

HUGIN 1000 AUV - 1000M RATED

HUGIN AUV SPECIFICATIONS



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HUGIN AUV

The HUGIN Autonomous Underwater Vehicles (AUV) is a free-swimming autonomous vehicle with extreme survey capability.

KEY FEATURES

- UP TO 18H BATTERY CAPACITY
- 1000M DEPTH RATING
- GREAT MANOEUVRABILITY AND STABILITY
- HYDRODYNAMIC
- VISUAL, BATHYMETRIC AND SONAR SURVEY DATA

GENERAL

DEPTH RATING	1000 m
OPERATING DEPTH	5 -1000 m
LENGTH	5,27 m ⁽¹⁾
DIAMETER (CENTRE SECTION)	0,75 m
VOLUME	1,3 m ³ ⁽¹⁾
WEIGHT IN AIR	1200 kg ⁽¹⁾
WEIGHT IN WATER	Neutrally buoyant
MINIMUM AND MAXIMUM SPEED	2 and 6 knots
POWER CONTAINER (BATTERY CHARGING, HVAC LIGHT & PCS)	360-440 VAC/50 OR 60/ Hz Phase/32 Amps
HYDRAULIC POWER UNIT	11 or 22 kW, 360-440volt/50 or 60 Hz/3 phase

Note ⁽¹⁾ - The weight, length and volume of the vehicle depend upon payload configuration.

POWER

VOLTAGE	44.5 V nominal
ENERGY	18 kWh (three(3)batteries - K175 Series)
CHARGE TIME	8 hours (opt.5hours) - after complete discharge ⁽²⁾

Note ⁽²⁾ - System has two battery packs with a turnaround time of 1 to 2 hours to be ready for new mission

ESTIMATED ENDURANCE

WITH ALL PAYLOAD RUNNING AT 100% DUTY CYCLE
18 hours @ 3kts 15 hours @ 4kts

CONTROL

MOTION STABILITY (VALID AT 4 KNOTS)	< 0.5 degrees in roll and pitch < 0.5 degrees in heading over a 10 sec duration
TURNING RADIUS	20 m at nominal speed
MAXIMUM PITCH ANGLE:	50 degrees

NAVIGATION SENSORS

IMU	Honeywell HG9900
COMPASS	Leica DMC
DVL	Teledyne RDI Workhouse Navigator 300kHz
ALTIMETERS	Kongsberg Mesotech 675 kHz forward and down looking.
FORWARD LOOKING SONAR /ANTI-COLLISION SYSTEM	Imagenex sonar and KM algorithms for improved contour following and obstacle avoidance.
CTD	SAIV SD208
USBL	HiPAP Transponder
DEPTH SENSOR	DigiQuartz 8CB4000
GPS RECEIVER	Novatel

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NAVIGATION ACCURACY

MODES OF OPERATIONS:	Navigation Error	
AUTONOMOUS: NO UPDATES, STRAIGHT LINE	Real - Time 0.1 of distance travelled	Post - Processed 0.1 of distance travelled
AUTONOMOUS: GPS FIX EVERY 1-2 HOURS	2 - 10 m	1 - 4 m
AUTONOMOUS: NAVP UTP RANGING (NOT INCLUDED)	5 m	2 m
SUPERVISED: HiPAP USBL UPDATES	0.5 - 6 m (depending on depth and GPS accuracy)	0.5 - 4 m

COMMUNICATION AND LOCALISATION SYSTEMS

ACOUSTIC COMMAND LINK	Kongsberg Maritime ACL. Horizontal range 2-4 km in shallow water, 50 bps. Sound profile and acoustic noise dependent.
ACOUSTIC DATA LINK	Kongsberg Maritime ADL.
ACOUSTIC EMERGENCY LINK	Link functionally in HiPAP USBL system 1-2 km in shallow water, 10 bps. Sound profile and acoustic noise dependent.
RADIO LINK	ELPRO 455U, 2-4 km range, 9600 bps.
WIRELESS LAN	250-600 m, rate up to 54 Mbps (at surface, without obstructions)
IRIDIUM SATELLITE LINK	Global coverage (at surface), 2400 bps.
VISUAL RELOCATION	Xenon flash beacon on vehicle body and on vehicle nose

PAYLOAD SENSORS

SYNTHETIC APARTURE SONAR	Kongsberg Maritime HISAS 1030 rated for 3000 metres
MULTIBEAM ECHOSOUNDER	Kongsberg Maritime EM2040 200-400 kHz Multibeam Echosounder 0.7° x 0.7° Beam Angle, Single Receiver
ENVIRONMENTAL/OCEANOGRAPHIC SENSORS	Teledyne RDI ADCP upgrade to DVL Teledyne RDI ADCP upward looking Wetlabs FLNTU Turbidity Sensor Franatech METS.
CAMERA	TileCam Black and White Still Image Camera and LED panel.

CONTAINERS

VEHICLE CONTAINER	20 feet ISO Container - including Climate Control, HPU & Air compressor Configured for AUV operations with dual stage Stinger installed.
OPERATIONS CONTAINER	10 feet ISO Container - including Climate Control Configured as Operation room.

SAFETY SYSTEMS

NOSE RELEASE	Nose is released at surface with recovery line attached.
AIR BLADDER	Filled with CO ₂ at the end of mission. Keeps HUGIN buoyant during recovery.
DROP WEIGHT	Released in emergency situations when HUGIN cannot drive to the surface.

TOPSIDE AND HANDLING EQUIPMENT

COMMUNICATIONS EQUIPMENT	RF Link Satellite Iridium Link WLAN
TOWFISH ACOUSTIC COMMUNICATIONS SYSTEM	Acoustic Control Link Acoustic Data Link Towfish with cable and winch Transceivers and Amplifiers
NOSE-LINE RECOVERY SYSTEM	Pneumatic Launcher Tool (PLT) Mini Launcher.
VEHICLE HANDLING	Vehicle Handling Cart (Aluminium) Lifting bar
LAUNCH AND RECOVERY SYSTEM	Dual stage Stinger launch and recovery system for freeboard of up to 5 m.

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SPECIFICATION SUBJECT TO CHANGE WITHOUT NOTICE.

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