Purpose

The sound velocity calibrator measures sound velocity in water. It is used to calibrate the sound velocity setting of high accuracy hydrographic echo-sounders. In particular in stratified water the speed of sound may vary over depth. Especially under such conditions the calibrator is effective to increase echo-sounder accuracy.

Conditions & Requirements

- The instrument shall be of such a design that it operates reliably and accurately under the prevailing operational conditions.
- The instrument shall be easy to operate and maintain.
- The instrument shall be supplied with the accessories as needed for effective deployment.
- All materials on the instrument exterior shall be non-corrosive.
- The instrument shall be of a rugged design that can cope with the prevailing shock and vibration as experienced in mobile operations.
- The instrument shall have an expected technical lifetime of not less than 10 years.
- An operating and maintenance manual related to the type and model of the instrument, shall be part of the delivery.
- A control unit with integrated display shall be connected to the submersible sensor by electrical cable.
- The sound velocity readings shall be digitally displayed on the control unit.
- Power supply shall be from standard batteries.
- The displayed values shall not depend on supply voltage.

Specifications

1. Sensor
   - accuracy: 1 m/s
   - velocity range: fresh/saltwater; 0 to 40°C
   - sampling time: <5 seconds
   - minimum depth: 1 m
   - maximum depth: 100 m
   - cable length: 25 m

2. Control unit
   - power supply: standard dry cell(s), e.g. AA, C or D size
   - battery autonomy: 10,000 readings
   - display: good readability in daylight
   - displayed units: m/s
   - resolution: 0.1 m/s
   - operating temperature: 0 to 50°C
   - humidity: 95%
   - enclosure: rigid, portable, splash proof
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Specifications

3. Sensor
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   - sampling time: <5 seconds
   - minimum depth: 1 m
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   - cable length: 25 m

4. Control unit
   - power supply: standard dry cell(s), e.g. AA, C or D size
   - battery autonomy: 10,000 readings
   - display: good readability in daylight
   - displayed units: m/s
   - resolution: 0.1 m/s
   - operating temperature: 0 to 50°C
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   - enclosure: rigid, portable, splash proof