

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

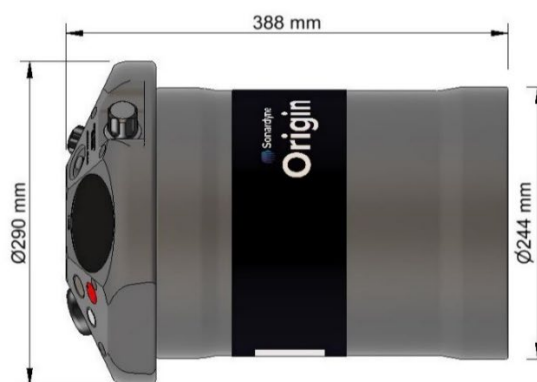
- Class leading 625 kHz ADCP
- Reliable and robust acoustic design using field proven transducers
- Integrated acoustic modem
- Rechargeable battery
- Configuration via Origin Scheduler, Portal Web UI and Topside
- Minimum cell size of 12 mm
- 0.6 to 60+ m profiling range
- 150 m operational depth rating
- 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 | 60+ 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) |
| Acoustic modem | Beam width/angle | ± 1 degrees / 25 degrees |
| | 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.