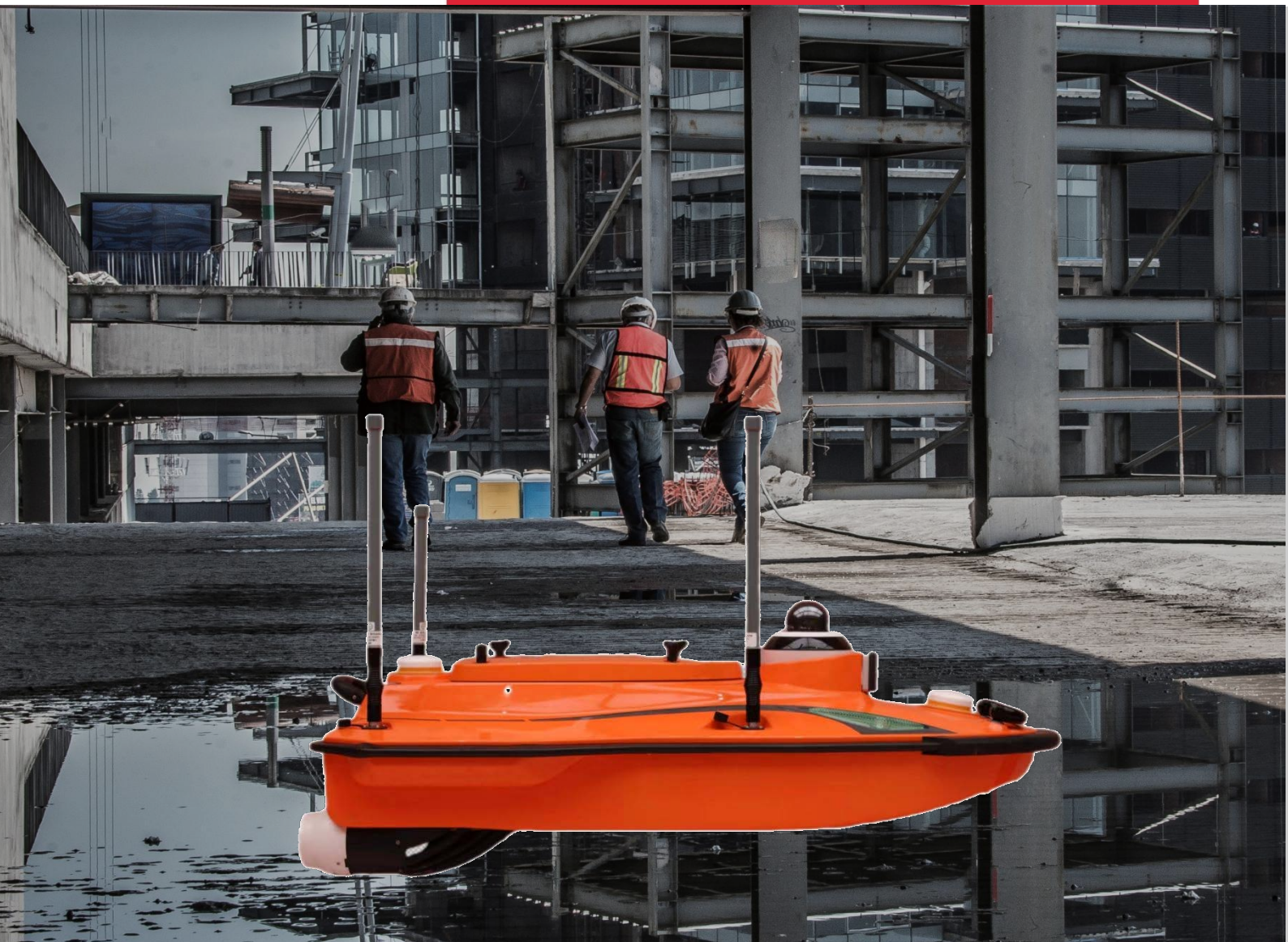


# GEOMATE

Premium Surveying. Trusted Solutions



## **GEOMATE MODEL1 PRO**

### **COMPACT TURNKEY USV SYSTEM**



## GEOMATE MODEL 1 PRO

Geomate Model 1 Pro is a compact professional USV for autonomous bathymetric surveys in shallow waters. Its double-layered, all-carbon fiber hull is impact resistant and unsinkable. The IP67 dust and waterproofing secures onboard instrumentation throughout survey and mapping projects, regardless of operating conditions. By combining a semi-recessed propeller and a hull with optimized hydrodynamic performance, the vessel's speed of up to 7m/s allows for accurate measurements even in rivers with strong currents

## TECHNICAL SPECIFICATIONS

Physical	
<b>Hull Dimension (L x W x H)</b>	105 x 55 x 39 cm
<b>Material</b>	Macromolecule polyester carbon fiber
<b>Weight (w/o instrument and battery)</b>	10 kg
<b>Maximum payload</b>	30 kg
<b>Anti-Wave &amp; Wind</b>	3 <sup>rd</sup> wind level and 2 <sup>nd</sup> wave level
<b>Hull Design</b>	Triple-hull vessel
<b>Waterproof</b>	IP67
<b>Draft</b>	9 cm
<b>Indicator Light</b>	Two-color light (display positioning signal)
<b>Video</b>	360° omnidirectional video
<b>Auto-return</b>	Automatic return in case of low battery or signal loss
<b>Obstacle avoidance</b>	Millimeter wave automatic obstacle avoidance
Power	
<b>Type</b>	Electric
<b>Propeller Type</b>	Brushless DC
<b>Direction Control</b>	Veering without steering engine
<b>Maximum Motor Power</b>	800 W
<b>Maximum Motor Speed</b>	7200 rpm/min
<b>Maximum speed</b>	7 m/s
<b>Li-ion Battery Capacity</b>	24 500 mAh, 36V 15 000 mAh, 18V
<b>Battery Endurance</b>	2*3 hours @ 2 m/s (running on 2 battery sets)
D270 Singlebeam Echo Sounder	
<b>Data Type</b>	NMEA SDDPT/SDDBT, original waveform
<b>Weight</b>	0.84 kg
<b>Sounding Range</b>	0.15 m to 200 m
<b>Sounding Accuracy</b>	±0.01 m + 0.1% x D (D = depth of water)
<b>Resolution</b>	0.01 m
<b>Frequency</b>	200 kHz / 25 kHz
<b>Beam Angle</b>	6.5° ± 1°

Communications	
<b>Data Communication</b>	Network bridge and 4G for data, video and RTCM corrections
<b>Remote Control Communication</b>	2.4 GHz
<b>Remote Control Range</b>	1 km
<b>SIM Card Slot</b>	nano SIM
<b>Interface</b>	2x RJ45 port 2x RS232 serial port 1x RS485 serial port 1x PPS
<b>Navigation Mode</b>	Manual or Auto-Pilot
<b>Waterproof (master control)</b>	IP67
<b>Data Storage</b>	Local multi-thread and and remote
Positioning	
<b>Satellite System</b>	BDS B1/B2, GPS L1/L2, GLONASS L1/L2, Galileo E1/E5, QZSS
<b>Channel</b>	432 channels
<b>Single Point Position (RMS)</b>	Horizontal: 1.5 m Vertical: 2.5 m
<b>SBAS Positioning Accuracy</b>	Horizontal: 0.5 m Vertical: 0.85 m
<b>DGNSS Positioning Accuracy</b>	Horizontal: 0.4 m + 1ppm Vertical: 0.85 m + 1ppm
<b>RTK Positioning Accuracy</b>	Horizontal: ±8 mm + 1ppm Vertical: ±15 mm + 1ppm
<b>Heading Accuracy</b>	0.2° @1 m baseline
<b>Inertial Navigation stability</b>	6°/h
<b>IMU update rate</b>	200 Hz