

# Datasheet

## Origin 65 long-range ADCP



**The Origin 65 Acoustic Doppler Current Profiler (ADCP) is an innovative, flexible and high-performance device designed for users requiring long-range current profiles from deep sites. Combining a novel and market-changing acoustic design, integrated acoustic modem, Pressure Inverted Echo Sounder (PIES), mechanical release, and advanced software, this device revolutionises what is possible with a deep water ADCP.**

Origin 65 boasts a unique acoustic configuration, combining small depth-rated piston transducers with steel acoustic reflectors to maintain conventional ADCP beam widths and profile range. Compared to traditional monolithic designs, this configuration is more robust over many deployments and more cost effective, reducing investment and repair costs.

Origin 65 also benefits from power efficient electronics that, together with a 504 Ah internal dual battery, allow for long deployments. The glass sphere enclosing the device has space for a triple battery, if required, extending deployment times further. This reduces the need for expensive device retrieval to change batteries.

Origin 65 produces conventional PDO data as standard, whilst optionally logging proprietary formats that provide greater spatial resolution than PDO. These allow users to probe certain structures in the velocity and backscatter intensity data at an order of magnitude finer detail than previously possible. Data is logged to the device with 1 TB capacity.

A suite of intuitive software tools are available for Origin 65. Schedules can be configured using the Origin Scheduler PC application, enabling operations to be de-risked prior to deployment. The Origin Portal Web UI facilitates device configuration in operational conditions, including modification of the sampling schedule. Two schedules can be run together, allowing dual monitoring tasks to be performed by a single device. File data can be inspected using the Origin Viewer software package.

An LMF acoustic modem is integrated as standard and facilitates remote actions using an accompanying topside modem (sold separately) and the Origin Topside PC software. This enables data inspection and QC, battery and storage checks, schedule reconfiguration, and data offload; all core features of the ADCP can be accessed acoustically once deployed.

The integrated PIES delivers high precision time-of-flight and average in-situ sound velocity data. Further, the integrated release enables free-fall deployment and released recovery. The release is triggered acoustically to retrieve the device using field-proven technology, with Origin 65's glass sphere and float providing buoyancy to resurface. An LED flasher is integrated into the sphere, so you can easily locate the device even in the dark.

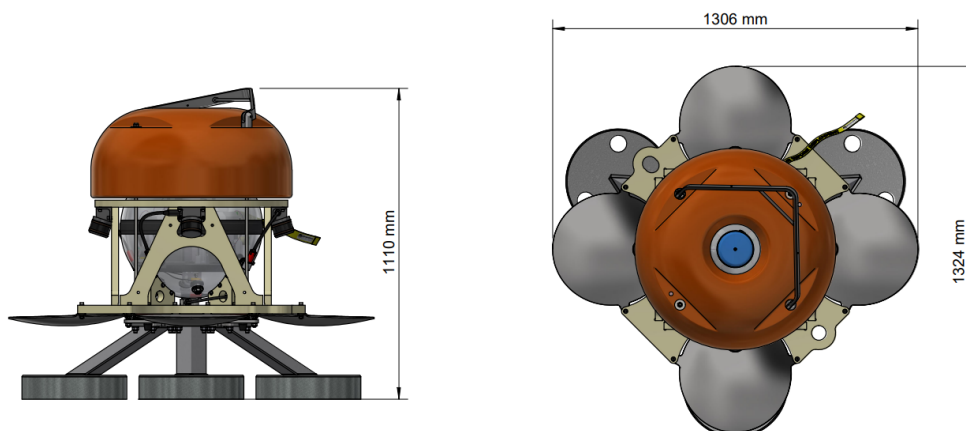
Finally, Origin 65 is compatible with the Sonardyne Edge computing environment. This permits users to upload processing apps to Origin 65 that optimise the data for their specific application, which can then be retrieved acoustically or via Ethernet. Apps can be uploaded via the Web UI or Topside, enabling maximum in-field flexibility.

### Key features

- Class leading long-range ADCP
- Reliable, robust and cost-effective projector-reflector acoustic design
- Integrated acoustic modem
- Integrated PIES and release
- Configuration via Origin Scheduler, Portal Web UI and Topside
- Minimum cell size of 120 mm
- 12 to 800+ m profiling range
- 4,500 m depth rating
- Up to 1 Hz ping rate on 4 beams
- Compatible with Sonardyne Edge computing environment

# Specifications

## Origin 65 long-range ADCP



Features		Type 8323
ADCP	Operating frequency	62.5 kHz
	Maximum profiling range	800+ m (depending on water environment)
	Minimum cell size	120 mm
	Minimum blanking distance	12 m
	Velocity range (along beam)	Up to $\pm 2$ m/s or 3.75m/s user selectable
	Velocity RMS	0.5% of measured value
	Maximum number of cells	2,500
	Maximum ping rate	1 Hz (4 beams)
	Beam width/angle	$\pm 2$ degrees / 20 degrees
Acoustic modem	Operating frequency	LMF (14–19 kHz)
Sensors	Temperature	$-5^{\circ}$ to $35^{\circ}\text{C}$
	Heading accuracy/resolution	$\pm 1^{\circ}/0.1^{\circ}$
	Pitch & roll accuracy/resolution & range	$\pm 1^{\circ}/0.1^{\circ}$ & $\pm 90^{\circ}$ (pitch), $\pm 180^{\circ}$ (roll)
	Pressure (high precision)	$\pm 0.01\%$ 6,000 psi (4,100m depth) max. (higher rated options available on request)
Communication and logging	Communications	RS232, Ethernet and acoustic modem
	Internal logging	1 TB internal memory
Output	Output telegrams	PD0, A-gram, B-gram; simultaneous output
Electrical	External power <sup>1</sup>	PoE+, adapter included
	Power	15 mW (sleep), 16 W (pinging), 20 W (fully active)
	Disposable battery capacity	504 Ah dual battery (single and triple battery options available on request)
	Full/scheduled/standby lifespan <sup>2</sup>	6 weeks/2 years/12 years
Environmental	Depth rating	4,500 m depth rating <sup>3</sup> (pressure sensor rated to 4,100 m. Deeper rated options available on request)
	Operating/storage temperature	$-5$ to $40^{\circ}\text{C}/-20$ to $55^{\circ}\text{C}$
Mechanical	Construction	Glass, steel and plastic
	Connector type	Subconn: 8-way for power and comms
	Dimensions (height x width x length)	1110 mm x 1306 mm x 1324 mm
	Weight in air/water <sup>4</sup>	230/25 kg (excluding stand 170/-21 kg)
Software	Origin Portal	Embedded Web UI for control & configuration
	Origin Scheduler	Schedule planning & configuration tool
	Origin Viewer	File data inspection
	Origin Topside	Remote configuration & control over acoustic modem

<sup>1</sup> PoE is for config/data download only; the device cannot be used operationally via PoE.

<sup>2</sup> Lifespan with dual battery calculated with 1 Hz continuous pinging (full), 1 Hz for 1 min & sleep for 14 min (scheduled), no pinging (standby).

<sup>3</sup> PIES operation depth is dependent on pressure sensor option.

<sup>4</sup> Estimated weights for dual battery instrument.