6	6	4/6/2008 15:31	48	20	-20	22	70	50	11.1
7	7	4/6/2008 15:32	40	20	-20	24	70	50	6.2
8	8	4/6/2008 15:33	34	20	-20	25.5	70	50	2.4
9	9	4/6/2008 15:34	28	20	-20	27	70	50	-1.6
10	10	4/6/2008 15:35	24	20	-20	28.5	70	50	-3.9
11	11	4/6/2008 15:36	20	20	-20	30.5	70	50	-6
12	12	4/6/2008 15:37	16	20	-20	32.5	70	50	-8.2
13	13	4/6/2008 15:38	13	20	-20	34	70	50	-10
14	14	4/6/2008 15:39	11	20	-20	35	70	50	-11.2
15	15	4/6/2008 15:40	9	20	-20	37	70	50	-11.9
16	16	4/6/2008 15:41	7	20	-20	38.5	70	50	-12.9
17	17	4/6/2008 15:42	5	20	-20	39.5	70	50	-14.2
18	18	4/6/2008 15:43	4	20	-20	41	70	50	-14.4

## Easy to Upload and Analyze Data

Whether you want to review stored data using the supplied application or using Microsoft Excel, getting meaningful results from recorded data is fast and easy:

1. Remove the protective USB cover.
2. Plug the instrument back into the PC's USB port.
3. Use EasyLog software to stop recording, access the instrument's stored data, and save it to a file that you name on the PC, all in one easy operation. The file format is Excel-compatible.
4. Immediately EasyLog's Graph utility is enabled to display all the stored data in one compressed view.
5. A cursor allows you to determine signal magnitude and time and date of acquisition for any value, and a magnifier utility allows you to zoom in for a closer look over any range – Easy and fast.
6. For more custom analysis and report generation, simply import the stored data file to Microsoft Excel for virtually unlimited flexibility in how you view and interpret your results.

# EL-USB-1 Temperature Data Logger



## Programmable Elements

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

## Features

- -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
- Dust and water resistant

## Record Times

Sampling Interval	Record Times
1 sample every 10 seconds	45 hours
1 sample every minute	11 days
1 sample every 5 minutes	56 days
1 sample every 30 minutes	11 months
1 sample every hour	1.8 years
1 sample every 6 hours	> 2 years
1 sample every 12 hours	> 2 years

## Ordering Information

Description	Order Number
<b>Temperature Data Logger</b> Includes EL-USB-1 data logger, software on CD, and battery.	<b>EL-USB-1</b>
<b>Battery</b> Replacement battery.	<b>BAT 3V6</b>
<b>Case</b> Rugged metal alloy design for harsh conditions. Waterproof to IP-67/NEMA-4X	<b>EL-USB-CASE</b>

## Specifications

Specification	Minimum	Typical	Maximum	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	-
Memory Capacity		16,382		samples
Operating Temperature Range	-35 (-31)		+80 (176)	°C (°F)
Battery Life	1*			Year

\*@ 25 °C and 1m logging interval.



EL-USB-CASE

# EL-USB-2 Humidity, Temperature and Dew Point Data Logger



## Programmable Elements

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

## Record Times

Sampling Interval	Record Times
1 sample every 10 seconds	45 hours
1 sample every minute	11 days
1 sample every 5 minutes	56 days
1 sample every 30 minutes	11 months
1 sample every hour	1.8 years
1 sample every 6 hours	> 2 years
1 sample every 12 hours	> 2 years

## Features

- 0 to +100%RH Measurement Range
- -35 to +80°C (-31 to +176°F) Measurement Range
- Dew point automatically calculated from RH and temperature
- USB Interface for Set-up and Data Download
- User-Programmable Alarm Thresholds for %RH & T
- Status Indication via Red and Green LEDs
- Supplied with Replaceable Internal Lithium Battery

## Ordering Information

Description	Order Number
<b>RH, Temp, and Dew Point Data Logger</b> Includes EL-USB-2 data logger, software on CD, and battery.	<b>EL-USB-2</b>
<b>Battery</b> Replacement battery.	<b>BAT 3V6</b>

## Specifications

	Specification	Minimum	Typical	Maximum	Unit
Relative Humidity	Measurement Range	0		100	%RH
	Humidity Repeatability (short term)		+0.1		%RH
	Accuracy (overall error, 20-80% RH)		+3.0*		%RH
	Internal Resolution		0.5		%RH
	Long-term Stability		0.5		%RH/Yr
Temperature	Measurement Range	-35 (-31)		+80 (+176)	°C (°F)
	Repeatability		+0.1 (+0.2)		°C (°F)
	Accuracy (overall error)		+0.5 (+1)	+2 (+4)	°C (°F)
	Internal Resolution		0.5 (1)		°C (°F)
Dew Point	Accuracy (overall error) (25°C, 40-100%RH)		+1.1 (+2)**		°C (°F)
Logging Rate		every 10s		every 12hr	-
Memory Capacity			16,382		samples
Operating Temperature Range		-35 (-31)		+80 (176)	°C (°F)
Battery Life			1***		Year

\* This specifies the overall error in the logged readings, for relative humidity measurements between 20 and 80%RH.

\*\* This specifies the overall error in the calculated dew point, for relative humidity measurements between 40 and 100%RH at 25°C.

\*\*\* Depending on sample rate, ambient temperature and use of alarm LEDs

## EL-USB-3 Voltage Data Logger



### Programmable Elements

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

### Features

- 0-30V d.c. Measurement Range
- Logging Rates between 1s and 12hr
- Stores 32,510 readings
- Connection via two screw terminals
- USB Interface for Set-up and Data Download
- User-Programmable Alarm Thresholds
- Red and Green LED Status Indication
- Replaceable Internal Lithium Battery

### Record Times

Sampling Interval	Record Times
1 sample every second	4.5 hours
1 sample every 10 seconds	45 hours
1 sample every minute	11 days
1 sample every 5 minutes	56 days
1 sample every 30 minutes	11 months
1 sample every hour	1.8 years
1 sample every 6 hours	> 2 years
1 sample every 12 hours	> 2 years

### Ordering Information

Description	Order Number
<b>Voltage Data Logger</b> Includes EL-USB-3 data logger, measurement leads, software on CD, and battery.	<b>EL-USB-3</b>
<b>Battery</b> Replacement battery.	<b>BAT 3V6</b>

### Specifications

Specification	Minimum	Typical	Maximum	Unit
Measurement Range	0		30	VDC
Internal Resolution		50		mV
Accuracy (overall error)		±1		%
Logging Rate	every 1s		every 12hr	-
Memory Size		32,510		Samples
Operating Temperature Range	-25 (-13)		+80 (176)	°C (°F)
Battery Life	1*			Year

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

# EL-USB-4 Current Loop Data Logger



## Programmable Elements

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

## Features

- 4-20mA Current Loop Measurement Range
- Logging Rates between 1s and 12hr
- Stores 32,000 readings
- Connection via two screw terminals
- USB Interface for Set-up and Data Download
- User-Programmable Alarm Thresholds
- Red and Green LED Status Indication
- Replaceable Internal Lithium Battery

## Record Times

Sampling Interval	Record Times
1 sample every second	4.5 hours
1 sample every 10 seconds	45 hours
1 sample every minute	11 days
1 sample every 5 minutes	56 days
1 sample every 30 minutes	11 months
1 sample every hour	1.8 years
1 sample every 6 hours	> 2 years
1 sample every 12 hours	> 2 years

## Ordering Information

Description	Order Number
<b>Current Loop Data Logger</b> Includes EL-USB-4 data logger, measurement leads, software on CD, and battery.	<b>EL-USB-4</b>
<b>Battery</b> Replacement battery.	<b>BAT 3V6</b>

## Specifications

Specification	Minimum	Typical	Maximum	Unit
Measurement Range	4		20	mA
Shunt Resistance		110		Ohm
Internal Resolution		0.05		mA
Accuracy (overall error)		±1		% ±1count
Logging Rate	every 1s		every 12hr	-
Memory Size			32,000	samples
Operating Temperature Range	-35 (-31)		+80 (176)	°C (°F)
1/2AA 3.6V Lithium Battery Life	1*			Year

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

# EL-USB-TC Thermocouple Data Logger



## Programmable Elements

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

## Record Times

Sampling Interval	Record Times
1 sample every second	4.5 hours
1 sample every 10 seconds	45 hours
1 sample every minute	11 days
1 sample every 5 minutes	56 days
1 sample every 30 minutes	11 months
1 sample every hour	1.8 years
1 sample every 6 hours	> 2 years
1 sample every 12 hours	> 2 years

## Specifications

Specification	Minimum	Typical	Maximum	Unit
Probe Measurement range (K-type)	-200 (-328)		+1300 (2372)	°C (°F)
Probe Measurement range (J-type)	-130 (-202)		+900 (1652)	°C (°F)
Probe Measurement range (T-type)	-200 (-328)		+350 (662)	°C (°F)
Resolution (internal and displayed)		0.5 (1)		°C (°F)
Accuracy (logger error)		± 1 (2)**		°C (°F)
Logging Rate	every 1s		every 12hr	-
Memory Capacity		32,000		samples
Operating Temperature Range*	-10 (14)		+40 (104)	°C (°F)
Battery Life***		6		Month

\* Using thermocouple sensors, the EL-USB-TC can log temperatures as detailed above, but the data logger should not be subjected to temperatures outside the Operating temperature range.

\*\* EL-USB-TC is designed to be used whilst disconnected from USB port.

\*\*\* @ 25°C and 1m logging rate

## Features

- -200 to +1300°C Measurement Range (K-type)
- -130 to +900°C Measurement Range (J-type)
- -200 to +350°C Measurement Range (T-type)
- USB Interface for Set-up and Data Download
- 2 User-Programmable Alarm Thresholds
- Bright Red and Green LED Indication
- Replaceable Internal Lithium Battery
- Supplied with basic K-type thermocouple rated from 0 to 110°C (32 to 230°F)

## Ordering Information

Description	Order Number
<b>Thermocouple Data Logger</b> Includes EL-USB-TC data logger, 1.5m K-type Thermocouple, software on CD, and battery.	<b>EL-USB-TC</b>
<b>Battery</b> Replacement battery.	<b>BAT 3V6</b>

# EL-USB-CO Carbon Monoxide Data Logger



**PLEASE NOTE: 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.**

## Programmable Elements

- Logger Name
- Logging Rate (10s, 30s, 1m, 5m)
- Warning Threshold
- Start Date and Start Time

## Features

- 0 to 1000 ppm CO measurement range
- Stores up to 32,510 Measurements
- User-Programmable Warning Threshold with Bright Visual and Audible Warning
- USB Interface for Set-up and Data Download
- Expected sensor life: 4 years
- Replaceable Internal Lithium Battery

## Record Times

Sampling Interval	Record Times
1 sample every 10 seconds	3.5 days
1 sample every 30 seconds	11 days
1 sample every minute	22 days
1 sample every 5 minutes	3.5 months

## Ordering Information

Description	Order Number
<b>Carbon Monoxide Data Logger</b> Includes EL-USB-CO data logger, software on CD, and battery.	<b>EL-USB-CO</b>
<b>Battery</b> Replacement battery.	<b>BAT 3V6</b>

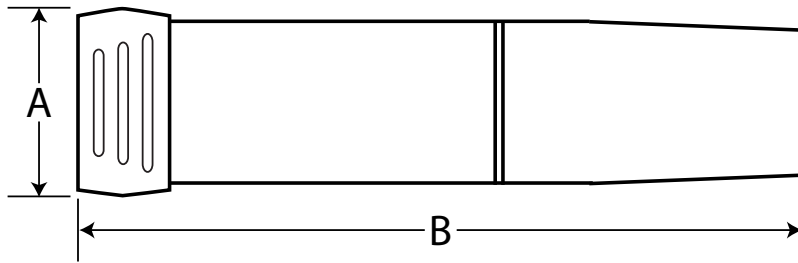
## Specifications

Specification	Minimum	Typical	Maximum	Unit
Measurement Range	0		1000	ppm CO
Internal Resolution		0.5		ppm CO
Accuracy (error)		±6		% of reading
Repeatability		±2		% of reading
Decay of reading over time			5	% of reading/year
Response time (to reach 90%)		1		minute
Logging Rate	every 10s		every 5min	-
Memory Capacity			32,510	samples
Operating Temperature Range (15-90%RH, non-condensing)	-10 (14)		+40 (104)	°C (°F)
Operating pressure range	900		1100	mbar
Battery Life			3	month

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



## Dimensions



Model Number	Dimension in inches (mm)	
	A	B
EL-USB-1	1.02 (25.9)	3.86 (98.0)
EL-USB-2	1.04 (26.4)	4.06 (103.0)
EL-USB-3	1.06 (26.9)	4.41 (112.0)
EL-USB-4	1.06 (26.9)	4.43 (112.5)
EL-USB-TC	1.06 (26.9)	4.65 (118.1)
EL-USB-CO	1.03 (26.2)	4.93 (125.2)