

The High Power Compact Electric Work ROV

The Seaeye Cougar-XT*i* is a development of the successful Seaeye Cougar-XT, proven worldwide in demanding applications and recognised for its capability to operate effectively as a compact inspection, or light work ROV.

The system is now based on the Saab Seaeye's iCON™ ecosystem which is an advanced distributed control and power distribution system that provides features such as advanced pilot aids and diagnostics to increase reliability and maintainability. The iCON™ ecosystem also provides a roadmap for further developments in automation and digitalisation including features such as remote telepresence control from shore via satellite or 4G communications, making the system future ready for current and further software advances.

The Cougar-XT*i* is a highly flexible and extremely powerful electric ROV, depth rated to 2000 m. The ROV is fitted with six 500 Volt DC thrusters that provide exceptional thrust for stable vehicle operations in high current environments.

The vehicle has a large payload and is designed to accommodate a wide range of quick-change tooling skids making it ideal for survey work, IRM, drill support, light construction projects and salvage support operations. Without a tooling skid, it remains a very compact inspection vehicle for access inside complex structures.

The surface control equipment for the Cougar-XT*i* can be provided integrated into a free-standing 19" rack or a control cabin.

The Seaeye Cougar-XT*i* leads a new generation of compact, highly flexible and extremely powerful electric ROVs that offer users the ability to undertake a wider range of demanding tasks at lower operating costs.



Advanced Control

Advanced vehicle autopilots for heading, depth, auto altitude and Station Keeping compliment Saab Seaeye's iCON™ intelligent control system that allows the system to control, self-diagnose and log data from system devices

Powerful

Highly manoeuvrable vehicle designed for work in strong currents and up to 2000 m depth.

Flexible

Designed as an inspection vehicle or light work vehicle with a range of tooling skids for additional tooling options.

World leader in electric underwater robotics

System Overview

- The Cougar XTi is an intelligent iCON™ based Electric Vehicle. It is equipped with electric propulsion and compatible with industry standard sensors and hydraulic tooling as well as Saab Seaeye's current and future range of electric tooling solutions. It is highly powerful and versatile, making it capable of meeting extremely demanding applications.
- Pilot controls include touch screens running the graphical user interface (GUI) for vehicle power and control; system diagnostics including remote access for technical support; flight screen monitors that display data and video transmitted via Fibre Optic multiplexers and a CWDM, and a hand control unit for the ROV.
- Additional surface equipment options include a Tooling PSU, TMS foot pedals for the optional TMS, hand control units for tooling options, and various video display and recording options.
- Available as a free-swimming ROV or in conjunction with a Type 8 Tether Management System (TMS).
- ROV rated to 2000m fitted with four horizontal and two vertical 500VDC thrusters, electronics pod, four LED lights, up to four high resolution cameras, a depth sensor, and a compass pod with integrated magneto-resistive compass, accelerometers and gyros with pitch and roll outputs for vehicle auto heading and auto depth. Auto altitude is available as an option when an altimeter is fitted. Station Keeping with nudge controls is available as an option when a compatible DVL and/or INS is fitted.
- Standard vehicle interfaces include connections for four composite cameras (one also supporting HD-SDI), eight auxiliaries including three Gb Ethernet channels, a copper signal core for CP reference, a responder trigger, and a PPS trigger for timing of survey and navigation devices. A spare fibre provides options for HD/UHD/4K video cameras.
- 110VAC equipment is supported through an optional subsea transformer pod powered from a surface supply.
- The surface video architecture is based on modern digital HD/UHD broadcast standards and includes a 12x12 SD/HD/UHD video switcher and 8x8 HDMI switcher (with control through the iCON touchscreen GUI) and a single channel HD Pilot Video Overlay.
- An optional Onshore Piloting remote operator station enables robust over-the-horizon control and piloting of the ROV and TMS.



Technical Specifications

General		Video and Electrical Interfaces	
Power Input	3-phase, 380-480 VAC 50/60Hz 145 kVA Typical Full System including TMS, Cabin and LARS	Data Link	- Single Mode Fibre with CWDM - Spare Fibre at ROV JB (3x FO pass surface slipring required for TMS based systems)
Depth Rating	2000m	Video Camera Interfaces	- 1x 24VDC HD/SD + RS-232 - 2x 24VDC SD Composite + Z/F - 1x 24VDC SD Composite + RS-232 - Fibre interface for HD/UHD/4K SDI - Multiple Gb Ethernet for IP Video
Dimensions (LxWxH)	1515 mm x 1000 mm x 790 mm	Sensor Interfaces	- 2x 24VDC + RS-232 Core Sensors - 5x 24VDC 5A + RS-232 (1x with Responder Trig) - 3x 24VDC 5A + 10/100/1000BASE-T + RS-232 (1x with PPS Trig) - CP Interface - All 24VDC power outputs have configurable soft fusing up to 6A with remote galvanic isolation + LIM monitoring - FO Mux: 17x RS-232 + 2x RS-485 fully isolated data channels + 1x Trig - Dedicated 1Gb Ethernet network for client interfaces
Standard Launch Weight	435 kg	Light Interfaces	3x 24VDC Interfaces supporting up to 6x Seaeye LED Lamps on 3x channels
Payload	80 kg	110VAC	Optional 200W Transformer Pod
Safe Working Load	945 kg @ Sea State 6	Surface Equipment	
Performance		Standard Surface Video	- Digital SD/HD/UHD/4K SDI based - 12x12 SD/HD/UHD Video Switcher + 8x8 HDMI Switcher through GUI - Single Channel HD Pilot Overlay - Options for additional 22"/32"/43" HD/UHD Monitors, Multiview, IP Video Decoding
Forward Speed	3 knots	Onshore Piloting (option)	Remote operator station option for onshore piloting
Thrust Forward	170 kgf	Power Supply Units	
Thrust Lateral	120 kgf	ROV/TMS PSU	500VDC 35A Output
Thrust Vertical	110 kgf	Tooling PSU (option)	660VAC 3ph 50/60Hz 9kVA Output
Standard Instruments			
Pan and Tilt	24VDC, 35 Nm Torque		
Lighting	4x 24VDC LED Lamps, Dimmable Daylight White 3520 Lumens		
Depth Sensor	300 Bar, +/-0.01% FS accuracy		
AHRS	Magneto-resistive Yaw, 1.0° Typical Pitch/Roll 0.2-0.4° static, 0.5-2.0° dyn		
Altimeter (option)	500 kHz, 0.3–50m range, 1mm resolution		
Hydraulic Tooling			
Dual 5-function Manipulator Skid Option: 660VAC input, HPU 1.1 L/min @ 140 Bar, 2x Valve Packs with 13x Bi-directional Rate Control Valves			
Auxiliary HPU Sled Option: 660VAC input, 12 LPM @ 140 Bar, 1x Bi-directional Rate Control High Flow Valve			

Options, Tools and Accessories



High resolution colour and monochrome cameras, including low light, fixed and zoom / focus



DVL and inertial navigation systems.
Station Keeping option available



HD and UHD/4K fibre cameras and IP Cameras



Cleaning brush incorporating a heavy duty brush plus an SM7 motor



Altimeter for measuring the height of the vehicle above the sea floor. Auto Altitude option available



Electric Water Jet System for cleaning operations.
Requires three-phase tooling PSU



Scanning Sonar and surface equipment options



Cathode Potential Probes (contact and proximity options)



Multi Beam Imaging Sonar and surface equipment options



Ultrasonic Thickness system to determine the level of corrosion present in a structure



Additional three phase power supply unit used to power tooling options



Flooded Member Detection system to detect flooding in structures



Additional 4kW DC HPU and control valve used for some hydraulic tooling options



Control cabin options include video recording unit, video matrix switcher, communications system, and pilot seating



Dual five-function heavy duty manipulator system. Manipulator camera options available



Laser options for video survey



Compact Cutter capable of cutting 38 mm diameter steel wire rope. Requires a 4 kW HPU



Battery-operated Xenon emergency strobe used (MBES) fitted to forward frame to locate the ROV



Rotary Cutter used for cutting through hoses and cables up to 100 mm thick. Requires a 4 kW HPU



Acoustic tracking systems and beacons for calculating the position of the ROV



Holmatro Cutter with jaws opening to 144 mm. Requires a tooling PSU and a 4 kW HPU

Deployment Systems and Control Cabins



Tether Management System (TMS) Type 8 with 200 m of fibre optic tether allowing for the deployment of the ROV at working depth and also providing protection.



A-Frame Safe Area Launch and Recovery System (LARS) with Lock Latch or Snubber option. A Zone II upgrade option is available.



Safe Area 20ft split Control Cabin with a Pilot Control section and a separate high voltage PSU section. Fitted with electric power distribution panels, lighting, air conditioning, heating, 19 inch racks and escape hatch is available as is a Zone II upgrade.



Additional cabin options include: 10 ft standalone workshop.