10.012 PORTABLE ECHO-SOUNDER

Approval Date: 11 August 1999

Reviewed on : 23 October 2007

Purpose

The portable echo-sounder specified here is an alternative for manual depth measurement at gauging stations. It will be used during discharge measurements from a boat.

Conditions & Requirements

- The portable echo-sounder shall be of such a design that it operates reliably and accurately under the prevailing environmental conditions.
- The echo-sounder will be used in sediment laden rivers and canals.
- The echo-sounder shall be easy to operate and maintain.
- The echo-sounder shall be supplied with the accessories as needed for effective deployment.
- All materials on the echo-sounder exterior shall be non-corrosive.
- The echo-sounder shall have an expected technical lifetime of not less than 10 years.
- The echo-sounder shall be capable to operate for at least 6 months without any servicing.
- An operator’s manual, related to the type and model of the echo-sounder, shall be part of the delivery.
- Actual water depth shall be digitally presented.
- The power supply shall be from batteries, e.g. internal alkaline batteries and/or external car battery.
- Power consumption shall be moderate.
- The displayed value shall not depend on supply voltage.
- The indicated range shall be distance to the bottom. Hence, the echo-sounder should suppress echoes from the water surface (backward sensitivity) and also the result of multiple echoes should be suppressed.
- The echo-sounder shall have adjustment facilities for draft, speed of sound, sensitivity and range.
- The echo-sounder shall have a good performance in sediment laden rivers and canals.
- An in-built chart recorder is not required.
- Optionally, the echo-sounder may display water depth on a LCD screen in graphical format.

Specifications

The purchaser may execute his judicious discretion in the choice of configuration and options.

<table>
<thead>
<tr>
<th>Specification</th>
<th>Requirement</th>
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<tbody>
<tr>
<td>depth range</td>
<td>up to 50 m (selectable)</td>
</tr>
<tr>
<td>acoustic frequency</td>
<td>approx. 200 kHz</td>
</tr>
<tr>
<td>transducer beam width</td>
<td>narrow beam (approx. 8°)</td>
</tr>
<tr>
<td>transducer cable length</td>
<td>minimum 5 m</td>
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<tr>
<td>accuracy</td>
<td>≤0.2% of range</td>
</tr>
<tr>
<td>unit of range</td>
<td>m</td>
</tr>
<tr>
<td>resolution of display</td>
<td>0.10m or better</td>
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</tbody>
</table>
power supply 10 to 15 VDC, reverse polarity protected
display LCD, optionally with graphic trace
good readability in direct sunlight
enclosure and connectors compliant with IP55
operating temperature 0 to 50 °C
operating humidity 100%

Accessories

- charger for car battery
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Specifications

The purchaser may execute his judicious discretion in the choice of configuration and options.

- **depth range**: up to 50 m (selectable)
- **acoustic frequency**: approx. 200 kHz
- **transducer beam width**: narrow beam (approx. 8°)
- **transducer cable length**: minimum 5 m
- **accuracy**: ≤0.2% of range
- **unit of range**: m
- **resolution of display**: 0.10 m or better
- **power supply**: 10 to 15 VDC, reverse polarity protected
- **display**: LCD, optionally with graphic trace
enclosure and connectors | good readability in direct sunlight
operating temperature | 0 to 50 °C
operating humidity | 100%

Accessories

- charger for car battery