



# M40P USV

## M40P UNMANNED SURFACE VEHICLES

M40P Unmanned Surface Vehicle (USV) can be programmed to perform unmanned geophysical survey in both coastal and offshore environments. It is versatile, efficient, safer, and more environmentally friendly compared to conventional small survey vessel.

*NOTICE: Particulars are believed to be correct and subject to revision without prior notice. Interested parties must inspect vessel to check on suitability of the Company's equipment. Company has exercised due diligence to ensure that the data contained herein is reasonably accurate. However, the Company does not warrant the accuracy or completeness of the data. In no event shall the Company be liable for any damages whatsoever arising out of the use or inability to use the data contained herein.*



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## FEATURES

- Autonomous navigation to safely carry out survey on preset route
- Situational awareness with 360-degree camera and obstacle avoidance radar
- Exceptional maneuverability with unique catamaran hull, twin engines and propellers
- Simultaneous data collection with customized multi-sensor payload
- Low acoustic interference with hull-mounted sensors and retractable transducer
- Highly portable USV cradle for deployment from tow truck or mother vessel

## CONVENTIONAL SMALL SURVEY VESSEL LIMITATION

- High risk operation with onboard crew and towing equipment
- Restricted access in shallow and congested waters
- Lower productivity with longer line change
- Huge carbon footprint using conventional diesel engine

## USV BENEFITS

- Significantly reduced operational risk with unmanned USV
- Accessible at shallow water, near structure, and congested waters
- Higher productivity with shorter line change and faster survey speed
- Smaller carbon footprint with diesel-electric engine that uses less fuel



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## TECHNICAL SPECIFICATIONS

### GENERAL SPECIFICATIONS

<b>Model</b>	Manta Ray
<b>Maker</b>	OceanAlpha & Co-Designer HGIS
<b>Dimension</b>	4.5m (L) x 2.3m (W) x 1.9m (H)
<b>Draught</b>	0.4m
<b>Weight</b>	1.3t
<b>Engine</b>	27hp electric-diesel engine
<b>Max Speed</b>	7 knots
<b>Survey Endurance</b>	24 hours @ 4 knots
<b>Environmental Endurance</b>	Sea State 4

### SURVEY EQUIPMENT

<b>DGPS Positioning</b>	Veripos LD9
<b>Navigation System</b>	QPS Qinsy 9
<b>Motion Sensor</b>	iXBlue Octan 3000 G4
<b>Multi Beam Echo Sounder (MBES)</b>	Edgetech 6205 (combined MBES & SSS)
<b>Side Scan Sonar (SSS)</b>	
<b>Sub Bottom Proiler (SBP)</b>	Inomar SES2000
<b>Sound Velocity Profiler (SVP)</b>	AML Base X2 (combined SVP & CTD)
<b>Conductivity Temperature &amp; Depth (CTD)</b>	

### SAFETY EQUIPMENT

<b>Camera</b>	4 cameras with real-time 360-degree view
<b>Radar</b>	Obstacle avoidance radar up to 100m look ahead
<b>Emergency Recall</b>	Back-to-home function



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