Alpha Surveying

Alpha M3

Patrol & Detection USV

Side Scan Sonar | Single Beam | Autonomous mission planning



ISO
ISO9001

CE

Alpha M3

Patrol & Detection USV



Integrates high-precision BeiDou positioning & orientation, single-beam echosounder, and all-in-one intelligent vessel control for autonomous mission planning. Equipped with a 360° HD zoom camera, mobile network, radio communication, and millimeter-wave obstacle avoidance radar. Supports installation of side-scan sonar, searchlight, loudspeaker, and strobe warning light. Optional night vision and thermal infrared, plus the DiMap CC control center software platform.
Suitable for underwater surveying, emergency detection, drowning search & rescue, engineering structure inspection, illicit pipe investigation, and integrated monitoring of rivers, lakes, and reservoirs.



Side-Scan Sonar

Dual-array side-scan sonar with single-beam echosounder. Provides clear seabed imaging with a 60° vertical opening angle for real-time underwater target detection and location.

Single Beam

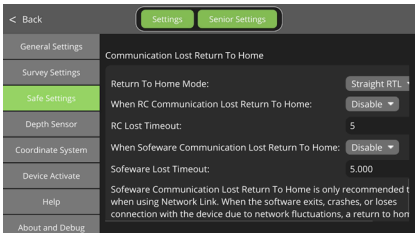
Single-beam echosounder with 120 m high-precision depth measurement, minimum depth of 0.2 m, capable of operating confidently in shallow waters.

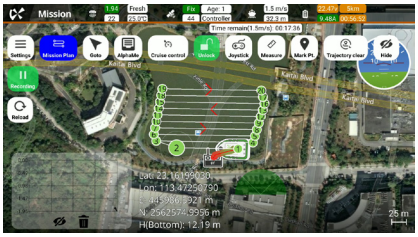
Controller with Screen

7" high-brightness touch screen (1920×1200), data & image link, controller range3 km/ radio range 2km, Qualcomm octa-core, Android OS, built-in vessel control software, battery endurance 10h.



Integrated USV Control Software









The integrated USV control software realizes functions such as route planning, parameter setting, and hull control. It can import user-defined maps and load satellite remote sensing image base maps after connecting to the Internet. It automatically generates routes, executes navigation tasks, continues navigation task breakpoints, automatically returns, and automatically cruises. It also provides data visualization, displays different colors for different water depths, and displays water depths in graphical form, making it easy to learn and grasp cross-section information data. Different projects store different measurement points, and points can be stored by time or distance intervals.

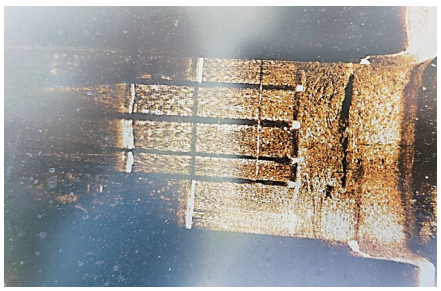
Use Cases



patrol on waters



Drowning Salvage



Engineering Testing



Hidden Pipe Inspection



Water Rescue

Professional Set

Hull	×1
Propeller	×2
Intelligent hull control	×1
Built-in RTK	×1
Built-in single-beam	×1
Dual rocker android remote controller	×1
High performance water-proof battery	×1
Battery Charger	×1
Communication antenna	×2
GNSS antenna	×2
Network antenna	×1
* Radio antenna	×1
* Side-scan Sonar	×2
Side-scan Sonar Control Host	×1
Carrying Case	×1
Life Jacket	×1
Tool kit	×1
Instruction Manual	×1

Technical Specification

Physical	Dimension	80×40×23cm
	Material	High-strength composite material
	Weight	16kg(With Battery)
	Max Payload	10kg
Echo sounder	Range	0.2m-120m
	Accuracy	1cm±0.1%h （h is the meters of water depth）
	Ping Rate	5Hz
	Beam Angle	8°
Side Scan Sonar	Operating Frequency	1MHz
	Scan Range	35m per side, total max 70m
	Beam Width	V: 0.3° H: 60°
	Transducer Angle	30° downward from horizontal
Obstacle Avoidance	Video	Options
	Millimeter Wave Radar	Options
Power	Propeller	High-speed ducted propeller*2
	Power indicators	Single motor with 7kg thrust, with 2 motors
	Top Speed	5m/s
	Propelle rinstallation method	Semi-embedded,anti-scratch
	Power	24V, 40Ah lithium battery
	Battery life	5h (1.3m/s)
	Battery installation method	Removable
Position and Orientation System	Satellite system	GPS: L1C/A，L1C，L1P，L2C，L2P，L5 BDS: B1I，B2I，B3I，B1C，B2a、B2b GLONASS: G1，G2，G3 Galileo: E1，E5a，E5b QZSS: L1C/A，L1C，L2C，L5
	RTK	Built-in GNSS Receiver
	Positioning accuracy	Horizontal: ±(8+1×10^{-6}D)mm， Vertical: ±(15+1×10^{-6}D)mm
	Orientation System	High-precision three-dimensional electronic compass
		Two GNSS Antenna Orientation
Communication	RTK communication	built-in radio, 4G network
	Remote control communication	2.4GHz
	Remote control	Remote control 3km (typical environment)
Indicator	Navigation Lights	Red light on the left, green light on the right
	RTK Status	USV control 5 indicator lights independent display
Transport box	Industrial Equipment Trolley Case	95×65×32cm

*The above technical parameters are for your reference.The company reserves the right to change the design and planning of the product based on the actual product.

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