

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-4

4-20mA CURRENT LOOP 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:

Frystatska 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-4

4-20mA CURRENT LOOP USB DATA LOGGER

INSTRUCTION SHEET

This data logger measures and stores up to 32,000 current loop readings over a 4-20mA measurement range. 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. The data can be graphed, printed and exported to other applications. The data logger is supplied complete with a long-life lithium battery. Correct functioning of the unit is indicated by a flashing red and green LED. The data logger features a pair of screw terminals and is supplied complete with a set of measurement leads terminating in crocodile clips.

- 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

Windows™ Control Software

Model No - OM-EL-USB-4

Easy to install and use, the control software runs under Windows 98, 2000 and XP (Home Professional Editions). It allows the user to set up and download any OM-EL-USB-4. The latest version of the control software may be downloaded free of charge from www.omega.com.



ORDERING INFORMATION

Standard Data Logger
(Data Logger, Measurement Leads,
Software on CD and Battery)

Stock Number
OM-EL-USB-4

Replacement Battery

OM-EL-BATT

Data Logger Set-ups

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

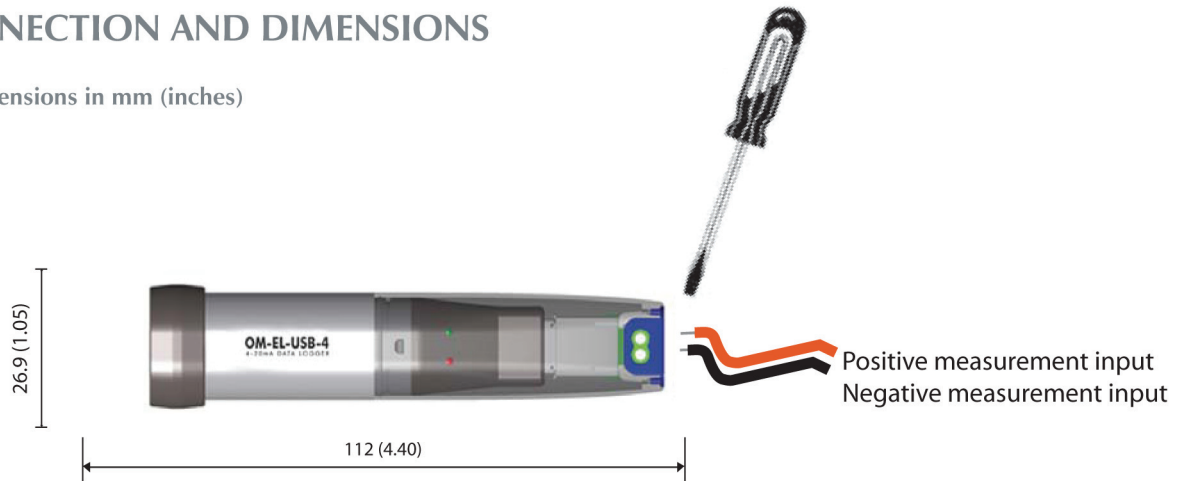
SPECIFICATIONS

Specification	Min.	Typ.	Max.	Unit
4-20mA d.c measurement range		4-20		mA d.c.
Internal resolution		±0.05		mA d.c.
Accuracy (overall error)		±1		% ±1 count
Logging rate	every 1s		every 12hr	-
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 LEDs.

CONNECTION AND DIMENSIONS

All dimensions in mm (inches)



BATTERY REPLACEMENT

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

The OM-EL-USB-4 does not lose its stored readings when the battery is discharged 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:

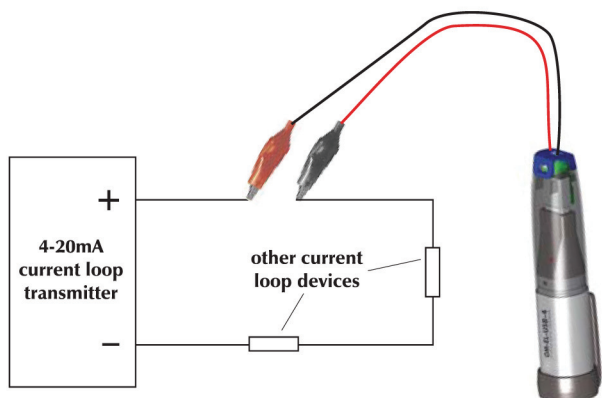
Leaving the OM-EL-USB-4 plugged into the USB port for longer than necessary will cause some of the battery capacity to be lost.



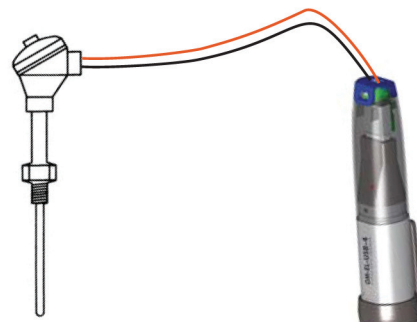
WARNING: Handle lithium batteries carefully, observe warnings on battery casing. Dispose of in accordance with local regulations.



APPLICATIONS



OM-EL-USB-4 fitted to a 4-20mA current loop transmitter



OM-EL-USB-4 fitted to a 4-20mA probe head

LED FLASHING MODES

OM-EL-USB-4 features a red and a green LED.

The LEDs on an OM-EL-USB-4 will flash in one of the following ways, assuming alarm latching is turned off (exact timings to be confirmed).

- Green single flash, every 30 seconds	Logger primed and ready to start.
- Green single flash, every 10 seconds	Logging in progress, last stored value OK
- Red single flash, every 10 seconds	Logging in progress, the last stored reading is equal to or exceeds the low alarm level (If latching is turned on, then a stored value is equal to or exceeds the low alarm level)
- Red double flash every 10 seconds	Logging in progress, the last stored reading is equal to or exceeds the high alarm level (If latching is turned on, then a stored value is equal to or exceeds the high alarm level)
- Green single flash, every 20 seconds	Low battery, logging in progress, the last stored value OK
- Red single flash, every 20 seconds	Low battery, logging in progress, the last stored value is equal to or exceeds the low alarm level
- Red double flash, every 20 seconds	Low battery, logging in progress, the last stored value is equal to or exceeds the high alarm level
- Green double flash, every 20 seconds	Logger is full, last stored value OK
- Red/Green single flash, every 20 seconds, alarm latching turned on	Logger is full, last stored value is equal to or exceeds the low or high alarm level
- No LEDs flash	LEDs disabled during configuration to save battery power and increase logging duration. or Battery dead.

By default latching is disabled. This means that the red LED will then no longer continue to flash after the logged voltage has returned to normal. Instead, the green LED will then flash.

Latching can be turned on via the control software. This means that the red LED will continue to flash, even after the logged voltage has returned to normal. The red LED will effectively have latched into its alarm condition. 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.

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