

GEOMATE

MODEL 6

MULTIBEAM MARINE VESSEL



**MARINE SURVEY
& CONSTRUCTION**

ADVANCED USV WITH MULTIBEAM ECHOSOUNDER

The MODEL 6 USV is an innovative, fully integrated solution for 3D bathymetric surveys, positioning of underwater objects, offshore construction, underwater archaeology and wreck salvage. Built around a triple-hull vessel and optimized for the multibeam echo sounder series, the MODEL 6 offers a fully autonomous survey mode, powered by field-proven GEOMATE absolute straight line technology, to follow a predetermined path even in adverse current conditions.

The MODEL 6 multibeam echosounder USV reduces survey time, improves work efficiency and produces high-resolution data to always meet the requirements of the most demanding marine survey projects.

OPTIMIZED FOR GEOMATE MULTIBEAM ECHOSOUNDERS

High-end turnkey multibeam USV solution for high resolution bathymetry
MODEL 6 design is optimized for the HN400W . offering with high end performances to match the most demanding hydrographic survey requirements.

HIGH PERFORMANCE TRIPLE-HULLED VESSEL DESIGN

Versatile USV solution for offshore, coastal and inland water and lakes surveys
Its dual detachable floating bodies keep the hull balanced even in the rapid current situation. Removing the floating bodies allows operation in shoals, channels and shallow rivers without run aground.

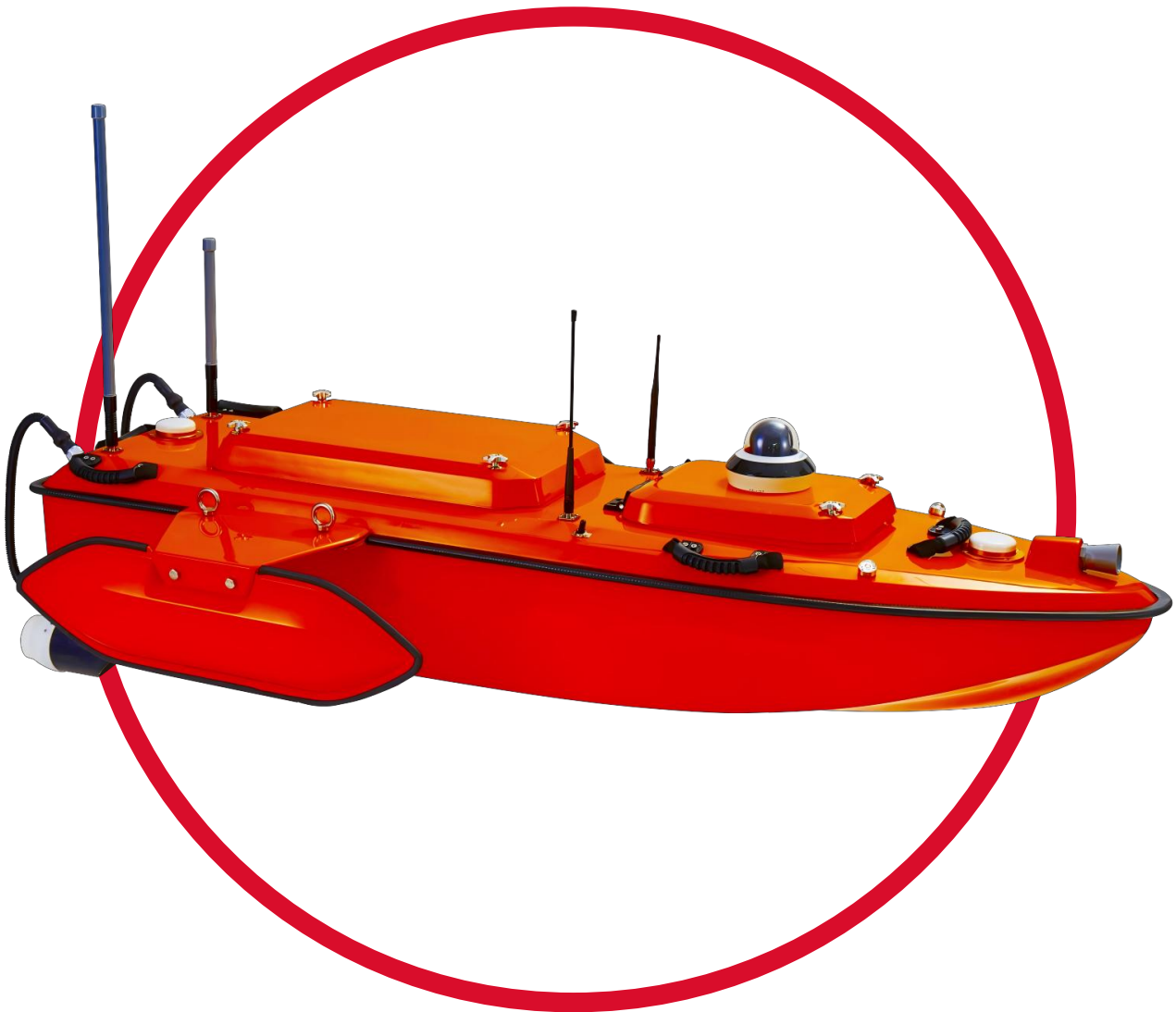
LIGHTWEIGHT FOR EASY DEPLOYMENT

Allow two operators to cope with most of remote deployment conditions
Made of macromolecule polyester carbon fiber and Kevlar fiber-glass weighting 15 kg without sensors.

OPTIONAL TERRESTRIAL MAPPING LASER SENSOR

Collect up to 1,200,000 points per second at a 40 x 360-degree coverage
The optional HA200 LiDAR mapping sensor provides high accuracy combined marine and terrestrial 3D survey in a single pass, saving significant processing time when performing harbor and river surveys with height clearance evaluation (transmission lines, bridges...).

**HIGH PERFORMANCE
MARINE VESSEL**



**FOR HIGH RESOLUTION
BATHYMETRIC PROJECTS**

GEOMATE · MODEL 6

SPECIFICATIONS

Physical	
Size (L × W × H)	1.8 m x 0.5 m x 0.25 m
Material	Macromolecule polyester carbon fiber
Weight (no instrument)	15 kg
Weight (Typical instrument)	40 kg
Hull material	Carbon fiber for Triple-Hull
Water proof	IP65
Waterproof (master control)	IP67
Payload(typical)	60 kg
Draft	0.18 m

Power	
Type	Electric
Propeller type	Brushless DC
Direction control	Veering without steering engine
Maximum motor power	700 W
Maximum motor speed	7,000 rpm/min
Maximum speed	5 m/s
LiPo battery capacity	9 x 24.5 Ah , 32.6 V 1 x 15.0 Ah , 18.0 V
Battery endurance	4 hours @ 2 m/s (running on 2 battery sets)

Communication	
Data communication	Network bridge and 4G
R/C communication	2.4 GHz radio, network bridge and 4G
Remote control range	Radio:3km, network bridge:1 km and 4G: unlimited
SIM Card	Nano SIM and eSIM
Interface	2 x RJ45 ; 2 x RS232 ; 1 x RS485 ;1 x PPS
Navigation Mode	Manual or Auto-Pilot
Data Storage	Local multi-thread and remote
Indicator Light	Two-color light (display positioning signal)
Video	360" omnidirectional video
Auto-return	When low battery or signal loss
Internal Radios	Max transmit Power 1W Range: 5-7km typical; 15km in optimal conditions

Positioning	
Satellite System	BDS B1/B2, GPS L1/L2, GLONASS L1/ L2, Galileo E1/E5, SBAS, QZSS
Channel	432 Channels
Positioning Accuracy	Horizontal: 1.5m, Vertical: 2.5m (single) H: 0.4m + 1ppm, V: 0.85m + 1ppm (SBAS) H: ±8mm + 1ppm, V: ±15mm + 1ppm (RTK)
Heading Accuracy	0.2° @1 m baseline
Inertial Navigation stability	6°/h

SBES Specifications	
Sounding Range	0.15 m to 200 m
Sounding Accuracy	±0.01 m + 0.1% x D (D = depth of water)
Resolution	0.01 m
Frequency	200 kHz
Beam Angle	6.5°± 1°

MBES Specifications	
Type	GEOMATE HN-400W



Swath coverage	5 - 210° FLEXIBLE SECTOR(SHALLOW WATER IHO SPECIAL ORDER >15SO)
Range resolution	<10 mm (ACOUSTIC W. 80kHz BANDWIDTH)
Number of beams	256 - 512 (1024 HDS) EA & ED
Operating frequency	Nominal 400 KHz (FREQUENCY AGILITY 200-700kHz)
Depth range	0.2 - 275 m
Ping rate	Up to 60 Hz, Adaptive
Resolution standard	0.9° x 1.9° @400 kHz And 0.5° x 1.0° @700kHz . Narrow Option 0.9° x 0.9° @400kHz And 0.5° x 0.5° @700kHz
Positioning accuracy (assumes 1m GNSS separation)	HOR: ±(8 mm + 1 ppm X DISTANCE FROM RTK STATION) VER: ±(15 mm + 1 ppm X DISTANCE FROM RTK STATION)
Heading accuracy	0.03° (RTK) WITH 2m ANTENNA SEPARATION
Pitch/Roll accuracy	0.02° INDEPENDENT OF ANTENNA SEPARATION
Heave accuracy	2 cm OR 2% (TRUE HEAVE TM), 5 cm OR 5% (REAL TIME)
Weight	8.5 kg (AIR)3.5 kg (WATER)
Interface	ETHERNET
Cable length	STD 8m , OPT: 2m , 25m AND 50m
Power consumption	60 W(10-28VDC, 110-240VAC)
Operating temeperature	-4°C to +40°C (TOPSIDE -20°C to +55°C)
Storage temperature	-20°C to +60°C
Environment	Topside: IP67: Dust Tight, Projected Against The Effect of Immersion up to 1m Wet-end (Sonar): 100m

* Specifications are subject to change without notice.

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