



SINGLE CHANNEL LOGGER

WITH STATION COUNTER AND
REAL TIME DIGITAL VOLTMETER

USER'S MANUAL

Concept House, 8 The Townsend Centre,
Blackburn Road. Dunstable.
England. LU5 5BQ
Tel: ++44 (0) 1582 606 999
Fax: ++44 (0) 1582 606 991
e-mail: info@allied-associates.co.uk

DESCRIPTION

The single channel data logger uses a module which can store 8000 readings when used in the 'timed' mode. However, when used in 'Log on demand' mode using the red push button, the number of records is reduced to about 2000 per channel. This is because in this mode it stores time and date against readings occupying more memory space.

The logger may be set to 2 volts or 20 volts full scale by the Windows based software. If the operator needs to alter the sensitivity, a warning will be seen on the computer asking the user to check the position of two links within the logger. This can be ignored as the setting is the same for the two ranges.

When in use, the record button is pressed to log a reading at which time, the display will show 'log' and the counter module will be incremented. This logging action takes about 2 seconds. The counter is faster than the logger and it is possible to increment it before the logger has time to record a voltage reading. This would mean that a count value of one greater than the actual value would be displayed. In practice however, it takes a few seconds to move to the next station so this situation should not arise. To avoid this situation, wait a couple of seconds after pressing the record button before pressing again.

A digital voltmeter is provided which is wired to the two logger terminals at the top of the case either side of the co-axial connector. It has two ranges selected by the toggle switch to the right of the red 'Record' button, 20 volts and 200 volts. To localize a leak in the liner, search using this display.

The internal rechargeable battery has a capacity of 1300 mA hours which should give a useable life of several days. When charging the battery, leave it on charge overnight as a couple of hours is not sufficient. Also, the nickel metal hydride battery does not have a memory effect which was present in nickel-cadmium batteries. Nickel metal hydride batteries can be recharged upto 1000 times. They are safe for disposal and contain no mercury or cadmium. A full charge will take 24 hours.

An external B.N.C. connector is provided so that the logger can be placed in the rainproof container and triggered from a switch mounted on the frame outside.

A test box is provided which gives a nominal 1.2 volts out when the button is pressed so that the logger can be checked from time to time. Insert the 4mm plugs into the sockets and set the mode on the computer to 'Mimic' when the voltage should be displayed every few seconds. The plugs may now be transposed to check the opposite polarity. The test box uses one small type 9 volt battery which is only used when the button is pressed so its life will be quite long, in fact equal almost to the battery's shelf life. Use an external digital test meter to check its output and decide if battery replacement is necessary.

OPERATION

See the 'EL-WIN' manual for setting up the logger via the serial cable. It should be set for 'ONE-SHOT' when using the record buttons either internal or external. It is not possible to use the graph facility within 'EL-WIN' if using this mode and the data should be handled using perhaps 'Surfer' or 'Excel'. The text values recorded can be viewed using Microsoft 'Word'.

The Dual Channel Logger should be placed in the rain proof container mounted on the survey frame and the electrode leads fed through the pre-cut holes and plugged into the terminals on the logger. If using the external record switch mounted on the cross beam, the cable should also be fed into the container and plugged into the B.N.C. socket at the top end.

The two electrodes on the survey frame should have water added to the copper-sulphate crystals and the plastic end caps removed. The logger is now ready for survey. At completion of the survey, the plastic end caps should be replaced to prevent leakage of electrolyte.

The station counter will increment at each press of the Record button and at the end of the survey line or file, it can be put back to zero by momentarily pulling the 'RESET' switch towards the operator. This does not effect any other function.

A grid can be set out in the survey area and the potential from the gradient around any cut in the liner may be recorded into memory by pressing the 'Record' button. When a fault is found, the Digital Voltmeter can be used instead to localize it more quickly than the logger. Its data however, are not stored and should be noted by visually placing a marker at the leakage point.

ELECTRODE REPLACEMENT

- (1) Remove the retaining screws which hold the end caps in place at the bottom of the frames.
- (2) Pull out the end caps by tugging on the flange of the caps to remove them. More recent end caps lock in place with a quarter turn.
- (3) Use a suitable pliers to undo the knurled nuts on the studs at the top which will allow the spade contact on the end of the wire to be removed.
- (4) Use a spanner to slacken the nut which holds the electrode to the end cap which may now be taken off.
- (5) Fit the new electrode by reversing the above procedure.

Allied Associates Geophysical Ltd
Concept House, 8 The Townsend Centre,
Blackburn Road. Dunstable.
England. LU5 5BQ
Tel: ++44 (0) 1582 606 999
Fax: ++44 (0) 1582 606 991
e-mail: info@allied-associates.co.uk

Attn: Graham White (Technical enquiries)
Attn: Norman Bell (Sales enquiries)

