

212.1 90IM

WATER and ENGINEERING

technical information bulletin no. 02

IMPROVED EQUIPMENT FOR RESISTIVITY MEASURING

For many years UNICEF has used one type of ground resistivity measuring instrument for geophysical investigation within our water projects. It has almost become a standard to use one particular instrument without investigating what is available on the market.

However, last year, due to a large request from the Indian water programme, a market survey was carried out and several benefits compare to the previous unit used by UNICEF.

The two major benefits of the new instrument are:

High Output

(220 V/200 mA) which is approximately 10 times the output compared to other resistivity measuring instruments on the market today. This, in most cases, eliminates the use of an extra booster unit, which means (for all those who are familiar with resistivity measurements) eliminating the inconvenience of carrying the extra weight of a booster far out in the field.

High Capacity Internal Memory

The unit has an internal memory with a capacity well exceeding the storage of one full day of measuring results. One problem we all know is the interpretation of handwritten results, in particular, if the results have been written down during a wet day in the field. All results can now be automatically stored in an internal memory and can easily be retrieved upon arrival at the camp, or can be directly loaded into a computer for evaluation. This eliminates the extra work which occurred when one was not sure of the handwritten results, or if these were not readable for several reasons.

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The unit also fulfills the standard requirements we have, such as:

- compact design.
- ability to withstand rough handling.
- water resistant (never use a resistivity meter under very wet conditions as you are in danger of being electrocuted!)
- user-friendly.

If special deep measuring is required, or the geological conditions for one reason or the other require very high output, an optional booster can be added to the standard instrument which will give a total output of 800 mA.

The complete resistivity unit consists of the following equipment:

- resistivity meter with internal memory.
- cable set.
- electrodes.
- external battery charger.
- carrying bag.
- tools.
- spare parts.

The cost of the complete unit is USD 12,000.00.

Optional equipment is available at the following costs:

- computer interpretation software USD 1,650.00.
- booster unit for total of 800 mA output USD 4,500.00

In addition, a logging unit can be combined with the resistivity unit, which can log the borehole for the following information:

- short/long resistivity, SP, FR (Fluid Resistivity), Temperature, Salinity (FR and Temp.)

The cost of the additional logging unit is USD 8,400.00.

If additional information is required, please contact the Water and Sanitation Group, Supply Division, UNICEF Copenhagen.