REMUS 100E

Unmanned Underwater Vehicle

ENVIRONMENTAL VARIANT

The REMUS 100E environmental variant is a two-man portable unmanned underwater vehicle (UUV) that can measure water quality and collect ecological survey data in support of scientific marine studies.

The open architecture and modularity of the REMUS Technology Platform facilitates increased capabilities,interoperability and applications while decreasing risk and cost.

Environmental Monitoring

The REMUS 100E is outfitted with specialized sensors to facilitate environmental monitoring. It can be rapidly deployed to assist with emergency response operations and water quality studies, measuring things like dissolved oxygen, temperature, salinity, turbidity, current, chlorophyll, fluorescence, hydrocarbons and thermoclines.

Marine Research

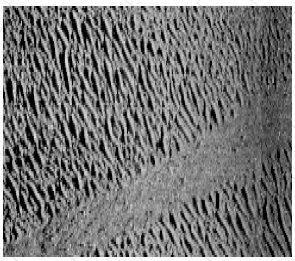
The REMUS 100E can collect data to support marine research studies. Capabilities include habitat mapping, aquaculture surveys, fisheries research, fish stock assessments, coral reef surveys and measurement of water quality to determine pollution and toxin levels.

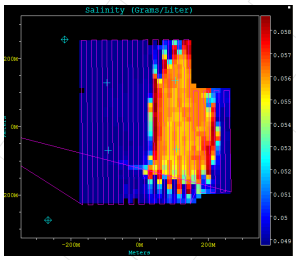
Climate Change

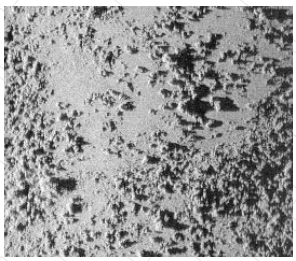
REMUS UUVs can be used to study climate change in open water or in inaccessible/hazardous locations such as abyssal plains or under polar ice. The REMUS 100E gathers high-resolution spatial and temporal data to measure changes in salinity, temperature and currents.

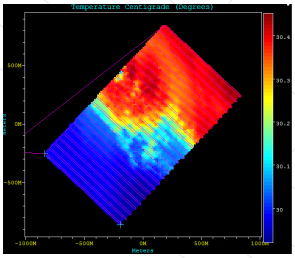
Key Features

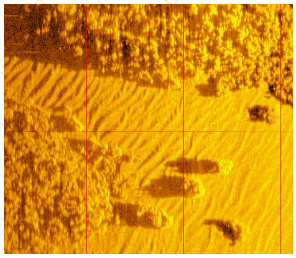
- Two-man portable, small-class UUV
- 100-meter depth rated
- Up to 10-hour mission duration
- Speeds up to 4.5 knots
- Open architecture
- High quality environmental sensors

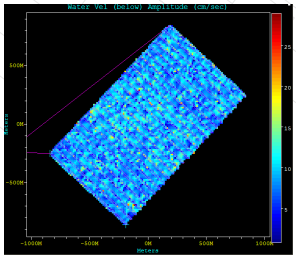












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REMUS 100E Unmanned Underwater Vehicle

Specifications

Standard Specifications, Sensors and Payloads	
Depth Rating	100m (328 ft.)
Diameter	19cm (7.5 in.)
Length	2.78m (70 in.)
Weight	39kg (86 lb.)
Speed	0-4.5 knots (0-2.3 m/s)
*Estimated Endurance**	10 hours
Energy Storage	1.5 kWh rechargeable lithium-ion battery
Recharge Time in Vehicle	6 hours
*Maximum Range**	56km (30nm)
Propulsion and Control	Direct drive DC brushless motor, open 3-blade propeller; Cruciform fin control (yaw and pitch)
Communications	WHOI micromodem 2.0 high frequency (20-30 kHz) acoustic communications; 2.4 GHz WiFi; Iridium (optional)
Antenna	GPS, WiFi, Iridium, LED status lights, visible and infrared (IR) recovery locating strobe
Navigation	iXblue Phins C3 Inertial Navigation System (INS); Garmin commercial GPS; Long Baseline (LBL); Doppler-assisted dead reckoning
Doppler Velocity Log (DVL)	Teledyne 300 kHz phased array DVL with 200m bottom lock
Side Scan Sonar	Marine Sonics (MSTL) MK II Arc Scout 900/1800 kHz dual frequency; Resolution up to 5cm; Swath up to 160m
Other Sensors	YSI conductivity and temperature (CT) sensor; TE Connectivity depth sensor; Aanderaa oxygen optode; Seabird Scientific Eco Puck Triplet
Hard Drive	1 TB solid state hard drive
Warranty	Standard 1 year warranty; Warranty options available
Software	Vehicle Interface Program (VIP) for mission programming and post-mission analysis
External Connections	100 Megabit ethernet; Vehicle power/charging (110/220V)
Tracking	Ranger & VIP software via towfish communications; Mission monitoring; Re-direct, loiter and abort commands
Safety Features	Ground fault detection; Leak detection; Health status
Operations	Capable of operating multiple REMUS vehicles simultaneously
Auxiliary Equipment	Ranger and towfish; Ruggedized laptop; Pelican transit case; Vehicle maintenance cradle; Operations and maintenance spares
Optional Payloads, Equipment and Software	
Camera	Voyis 4K HD stills camera module with high intensity LED lightbar
Iridium Communications	Iridium capable with encrypted Iridium dial-up and SMS modem; Customer must provide SIM card
Environmental Sensors	Kongsberg EK80
Safety Features	RJE International emergency locator beacon
Software	SeeByte SeeTrack and Neptune; Reflection Post-Mission Analysis
Auxiliary Equipment	LBL transponders; Surface communications station

**At 3.0 knots (1.5 m/s) with standard sensors active*

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World leading autonomy and multi-domain autonomous systems making vast expanses of the earth accessible for defense, research and commerce.

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