

REACH REMOTE 1 – Crew-free research craft and ROV deployer



Shipbuilder:	Trosvik Maritime
Designer:	Kongsberg Maritime
Vessel's name:	REACH REMOTE 1
Owner/Operator:	Reach Subsea
Country:	Norway
Flag:	Norwegian
Total number of sister ships already completed:	2
Total number of sister ships still on order:	0
Contract date:	Unspecified
Delivery date:	January 2025

Formed in 2008, Norwegian operator Reach Subsea specialises in deploying work-class ROVs to gather ocean data for clients. “We were looking for something that could make us a bit more competitive in this market,” explains Bjørge Mathisen Døving, VP for the REACH REMOTE fleet at Reach Subsea, “and we also wondered why we were utilising a big vessel for what were quite easy ROV deployment tasks.” An encounter with Kongsberg Maritime in 2015 led Research Subsea to consider the use of a remote-controlled USV.

This uncrewed craft would not only taxi a work-class ROV from site to site, but act as an ‘energy carrier’, providing the power required by the ROV for its offshore tasks. The USV and ROV would be operated from remote operations centres (ROCs), on land or on another ship. This concept would evolve into Reach Subsea’s REACH REMOTE 1 USV.

For Døving, the vessel offers numerous benefits compared to traditional crewed vessels. For instance, the smaller overall vessel size (think no need for heads, crew berths, fresh-water tanks or a galley), combined with the use of hybrid electric propulsion, spells lower rates of fuel consumption per operation, minimising the boat’s environmental impact. Reach Subsea and Kongsberg restricted the USV’s length to just under 24m, to meet the UK Maritime &

Coastguard Agency’s (MCA’s) Workboat Code 3 requirements.

From a safety perspective, moving operations to onshore ROCs also removes the dangers faced by human crews in rough offshore environments. Additionally, as smaller, quieter vessels, USVs significantly reduce underwater noise, minimising disturbance to sea life.

There is also the benefit of reducing unplanned downtime by using shipboard predictive maintenance technologies to keep tabs on the performance of vital equipment and systems. Moreover, remote-controlled operations open up new job opportunities for a more diverse workforce, including people who may be restricted from travelling offshore, due to disabilities or family commitments, for example.

REACH REMOTE 1 isn’t just dependent on its ROV for underwater tasks; the USV can also perform its own surveys, using two Kongsberg EM2040 multibeam echosounders and a Topas PS120 sub-bottom profiler, which can gather data up to 500m-deep. The ROV is an electric work-class ZEEROV model, produced by Kystdesign. Rated 112kW, the vehicle measures 2.75m x 1.7m x 1.69m, weighs 3,800kg and can carry up to 600kg of sensors and scientific equipment. The ZEEROV can descend to depths of 2,000m, and has been specially developed for 30 days’ worth of prolonged immersion, matching the USV’s range.

Described “the heart of the vessel”, the ROV LARS is customised for crew-free operations, deploying the ROV beneath the surface through a 5m x 3m moonpool. Døving adds: “The umbilical that runs with the ROV is also a lifting umbilical with a SWL of 8.6tonnes. So, in principle, it acts like a winch. We could use the LARS with any drone or underwater vehicle that fits.”

The engine room houses two Volvo Penta diesel engines with permanent magnet motors, which provide power for both the vessel and the ROV. Kongsberg supplied the USV’s two lithium-ion battery banks, which

can be used for peak shaving and added redundancy in the event of engine failure, or to power the vessel in pure-electric mode. The USV uses two ZF azimuthing thrusters, one fore and one aft, to maintain its DP2 dynamic positioning capability.

TECHNICAL PARTICULARS

Length, oa	23.9m
Breadth, moulded	8m
Endurance	30 days
Main engine(s):	
Number of engines	2
Make	Volvo Penta
Model	D13 MH
Output of each engine	441kW@1,900rpm (variable speed)
Propeller(s):	
Number of propellers	2
Make	ZF
Model	ATL WM-FP L-drive azimuth thrusters
Fixed/controllable pitch	Fixed
Open/nozzled	Nozzled
Deck machinery/equipment:	
- ROV launch and recovery system (LARS): ROV launched from moon pool	
Other significant or special items of equipment:	
- Power electric system (switchboards, drives, etc.)	
- Batteries	
- Automation systems including Kongsberg K-Chief, K-Safe, K-Thrust	
- HiPAP hydro-acoustic positioning system	
- Multibeam echosounder and sub-bottom profiler	
Classification	
Classification society	DNV
(NB – a general arrangement for this vessel is currently unavailable)	