User's Guide

OM-EL-USB-2-LCD

HUMIDITY, TEMPERATURE AND DEW POINT DATA LOGGER WITH LCD DISPLAY DATA LOGGER

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OM-EL-USB-2-LCD

HUMIDITY, TEMPERATURE AND DEW POINT DATA LOGGER WITH LCD DISPLAY

This standalone data logger measures and stores up to 16,379 relative humidity and 16,379 temperature readings over 0 to 100%RH and -35 to +80℃ (-31 to +176°F) measurement ranges. The user can easily set up the logger and view downloaded data by plugging the module into a PC's USB port and using the supplied software. Relative humidity, temperature and dew point (the temperature at which water vapour present in the air begins to condense) data can then be graphed, printed and exported to other applications.

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

The data logger is supplied complete with a long-life lithium battery, which can typically allow logging for three months.

FEATURES

- 0 to +100%RH measurement range
- -35 to +80°C (-31 to +176°F) measurement range
- Dew point indication via Windows control software
- USB interface for set-up and data download
- User-programmable alarm thresholds for %RH & T
- Status indication via red and green LEDs
- High contrast LCD, with two and a half digit temperature and humidity display function
- Environmental protection to IP67
- Immediate, delayed and push-to-start logging
- Supplied complete with replaceable internal lithium battery and Windows control software

WINDOWS CONTROL SOFTWARE

Easy to install and use, the control software runs under Windows 2000, XP (Home and Professional Editions) and Vista (32-bit). It allows the user to set up and download data from any EL-USB product. The latest version of the control software may be downloaded from *www.omega.com*

DISPLAY FUNCTIONS

Six different functions are available, which can be cycled through using the built-in push button. The most recent logged value, maximum logged value and minimum logged value can be displayed separately for humidity and temperature. In addition, logging and alarm status is shown using two high intensity LEDs.

DATA LOGGER SETUP VARIABLES

- Logger name
- °C, °F
- Logging rate (10s, 1m, 5m, 30m, 1hr, 6hr, 12hr)
- High and low alarms
- Immediate, delayed and push-to-start logging
- Display off, on for 30 seconds after button press , or permanently on
- Data rollover (Allows unlimited logging periods by overwriting the oldest data when the memory is full)

ORDERING INFORMATION

	Stock Number
Standard Data Logger (Data Logger, Software on CD and Battery)	**OM-EL-USB-2-LCD**
Replacement Battery	**OM-EL-BATT**

SPECIFICATIONS

Specification		Min.	Typ.	Max.	Unit
Relative Humidity	Measurement range	0		100	%RH
	Repeatability (short term)		±0.1		%RH
	Accuracy (overall error)		±3.0*	±6.0	%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)		±1.1 (±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***			3		Months

* This specifies the overall error in the logged readings for relative humidity measurements between 20 and 80%RH.
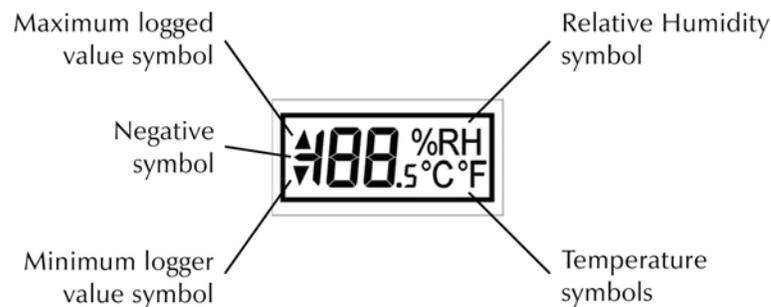
** This specifies the overall error in the calculated dew point for relative humidity measurements between 40 and 100%RH at 25°C.

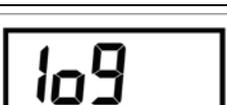*** Depending on sample rate, ambient temperature and use of LCD display.

† At temperatures below -20°C (-4°F) the LCD will exhibit slower response times of approximately 10 seconds.

LED AND LCD INDICATORS

The OM-EL-USB-2-LCD features a high contrast LCD and two bi-color LEDs. The LCD shows logged temperature and humidity values using seven segment numbers, along with annunciators. The LCD can also show information regarding the logging status.
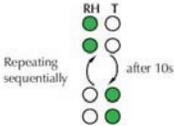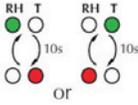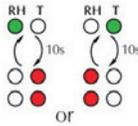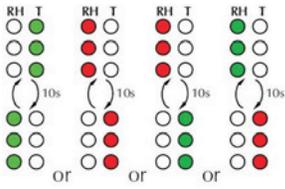
LCD status indicators:

Display	Logger status	LCD always on	LCD Mode LCD on button press	LCD off
d5	Delayed Start	Always displayed until logging started	Displayed for 3 seconds after button press	Displayed for 3 seconds after button press
P5	Push to Start	Always displayed until logging started	Always displayed until logging started	Always displayed until logging started
lo9	Logging	Not shown – recorded data shown instead	Not shown – logged value shown instead, after button press	Displayed for 3 seconds after button press
- - -	Stopped	Displayed for 3 seconds after button press	Displayed for 3 seconds after button press	Displayed for 3 seconds after button press

The LEDs display the measurement status of temperature and relative humidity, marked °C / °F and %RH on the logger.

The number of flashes and colours indicate:

🟢	(Single LED, Single Flash)	The channel is logging, no alarm
🟢	(Single LED, Double flash)	Delayed start
🟢	(Single LED, Triple flash)	Logger full, no alarm
🔴	(Single LED, Single Flash)	The channel is logging, low alarm
🔴	(Single LED, Double flash)	The channel is logging, high alarm
🔴	(Single LED, Triple flash)	Logger full, alarm
🟢 🟢	(Both LEDs, Double Flash)	Push-to-start

LEDs	Meaning	Action
RH T ○ ○	**No LEDs flash** - No logging started. or - Battery fitted buy completely discharged. or - No battery fitted. Plug the data logger into the PC and run the control software to find out which condition applied.	Start logging. Replace battery. Fit battery, start logging.
Repeating sequentially (RH T) after 10s	**Alternating green double flash every 10 seconds** - Logger configured for delayed start.	No action needed, logger will start at a later date and time.
RH T (10s)	**Dual double green flash every 10 seconds** - Logger configured for push-to-start.	Press the logger button when ready to start logging.
RH T (10s)	**Alternating greens single flash every 10 seconds** - Logger operating. - Last stored Humidity and Temperature readings within set alarm levels. (If hold is enabled, then a flashing Green LED indicates that no alarm condition has ever been logged).	None.
RH T RH T (10s) or (10s)	**Alternating between green and red single flash every 10 seconds** - The green LED indicates the parameter that is within set alarm levels. - The red LED indicates the parameter for which the Low alarm level has been exceeded. (If hold is enabled, then the alarm condition may have been triggered at any point during the current logging session).	
RH T RH T (10s) or (10s)	**Alternating between single green and double red flash every 10 seconds** - The green LED indicates the parameter that is within set alarm levels. - The red LED indicates the parameter for which the high alarm level has been exceeded. (If hold is enabled, then the alarm condition may have been triggered at any point during the current logging session).	
RH T RH T RH T RH T (10s) or (10s) or (10s) or (10s)	**Alternating between green or red triple flash every 10 seconds** **Warning :** Logger memory is full. In this condition, hold is automatically enabled, and a flashing Green LED indicates that no alarm condition has ever been logged. A Red LED indicates that an alarm condition has been logger.	Download Data.
RH T ● ● (60s) ● ●	**Simultaneous red single flash every 60 seconds** **Warning** : Battery is nearly discharged. No alarm conditions are indicated. Once the battery is exhausted, no LEDs will flash.	Fit new battery and download data.

DIMENSIONS   All Dimensions in mm

24.1

126.0

25.3

CAUTION

Exposure of the internal sensor to chemical vapours such as those produced by some plastics and foamed materials may interfere with the internal sensor and cause inaccurate readings to be logged. In a clean environment, this will slowly rectify itself, therefore ensure that the logger is used in a ventilated area i.e. air exchange is allowed.

Exposure to extreme conditions or chemical vapours will require the following reconditioning procedure to bring the internal sensor back to calibration state. 80°C (176°F) at <5%RH for 36h (baking) followed by 20-30°C (70-90°F) at >74% RH for 48h (re-hydration).

High levels of pollutants may cause permanent damage to the internal sensor.

WARRANTY/DISCLAIMER

OMEGA ENGINEERING, INC. warrants this unit to be free of defects in materials and workmanship for a period of **13 months** from date of purchase. OMEGA's WARRANTY adds an additional one (1) month grace period to the normal **one (1) year product warranty** to cover handling and shipping time. This ensures that OMEGA's customers receive maximum coverage on each product.

If the unit malfunctions, it must be returned to the factory for evaluation. OMEGA's Customer Service Department will issue an Authorized Return (AR) number immediately upon phone or written request. Upon examination by OMEGA, if the unit is found to be defective, it will be repaired or replaced at no charge. OMEGA's WARRANTY does not apply to defects resulting from any action of the purchaser, including but not limited to mishandling, improper interfacing, operation outside of design limits, improper repair, or unauthorized modification. This WARRANTY is VOID if the unit shows evidence of having been tampered with or shows evidence of having been damaged as a result of excessive corrosion; or current, heat, moisture or vibration; improper specification; misapplication; misuse or other operating conditions outside of OMEGA's control. Components in which wear is not warranted, include but are not limited to contact points, fuses, and triacs.

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RETURN REQUESTS/INQUIRIES

Direct all warranty and repair requests/inquiries to the OMEGA Customer Service Department. BEFORE RETURNING ANY PRODUCT(S) TO OMEGA, PURCHASER MUST OBTAIN AN AUTHORIZED RETURN (AR) NUMBER FROM OMEGA'S CUSTOMER SERVICE DEPARTMENT (IN ORDER TO AVOID PROCESSING DELAYS). The assigned AR number should then be marked on the outside of the return package and on any correspondence.

The purchaser is responsible for shipping charges, freight, insurance and proper packaging to prevent breakage in transit.

FOR **WARRANTY** RETURNS, please have the following information available BEFORE contacting OMEGA:

1. Purchase Order number under which the product was PURCHASED,
2. Model and serial number of the product under warranty, and
3. Repair instructions and/or specific problems relative to the product.

FOR **NON-WARRANTY** REPAIRS, consult OMEGA for current repair charges. Have the following information available BEFORE contacting OMEGA:

1. Purchase Order number to cover the COST of the repair,
2. Model and serial number of the product, and
3. Repair instructions and/or specific problems relative to the product.

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