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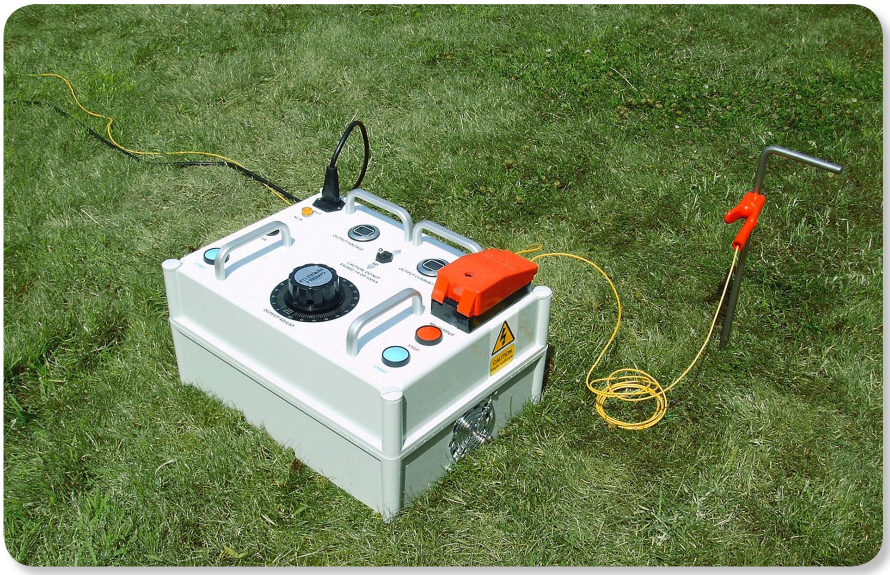
allied Associates
GEO PHYSICAL LIMITED

Leak Tester

This electrical leak locating equipment is used on the soil covering on a newly laid geomembrane in a landfill site. Damage can be caused to the geomembrane by the heavy earth moving machinery during construction. This is a cost effective method of leak location minimizing the amount of material which must be removed to effect a repair.

The method of surveying is to apply a high voltage between the inner soil and the ground outside the liner. The liner is an insulator, but if there are cuts to the liner, current will flow through these holes creating areas of voltage gradient nearby as current is concentrated into a small area. A portable survey frame with a data logger connected to two non-polarizing electrodes is used to record voltages which can be downloaded to a portable computer with the supplied Windows software. Results may then be plotted using Windows Excel or Surfer. The use of non-polarizing electrodes overcomes the anomalous effects of self potential which would make surveying difficult.

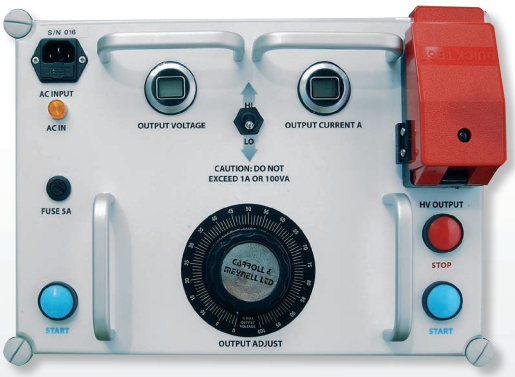
This technique is capable of finding holes as small as 3mm in geomembrane with about 0.5m of soil covering. The high voltage power unit supplies up to 700 Volts which can inject current into all but the driest soil.



Allied Leak Tester in field operation.

CONTENTS...

The complete system comprises:



- 1 High Voltage Power Unit.
- 1 Test Load Resistor.
- 2 Stainless Steel Electrodes.
- 2 Short Jumper Leads.
- 1 500m Cable on Handreel.
- 1 High Voltage Warning Sign.
- 1 AC Lead for Domestic Supply.
- 1 Industrial AC Lead for Generator.
- 1 Manual.
- 1 Transit Case.

- 1 Data Logger.
- 1 Test Voltage Source.
- 1 International Charger.
- 1 RS232 Cable.
- 1 USB to RS232 Adaptor.
- 1 EL-WIN Software Package.
- 1 Manual.
- 1 Transit Case.

- 1 Survey Frame with 2 Non-Polarizing Electrodes.
- 2 Spare Electrodes.

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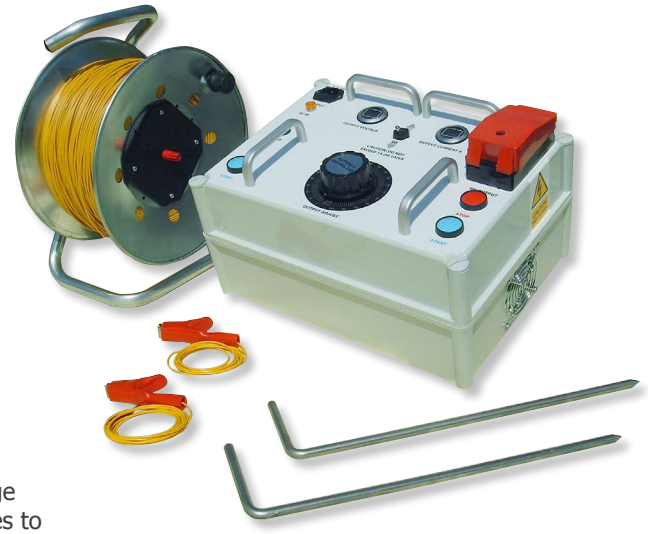
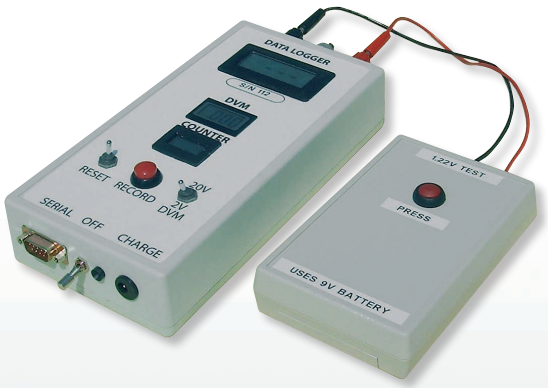
SPECIFICATIONS...



High Voltage Power Unit

Supply in:	110 or 230 Volts as ordered. 500VA from a small generator is adequate.
Output:	Variable from near zero to about 700 Volts off-load depending on input supply. Current maximum of 1 Amp. Power maximum of 100 VA. (e.g. 1 A at 100 V or ¼ A at 400 V)
Metering:	Both current and voltage are monitored on front panel digital L.C.D. meters. These function irrespective of whether the high voltage is on or off.
Connection:	Quick connection using covered terminal block. A 500m reel of cable is supplied to make connection to remote electrode.
Safety:	Automatic shutdown if the terminal block is opened. Large red "panic" switch to shutdown rapidly. Two start switches to avoid inadvertent switch-on.
Test:	A Test Load Resistor is supplied so that the operator can confirm functionality of the unit prior to deployment.
Weight:	13kg.

Data Logger



Supply:	Internal rechargeable battery.
Capacity:	2000 Readings can be logged before downloading.
Display:	Logging and real-time voltmeters with record counter.
Controls:	Locking On / Off switch Red record switch paralleled with B.N.C. connector for use with external record switch fitted to survey frame. 2 Volt and 20 Volt range switch
RS232:	Serial control from a computer using supplied software allows starting, stopping and downloading of data.

Survey Frame

Weight:	Less than 3kg with logger fitted.
Electrodes:	Two non-polarizing type with ceramic tips and sealed CuSo4 solution. Easily replaceble.