

# Electrocorder AL-2VA

## User Instructions



### WARNING!

**THIS PRODUCT MUST ONLY BE USED BY SUITABLY QUALIFIED PERSONNEL; DO NOT ATTEMPT TO USE THIS PRODUCT UNLESS YOU ARE QUALIFIED TO DO SO. HIGH VOLTAGES THAT CAUSE BURNS AND LETHAL SHOCKS ARE PRESENT DURING VOLTAGE MONITORING AND RECORDING!**

### General Description

Thank you for purchasing the Electrocorder AL-2VA, we hope you enjoy using this product, this package consists of six main components:

#### 1. Electrocorder logger (1)

The logging unit is housed in a strong ABS case.

#### 2. Voltage Input Lead (1)

A plug and lead is provided to allow easy connection to the mains voltage system.

#### 3. Voltage Output Lead (1)

An output socket to allow you to connect equipment to be recorded.

#### 4. USB Lead (1)

A serial lead is provided to allow connection between the logger and any PC with a USB port.

#### 5. Software (download free from [www.acksen.com](http://www.acksen.com))

Electrosoft software is provided free.

#### 6. User Instructions (1)

These User Instructions are provided to give guidance, to qualified personnel.

### PC Hardware requirements

To run Electrosoft you must have certain hardware and software installed on your computer. The system requirements include:-

An IBM® - compatible Personal Computer with a minimum of an 80486 processor.

A hard disk, with at least 5MB spare capacity.

One 1.44MB 3.5" disk drive.

An SVGA 600 x 800 or higher resolution display.

At least 16MB of random access memory (RAM).

A mouse.

Microsoft® Windows 9X, NT4.0, 2000, XP, Vista, Windows 7, 8, 10.

#### Installing Electrosoft

When you run the Setup program, it will automatically set a path on your hard disk and install Electrosoft there.

In Windows 9X, NT4.0, 2000, XP, Vista, Windows 7 the Setup program will create an option in your Programs menu, which is in the Start menu.

Step 1: To install Electrosoft; run Setup.

#### For Windows 9X, NT4.0, 2000, XP, Vista, Windows 7, 8, 10.

Step 2: From the Taskbar menu click Start and choose Run. The Run dialogue box appears.

Step 3: Type a:\Setup. Click OK. Follow the instructions on the screen to install Electrosoft - you will be alerted when the installation is complete.

#### Getting started

In order to set-up an Electrocorder, you must first run Electrosoft on your PC. Then connect an Electrocorder to the PC serial port using the correct (supplied) USB lead. In

Electrosoft, use the 'Setup' dialog box window and input the details of the location to be monitored. The Electrocorder does NOT need to be connected in to the mains voltage to perform this task.

The recording mode is set by default to commence recording when the Electrocorder detects voltage and to stop recording when the memory is full.

Select the recording method - two options are available:

1. Record to EN50160 standard - the Electrocorder will take a sample once every second for 10 minutes. It then averages the samples taken over that 10 minute period and stores the value. In this mode the unit will record for approximately 37 days until the memory is full.

2. Take a sample over a discrete period - the Electrocorder can be set to take an average over a selected period, 1 (one) sec to 60 (sixty) min and also record the max and min during each period. For example, **a unit set to record every 1 (one) second will record for approximately 2 hours.** A unit set to record every 12 seconds will record for approximately 1 day. **A unit set to record every 15 (fifteen) minutes will record for approximately 75 days, 60 minutes will give 300 days of logging.**

When the required information has been input, download to the connected Electrocorder by clicking the 'Write Setup' icon. The Electrocorder is now ready to monitor voltage.

When the Electrocorder is recording a flashing red light will show and when it has completed recording, a green light will appear on the unit. The database contained within Electrosoft will also advise that the unit has completed recording and is ready to be collected. To download the recorded data connect the Electrocorder to the PC serial port and click the 'Read Setup' icon. The recorded data is displayed for analysis.

This document is produced in conjunction with the Help file contained in Electrosoft, which contains a detailed explanation of all features and contains information, which should be studied prior to using this product.



### SAFETY TIPS

**Ensure the logger and the equipment you wish to monitor are both in good mechanical and electrical condition, with no external or internal damage.**

**If either the logger or the equipment to be monitored have any signs of damage, do not use them. Ensure the items have been inspected and 'PAT' tested and that their certification is within its valid date. If in any doubt, or the certification has expired, have the items inspected by a suitably qualified professional.**

**Ensure the items are dry and are being used in accordance with the manufacturers' instructions, if you are unsure, consult a suitably qualified professional.**

**The voltage leads are double insulated and suitable for voltages up to but not exceeding 300Vac. Do not use them if there any signs of damage.**

### Features & Benefits of the AL-2VA Logger System

| Feature                                 | Benefit   |
|---|---|
| Unit is small and lightweight.          | Easy to install                                     |
| Easy to use Windows software.           | Can be used by non-technical staff.                 |
| Electrosoft contains internal database. | Allows effective management of distributed loggers. |
| True RMS measurement.                   | Complies to EN50160:1994.                           |

### Colour Codes Around the World

| Phase            | IEC Colour Code     | Aus/NZ Colour Code | US Color Code     | Canadian Color Code |
|------------------|---------------------|--------------------|-------------------|---------------------|
| L1 (A)           | Brown               | Red                | Black             | Red                 |
| L2 (B)           | Black               | White              | Red               | Black               |
| L3 (C)           | Grey                | Blue               | Blue              | Blue                |
| N (Neutral)      | Blue                | Black              | White, grey       | White               |
| G (Ground/Earth) | Yellow/Green Stripe | Yell/Green Stripe  | Green, Yell/Green | Green, bare copper  |

### Inputs and Connections on Various Systems

| Colour and Input Terminal | Single Phase (2-Wire) | Single Phase (3-Wire) |
|---------------------------|-----------------------|-----------------------|
| Brown (L1)                | X (Live)              | X (Live)              |
| Green/Yellow (G/E)        |                       | X (Earth)             |
| Blue (N)                  | X (Neutral)           | X (Neutral)           |

### Power Measurement

The voltage input is labelled 'Input/Entrada' and the voltage output is labelled 'Output/Salida'. This product has an internal current sensor which detects the current being taken by the equipment connected to the Output socket.

1) Ensure this logger is first set-up with the PC and is ready to record data.

2) Next disconnect the PC and connect the load or equipment to be monitored to the 'Output' socket. Connect this logger's 'Input' to the mains voltage supply and switch the supply on, press the 'Start' button to start recording data.

3) Finally switch on the equipment to be monitored. A flashing green light signifies that the logger is recording data. A steady red signifies that the logger has finished recording data.

If both green and red lights are illuminated an error has occurred, please consult manual.

To read the data, disconnect the logger from the mains voltage supply, connect the USB lead to the PC and to the logger. Open Electrosoft, select the correct USB comms port and click the "Read Logger" button to upload the recorded data.



## Technical Specifications

| TECHNICAL SPECIFICATIONS (subject to change without notice) |  |
|---|--|
| Measurement range (Vrms)                                    | 30Vac to 300Vrms (Ph – N)  |
| Maximum channel input voltage                               | 300Vrms (Ph – N)   |
| Voltage Measurement accuracy                                | ±1% of reading (10 bit) within 50Vac – 300Vrms (Ph – N); else ±3%. (50/60Hz ±2%)           |
| Current Range   | 0.1A – 15A (other ranges can be factory set)   |
| Current Measurement Accuracy                                | 3% of range, 1 to 13A, 0.1 to 1A, +/- 0.1A.  |
| Vmin & Vmax meas time resolution                            | Always one cycle (50/60 Hz), independent of selected averaging period.                     |
| Sampling frequency  | 16 samples per cycle 800Hz @ 50Hz or 960Hz @ 60Hz  |
| Data recorded   | Average voltage/current, max & min voltage/current-cycle-value during the averaging period |
| Memory capacity   | 128kB able to record 32,000 Voltage levels per channel.                                    |
| Memory type   | Non-volatile EEPROM  |
| Memory - averaging period & duration                        | 1 sec to 60 mins (1sec. avg gives 2 hrs of logging, 60min. avg gives 300 days of logging)  |
| Real-time clock accuracy                                    | Greater than 0.001%  |
| Lead Lengths  | Metric 1.0 metres - Imperial 3' 6" (3 feet, 6 inches)                                      |
| Battery life (while plugged in)                             | Unlimited - mains powered & battery backup (9,000 hours, 1 year while unpowered).          |
| Battery Type  | Unit contains three 9V Alkaline batteries (E-Block, PP3, 1604A).                           |
| Communications Interface type                               | USB, baud of 19,200  |
| Electrosoft Software  | Windows (9x, 2K, ME, NT, XP, Vista, Win 7, 8); 1024 x768 min resolution                    |
| Environmental (temp & sealing)                              | -20C to +40C / +14°F to +104°F – Indoor use only   |
| Dimensions & Weight   | Metric 230 x 140 x 50mm & 400g<br>Imperial – 5.5" x 3.5" x 2" & 1lb                        |
| Standards   | Recording - EN50160: 1994 - CAT II, maximum input voltage 300Vac.                          |

### Calibration

Each unit is individually calibrated during testing.

### Battery life (while connected)

Unlimited - mains powered and battery back up.

### Battery life (while unconnected to mains)

The 9V Alkaline batteries should last for at least 9,000 hours (1 year),



### Caution

The battery used in this device may present a risk of fire or chemical burn if mistreated. Do not recharge, disassemble, heat above 100°C or incinerate. Replace with a 9V Lithium or Alkaline battery IEC Type 6-F22 (PP3, MN1604). Use of another battery may present a risk of fire or explosion. Dispose of used batteries promptly. Check for signs of battery (electrolyte) leakage. If leakage has occurred, the PCB must be cleaned in an approved manner by a competent (trained) person. Keep away from children. When replacing batteries, ensure the new batteries are secured to the battery holders with cable-ties or tie-wraps.

### Maintenance

Regularly check the Electrocarder casing for signs of damage (cracks, broken or loose parts) or misuse. If the unit is damaged in any way it must **NOT** be used and should be returned to the supplier. The unit must not be used for any other purpose than for that recommended by the manufacturer. The unit must not be submerged in any liquid.

### Cleaning

Wipe the outside of the case with a clean cloth dampened with IPA (Isopropyl Alcohol).

### Warranty

All Acksen products carry a minimum 1 year's warranty covering manufacturing defects and component failures. The device contains no user-serviceable parts and as such should only be repaired by skilled and authorised personnel. Failure to comply could result in unsafe operation and should not be attempted under any circumstances. Contact below for a list of approved service agents.

**Note:** Any unauthorised repair or adjustment will automatically render the warranty invalid.

### Repair and spare parts

|                                |
|--------------------------------|
| Acksen Ltd.                    |
| 28 Station Road                |
| Whiteabbey                     |
| Newtownabbey                   |
| Co. Antrim BT37 0AW            |
| United Kingdom                 |
| Or an approved repair company. |

### Returning a product for repair

If returning a product to the manufacturer for repair, it should be sent freight pre-paid to the appropriate address. A copy of the Invoice and of the packing note should be sent simultaneously by airmail to expedite clearance through Customs. A repair estimate showing freight return and other charges will be submitted to the sender, if required, before work on the device commences.

### WEEE

For EU customers Acksen Ltd offer a product take-back service. For customers within the European Union (only) and products manufactured or sold by us; when those products reach the end of their life, simply send them back to us at your expense, we will dispose of them according to the relevant legislation. WEEE Reg. No. WEE/DD2117VU.

# acksen >

Web: [www.acksen.com](http://www.acksen.com)

Email: [sales@acksen.com](mailto:sales@acksen.com)