USV Inception MK1
payload options and
customisation available.

Twin hull to allow
maximum stability.

Overview

The Unmanned Survey
Solutions (USS) Inception
Class MK 1 Unmanned
Surface Vessel (USV) has been
developed to address a gap in
the shallow water sector. This
hydrographic survey vessel is
composed of tough aluminium
hulls, weed cutting propellers and
equipment to provide bathymetric
surveys. It operates in areas where
traditional manned survey vessels
are restricted.

Applications

Quarry lakes, lagoons, mining
ponds, reservoirs and rivers.

TECHNICAL SPECIFICATION

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length</td>
<td>1.40 metres</td>
</tr>
<tr>
<td>Width</td>
<td>1.32 metres</td>
</tr>
<tr>
<td>Height</td>
<td>0.53 metres (bottom of hull to top of bridge)</td>
</tr>
<tr>
<td>Weight</td>
<td>Each hull 15kg, Combined weight with bridge 37kg (+ batteries)</td>
</tr>
<tr>
<td>Hull Type</td>
<td>Twin hull</td>
</tr>
<tr>
<td>Hull Composition</td>
<td>Aluminium</td>
</tr>
<tr>
<td>Propulsion</td>
<td>(x2) DC brushed thrusters</td>
</tr>
<tr>
<td>Propellers</td>
<td>Weed resistant power props</td>
</tr>
<tr>
<td>Power</td>
<td>Optional 12V DC lead acid or lithium batteries</td>
</tr>
<tr>
<td>Speed</td>
<td>Survey speed ~2.5 knots</td>
</tr>
<tr>
<td>Endurance</td>
<td>Up to 4 hours from a full battery charge</td>
</tr>
<tr>
<td>Range</td>
<td>In excess of 750m</td>
</tr>
<tr>
<td>Payload</td>
<td>Various options include Single-Beam, Side Scan Sonar or customer bespoke.</td>
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<tr>
<td>Draft</td>
<td>Dependant on payload, ~0.2 metres</td>
</tr>
<tr>
<td>Launch / Recovery</td>
<td>Transport via car or van, (x1) person launch from slipway or launching cradle, (x2) person launch from pontoon or river edge.</td>
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</table>
MK 1 Unmanned Surface Vessel (USV)

Manually controlled boat with camera offers a display screen on the remote-control transmitter. It does not include any preparation for sensor integration.

- Hulls (x2), open bridge, fixings, hatches, flashing amber beacon and outboard thrusters (x2)
- Power management system including drive batteries (x3) with chargers
- Remote Control system with camera screen and antennas

We’ve created a range of additional components for the USV. For more information contact us or visit our website.

USV Payload Options

Option 1 - Basic (Sensor Ready) c/w:

Designed to allow integration of customers own sensor package.

- Power management system for payload batteries (x2) with chargers and hot-swappable connectors and connection for up to (x3) DC powered sensors (12-36V DC)
- Long range WiFi system with boat and shore-based antennas

Option 2 - Advanced (Sensor Ready) c/w:

Designed for to incorporate a CEE HydroSystems CEE Pulse Single Frequency Single-Beam Echo-Sounder (SBES) and Hemisphere Atlas Link GNSS system with the USS Sensor Integration Unit (SIU). Or to allow integration with customers own sensor package with the SIU.

- Power management system for payload batteries (x2) with chargers and hot-swappable connectors and connection for up to (x3) DC powered sensors (12-36V DC)
- USS Sensor Integration Unit (SIU). The SIU is designed to join 2-4 RS232 serial strings together and transmit through ethernet radios to shore where the data can be acquired on a shore based laptop
- Long range WiFi system with boat and shore-based antennas

Autonomy Module c/w:

- Based on drone technology, this autonomy module allows operators to set waypoints and run lines. When interfaced with Hypack mission plans (line plans) can be created, changed and run, all from the Hypack online software, making for a symbiotic and effective solution. Other features include: return to home, hold position and click and drive.

For more information on specification, integration of different sensors or payload options please contact us.