

Datasheet

Origin 600 mid-range ADCP



The Origin 600 Acoustic Doppler Current Profiler (ADCP) enhances Sonardyne's range of acoustic instrumentation by bringing a versatile, reliable, easy-to-use and cost-effective device to market. Combining field proven transducers with an integrated modem, internal rechargeable battery and advanced software, this device expands ADCP capability for users requiring mid-range current profiles from moderately shallow sites.

Origin 600 has a five-beam configuration, with a central vertical beam. This geometry, paired with a maximum sampling frequency of 4 Hz on all beams, is suitable for waves and turbulence applications, as well as mean currents.

Origin 600 possesses power efficient electronics that, combined with its 55 Ah internal rechargeable battery, allow for deployments of three months and more depending on measurement schedule. A dual battery allows for even longer or energy demanding deployments. This long battery life reduces the need for risky and costly device retrieval. External power can be supplied by PoE, allowing the user to program the device and download data without a separate power supply, though this is also supported.

Origin 600 delivers conventional PDO data as standard, whilst optionally logging proprietary formats with up to ten times 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 onboard storage unit with 1 TB capacity as standard, and can be streamed via Ethernet for cabled deployments. To add further value to the ADCP data, external sensors can be integrated via RS232 and their data logged on the ADCP.

A suite of intuitive software tools are available for Origin 600. 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 with a single device. File data can be inspected using the Origin Viewer software package.

An MF 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.

Origin 600 is compatible with the Sonardyne Edge computing environment. This permits users to upload processing apps to Origin 600 that optimise the data for their specific application. Apps can be uploaded via Origin Portal or Topside and resulting data exported over the acoustic modem, supporting post-capture data harvesting and near real-time topside monitoring.

Finally, Origin 600 is compatible with standard mounting infrastructure, reducing risk and cost for upgrading to this device.

Key features

- Class leading 625 kHz ADCP
- Reliable and robust acoustic design using field proven transducers
- Integrated acoustic modem
- Rechargeable battery
- Configuration via Origin Scheduler, Portal Web UI and Topside
- Minimum cell size of 12 mm
- 0.6 to 50+ m profiling range
- 150 m operational depth rating
- Up to 4 Hz ping rate on 5 beams
- Compatible with Sonardyne Edge computing environment

Specifications

Origin 600 mid-range ADCP



Single battery



Dual battery

Features		Type 8382 (-0457 single battery; -0427 dual battery)
ADCP	Operating frequency	625 kHz
	Maximum profiling range	50+ m (depending on water environment)
	Minimum cell size	12 mm
	Minimum blanking distance	0.6 m
	Velocity range (along beam)	Up to ± 2 m/s or 3.75 m/s user selectable
	Velocity RMS	0.5% of measured value
	Maximum number of cells	2,500
	Maximum ping rate	4 Hz (5 beams)
	Beam width/angle	± 1 degrees / 25 degrees
Acoustic modem	Operating frequency	MF (20–34 kHz)
	Typical operating range	500 m
Sensors	Temperature	-5° to 35°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	$\pm 0.05\%$ full scale
Communication and logging	Communications	RS232, Ethernet and acoustic modem
	Internal logging	1 TB internal memory
Output	Output telegrams	PD0, A-gram, and B-gram; simultaneous output
Electrical	External power ^{1 2}	18–48 V power by external cable; PoE+, adapter included
	Power	15 mW (sleep), 600 mW (pinging), 3.5 W (fully active)
	Internal battery capacity	55 Ah rechargeable (dual battery available); charger included
	Internal battery recharge	4 hours fast-charge (8 hours for dual battery)
	Full/scheduled/standby lifespan ³	1 week/3 months/2 years
Environmental	Depth rating	300 m survivable/150 m operational
	Operating/storage temperature	-5 to 40°C/-20 to 55°C
Mechanical	Construction	Plastic
	Connector type	Subconn: 8-way for power and comms; 6-way for fast-charge
	Dimensions (height x max diameter)	308 x 290 mm (dual battery height 388 mm)
	Weight in air/water ⁴	19.2/7.2 kg (dual battery 23.9/7.9 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

¹ The dc power input of 18–48 V refers to voltage at the device, not at the power source.

² PoE is for config/data download only; the device cannot be used operationally via PoE.

³ Lifespan with single battery calculated with 4 Hz continuous pinging (full), 4 Hz for 1 min & sleep for 14 min (scheduled), no pinging (standby).

⁴ Estimated weights.

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.

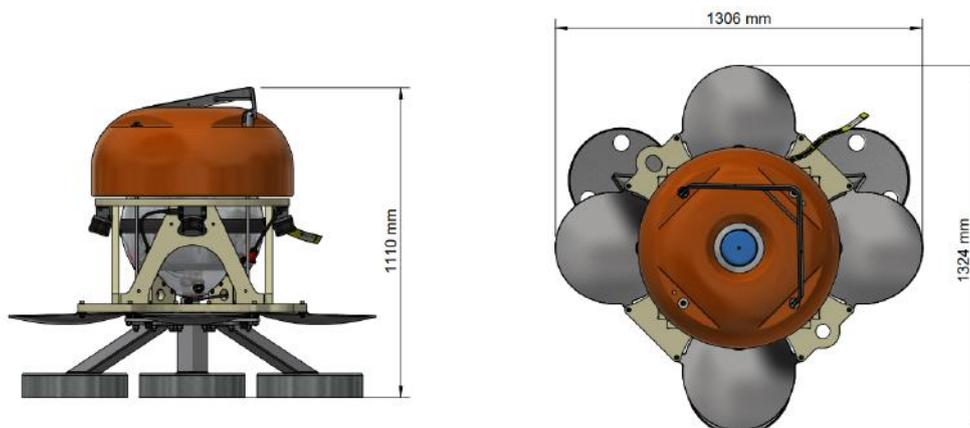
Finally, Origin 65 is compatible with the Sonardyne Edge computing environment. This permits users to upload processing apps to Origin 65 that optimise the data for their specific application, which can then be retrieved acoustically or via Ethernet. Apps can be uploaded via the Web UI or Topside, enabling 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 operational 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 ± 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)
Acoustic modem	Beam width/angle	± 2 degrees / 20 degrees
	Operating frequency	LMF (14–19 kHz)
Sensors	Typical operating range	4,000 m
	Temperature	-5° to 35°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)
Communication and logging	Pressure (high precision)	$\pm 0.01\%$ 6,000 psi (4,100m depth) max. (higher rated options available on request)
	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 ¹	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
	Full/scheduled/standby lifespan ²	6 weeks/2 years/12 years
Environmental	Depth rating	4,500 m operational ³ (deeper rated options available on request)
	Operating/storage temperature	-5 to 40°C/-20 to 55°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 ⁴	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

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

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

³ PIES operation depth is dependent on pressure sensor option.

⁴ Estimated weights for dual battery instrument.