

DC-II™ Drop Cell / Dip Cell Operation Manual



The DC-II drop cell is a dual electrode instrument, providing redundancy and self calibration capabilities.

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Section 1 - Overview

The equipment comprises a Dual Element Silver/Silver Chloride (Ag/AgCl) Reference Electrode and a WAVETEK HD 110 Multi-meter. The reference electrode cable has two conductors, one to each element. Be sure that the bare ends of the wires are never immersed in the water.

Section 2 – Calibration Instructions

1. Place reference electrode into a seawater solution with a recommended specific gravity of 1.020 to 1.028 or lower reference electrode into seawater approximately 10 ft. below surface and tie off. Wait for approximately one hour.
2. Set the multi-meter to the 200mV DC scale.
3. Connect one lead wire to the terminal marked "V-Ω" and the other lead wire to the terminal marked "COM". The reading on the meter should be less than 10.0mV. If so the survey may proceed. If the reading is greater than this value, inspect the lead wires for breaks. If the wire is in good condition, allow the electrode to soak for another hour to reach equilibrium and check again. If reading is still greater than 10mV, one of the electrodes has been contaminated, and the electrode should be replaced.

Section 3 – Measurement

1. Connect either of the two reference electrode leads to the multi-meter terminal marked "com". Connect a ground wire from the structure to the terminal marked "V-Ω".
2. Set the multi-meter to the 2 volt DC scale.
3. Record the depth and reading on the meter.
4. Lower the reference electrode in increments of 25 feet, or other increments as required by client. Record the meter reading at each depth increment.

Section 4 – Data Interpretation

1. If readings are (-).900 or more negative, structure is well protected.
2. If readings are between (-).850 V and (-).900 V the structure is adequately protected.
3. If readings are between (-).800 V and (-).850 V the structure is marginally protected.
4. If readings are less than (-).800 V the structure is not protected.
5. After final use of reference electrode place electrode assembly in a bucket of fresh water. Soak for 1 hour before storing.