

User's Guide



Instruction Sheet

Shop online at

omega.com[®]

Ω OMEGA[®]

omega.com

e-mail: info@omega.com

***For latest product manuals:
omegamanual.info***

ISO 9001
CERTIFIED
CORPORATE QUALITY

STAMFORD, CT

ISO 9002
CERTIFIED
CORPORATE QUALITY

MANCHESTER, UK

OM-EL-USB-2

**HUMIDITY, TEMPERATURE AND
DEW POINT USB DATA LOGGER**



OMEGAnet® Online Service
omega.com

Internet e-mail
info@omega.com

Servicing North America:

U.S.A.:
ISO 9001 Certified

One Omega Drive, P.O. Box 4047
Stamford, CT 06907-0047
TEL: (203) 359-1660 FAX: (203) 359-7700
e-mail: info@omega.com

Canada:

976 Bergar
Laval (Quebec) H7L 5A1, Canada
TEL: (514) 856-6928 FAX: (514) 856-6886
e-mail: info@omega.ca

For immediate technical or application assistance:

U.S.A. and Canada: Sales Service: 1-800-826-6342 / 1-800-TC-OMEGA®
Customer Service: 1-800-622-2378 / 1-800-622-BEST®
Engineering Service: 1-800-872-9436 / 1-800-USA-WHEN®
TELEX: 996404 EASYLINK: 62968934 CABLE: OMEGA

Mexico:

En Español: (001) 203-359-7803 e-mail: espanol@omega.com
FAX: (001) 203-359-7807 info@omega.com.mx

Servicing Europe:

Benelux:

Postbus 8034, 1180 LA Amstelveen, The Netherlands
TEL: +31 (0)20 3472121 FAX: +31 (0)20 6434643
Toll Free in Benelux: 0800 0993344
e-mail: sales@omegaeng.nl

Czech Republic:

Frýstátská 184, 733 01 Karviná, Czech Republic
TEL: +420 (0)59 6311899 FAX: +420 (0)59 6311114
Toll Free: 0800-1-66342 e-mail: info@omegashop.cz

France:

11, rue Jacques Cartier, 78280 Guyancourt, France
TEL: +33 (0)1 61 37 2900 FAX: +33 (0)1 30 57 5427
Toll Free in France: 0800 466 342
e-mail: sales@omega.fr

Germany/Austria:

Daimlerstrasse 26, D-75392 Deckenpfronn, Germany
TEL: +49 (0)7056 9398-0 FAX: +49 (0)7056 9398-29
Toll Free in Germany: 0800 639 7678
e-mail: info@omega.de

United Kingdom:
ISO 9002 Certified

One Omega Drive, River Bend Technology Centre
Northbank, Irlam, Manchester
M44 5BD United Kingdom
TEL: +44 (0)161 777 6611 FAX: +44 (0)161 777 6622
Toll Free in United Kingdom: 0800-488-488
e-mail: sales@omega.co.uk

It is the policy of OMEGA Engineering, Inc. to comply with all worldwide safety and EMC/EMI regulations that apply. OMEGA is constantly pursuing certification of its products to the European New Approach Directives. OMEGA will add the CE mark to every appropriate device upon certification.

The information contained in this document is believed to be correct, but OMEGA accepts no liability for any errors it contains, and reserves the right to alter specifications without notice.

WARNING: These products are not designed for use in, and should not be used for, human applications.

OM-EL-USB-2

HUMIDITY, TEMPERATURE AND DEWPOINT USB DATA LOGGER

INSTRUCTION SHEET

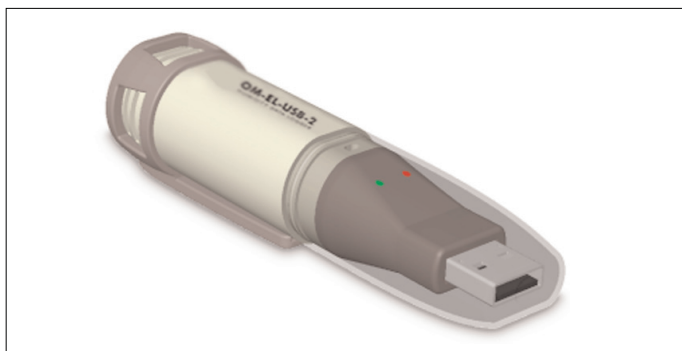
This data logger measures and stores up to 16,382 relative humidity and 16,382 temperature readings over 0 to 100%RH and -35 to +80°C (-31 to +176°F) measurement ranges. The user can easily set up the logging rate and start-time, and download the stored data by plugging the module straight into a PC's USB port and running the purpose designed software under Windows 98, 2000 or XP. Relative humidity, temperature and dew point (the temperature at which water vapor present in the air begins to condense) data can then be graphed, printed and exported to other applications. The data logger is supplied complete with a long-life lithium battery, which can typically allow logging for a year. Status indication via flashing red and green LEDs. The logger is protected against ingress from water and dust to IP67 standard when the plastic cap and seal are fitted

- 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
- Supplied with Replaceable Internal Lithium Battery and Windows Control Software
- Environmental Protection to IP67

Windows™ Control Software

Model No - OM-EL-USB-2

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 OM-EL-USB-2. The latest version of the control software may be downloaded from www.omega.com.



Data Logger Set-ups

- 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

ORDERING INFORMATION

Standard Data Logger
(Data Logger, Software on CD, Battery)

Stock Number
OM-EL-USB-2

Replacement Battery

OM-EL-BATT

SPECIFICATIONS

Specification		Min.	Typ.	Max	Unit
Relative Humidity	Measurement range	0		10	%RH
	Repeatability (short term)		±0.2		%RH
	Accuracy (overall error) (20-80%RH)		+3.5**		%RH
	Response time		5		sec
	Longterm stability		1		%RH/Yr
Temperature	Measurement range	-35 (-31)		+80 (176)	°C (°F)
	Repeatability		±0.2 (±0.4)		°C (°F)
	Accuracy (overall error)		+1 (±2)	+2.5 (±5)	°C (°F)
	Response time		20		sec
Dew Point	Accuracy (overall error) (25°C, 40-100%RH)		±2 (±4)***		°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

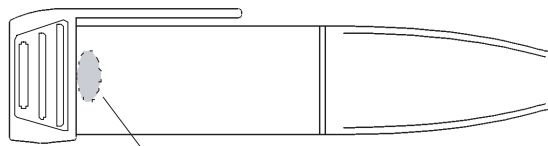
** Depending on sample rate, ambient temperature and use of alarm LEDs

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

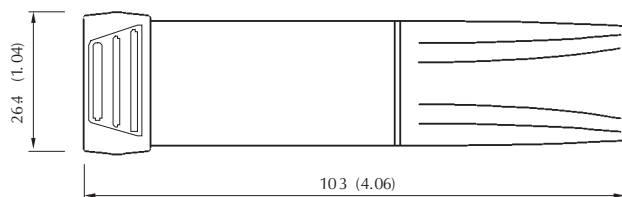
*** This specifies the overall error in the calculated dew point, for relative humidity measurements between 40 and 100% RH at 25°C.

See page 2 of this datasheet for accuracy graphs.

DIMENSIONS All dimensions in mm (inches)



Internal Relative Humidity and Temperature Sensor Location



BATTERY REPLACEMENT

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

The OM-EL-USB-2 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.

Use only Omega model no. OM-EL-BATT replacement battery. The battery is 'press fit' and is not fitted with solder tags.

Note:

Leaving the OM-EL-USB-2 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.



RECONDITIONING PROCEDURE

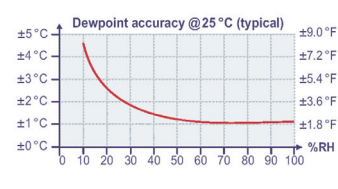
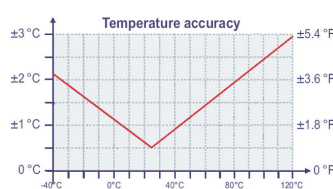
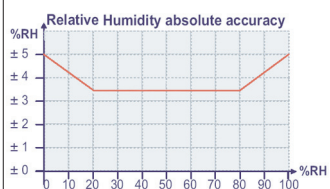
Expose of the internal sensor to chemical vapors may interfere with the internal sensor and cause inaccurate readings to be logged. In a clean environment, this will slowly rectify itself. However, exposure to extreme conditions or chemical vapors will require the following reconditioning procedure to 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

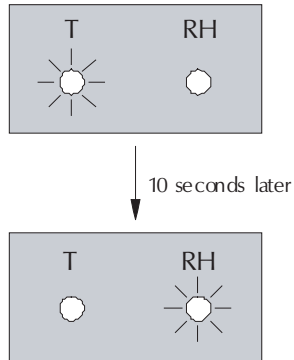
MEASUREMENT ACCURACY









LED FLASHING MODES

OM-EL-USB-2 features 2 bi-colour LEDs, one LED represents temperature measurement, the other represents RH. Each is clearly marked on the logger. To save power, the status indication alternates between the two channels every 10 seconds. So first you will see the status of the temperature logging and 10 seconds later you will see the status of the RH logging and so on.


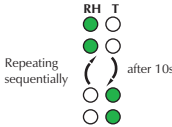

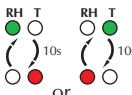
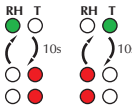
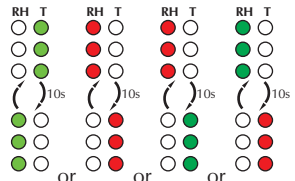

1.



2. The number of flashes and colours indicate :

	(Single flash)	The channel is logging, no alarm
	(Double flash)	Delayed start
	(Triple flash)	Logger full, no alarm
	(Single flash)	The channel is logging, low alarm
	(Double flash)	The channel is logging, high alarm
	(Triple flash)	Logger full, alarm

LED FLASHING MODES

LEDs	Meaning	Action
	<p>No LEDs flash</p> <ul style="list-style-type: none"> - No logging started. <p>or</p> <ul style="list-style-type: none"> - Battery fitted but completely discharged. <p>or</p> <ul style="list-style-type: none"> - No battery fitted. <p>Plug the data logger into the PC and run the control software to find out which condition applies.</p>	<p>Start logging.</p> <p>Replace battery.</p> <p>Fit battery, start logging.</p>
	<p>Alternating green double flash every 10 seconds</p> <ul style="list-style-type: none"> - Logger configured for delayed start. 	<p>No action needed, logger will start at a later date and time.</p>
	<p>Alternating green single flash every 10 seconds</p> <ul style="list-style-type: none"> - Logger operating. - Last stored Humidity and Temperature readings within set alarm levels. <p>(if latching is enabled, then a flashing Green LED indicates that no alarm condition has ever been logged)</p>	<p>None</p>
	<p>Alternating between green and red single flash every 10 seconds</p> <ul style="list-style-type: none"> - 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. <p>(if latching is enabled, then the alarm condition may have been triggered a while ago)</p>	
	<p>Alternating between green single and red double flash every 10 seconds</p> <ul style="list-style-type: none"> - 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. <p>(if latching is enabled, then the alarm condition may have been triggered a while ago)</p>	
	<p>Alternating between green or red triple flash every 10 seconds</p> <p>Warning : Logger memory is full.</p> <p>In this condition, latching is automatically enabled, and a flashing Green LED indicates that no alarm condition has ever been logged.</p>	<p>Download data.</p>
	<p>Simultaneous red single flash every 60 seconds</p> <p>Warning : Battery is nearly discharged.</p> <p>No alarm conditions are indicated.</p> <p>Once the battery is exhausted, no LEDs will flash.</p>	<p>Fit new battery and download data.</p>

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.

OMEGA is pleased to offer suggestions on the use of its various products. However, OMEGA neither assumes responsibility for any omissions or errors nor assumes liability for any damages that result from the use of its products in accordance with information provided by OMEGA, either verbal or written. OMEGA warrants only that the parts manufactured by the company will be as specified and free of defects. OMEGA MAKES NO OTHER WARRANTIES OR REPRESENTATIONS OF ANY KIND WHATSOEVER, EXPRESSED OR IMPLIED, EXCEPT THAT OF TITLE, AND ALL IMPLIED WARRANTIES INCLUDING ANY WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY DISCLAIMED. LIMITATION OF LIABILITY: The remedies of purchaser set forth herein are exclusive, and the total liability of OMEGA with respect to this order, whether based on contract, warranty, negligence, indemnification, strict liability or otherwise, shall not exceed the purchase price of the component upon which liability is based. In no event shall OMEGA be liable for consequential, incidental or special damages.

CONDITIONS: Equipment sold by OMEGA is not intended to be used, nor shall it be used: (1) as a "Basic Component" under 10 CFR 21 (NRC), used in or with any nuclear installation or activity; or (2) in medical applications or used on humans. Should any Product(s) be used in or with any nuclear installation or activity, medical application, used on humans, or misused in any way, OMEGA assumes no responsibility as set forth in our basic WARRANTY/DISCLAIMER language, and, additionally, purchaser will indemnify OMEGA and hold OMEGA harmless from any liability or damage whatsoever arising out of the use of the Product(s) in such a manner.

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.

OMEGA's policy is to make running changes, not model changes, whenever an improvement is possible. This affords our customers the latest in technology and engineering.

OMEGA is a registered trademark of OMEGA ENGINEERING, INC.

© Copyright 2004 OMEGA ENGINEERING, INC. All rights reserved. This document may not be copied, photocopied, reproduced, translated, or reduced to any electronic medium or machine-readable form, in whole or in part, without the prior written consent of OMEGA ENGINEERING, INC.

Where Do I Find Everything I Need for Process Measurement and Control? **OMEGA...Of Course!** *Shop online at omega.com*

TEMPERATURE

- ☑ Thermocouple, RTD & Thermistor Probes, Connectors, Panels & Assemblies
- ☑ Wire: Thermocouple, RTD & Thermistor
- ☑ Calibrators & Ice Point References
- ☑ Recorders, Controllers & Process Monitors
- ☑ Infrared Pyrometers

PRESSURE, STRAIN AND FORCE

- ☑ Transducers & Strain Gages
- ☑ Load Cells & Pressure Gages
- ☑ Displacement Transducers
- ☑ Instrumentation & Accessories

FLOW/LEVEL

- ☑ Rotameters, Gas Mass Flowmeters & Flow Computers
- ☑ Air Velocity Indicators
- ☑ Turbine/Paddlewheel Systems
- ☑ Totalizers & Batch Controllers

pH/CONDUCTIVITY

- ☑ pH Electrodes, Testers & Accessories
- ☑ Benchtop/Laboratory Meters
- ☑ Controllers, Calibrators, Simulators & Pumps
- ☑ Industrial pH & Conductivity Equipment

DATA ACQUISITION

- ☑ Data Acquisition & Engineering Software
- ☑ Communications-Based Acquisition Systems
- ☑ Plug-in Cards for Apple, IBM & Compatibles
- ☑ Datalogging Systems
- ☑ Recorders, Printers & Plotters

HEATERS

- ☑ Heating Cable
- ☑ Cartridge & Strip Heaters
- ☑ Immersion & Band Heaters
- ☑ Flexible Heaters
- ☑ Laboratory Heaters

ENVIRONMENTAL MONITORING AND CONTROL

- ☑ Metering & Control Instrumentation
- ☑ Refractometers
- ☑ Pumps & Tubing
- ☑ Air, Soil & Water Monitors
- ☑ Industrial Water & Wastewater Treatment
- ☑ pH, Conductivity & Dissolved Oxygen Instruments