Teledyne RD Instruments

Workhorse Sentinel

Self-Contained 1200, 600, 300kHz ADCP

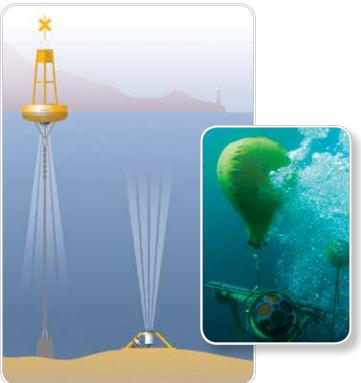
The Industry Standard for High Accuracy Data Collection

The self-contained SENTINEL is Teledyne RD Instruments' most popular and versatile Acoustic Doppler Current Profiler (ADCP) configuration, boasting thousands of units in operation in over 50 countries around the world.

By providing profiling ranges from 1 to 154m, the high-frequency Sentinel ADCP is ideally suited for a wide variety of applications. Thanks to Teledyne RDI's Broadband signal processing, the Sentinel also offers unbeatable precision, with unmatched low power consumption, allowing you to collect more data over an extended period.

The lightweight and adaptable Sentinel is easily deployed on buoys, boats, or mounted on the seafloor. Real-time data can be transmitted to shore via a cable link or acoustic modem, or data can be stored internally for short or long-term deployments. The Sentinel is easily upgraded to include pressure, bottom tracking, and/or directional wave measurement—for the ultimate data collection solution.





PRODUCT FEATURES

- **Versatility:** Direct reading or self contained, moored or moving, the Sentinel provides precision current profiling data when and where you need it most.
- A solid upgrade path: The Sentinel has been designed to grow with your needs. Easy upgrades include pressure, bottom tracking, and directional wave measurement.
- **Precision data:** Teledyne RDI's BroadBand signal processing delivers very low-noise data, resulting in unparalleled data resolution and minimal power consumption.
- A four-beam solution: Teledyne RDI's 4-beam design improves data reliability by providing a redundant data source in the case of a blocked or damaged beam; improves data quality by delivering an independent measure known as error velocity; and improves data accuracy by reducing variance in your data.
 - TELEDYNE RD INSTRUMENTS Everywhereyoulook[™]

A Teledyne Marine Company

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Self-Contained 1200, 600, 300 kHz ADCP

TECHNICAL SPECIFICATIONS

Water Profiling	Depth Cell Size ¹ Typical Range ² 12m 1200kHz		ge² 12m	Typical Range ² 50m 600kHz		Typical Range ² 110m 300kHz	
	Vertical Resolution 0.25m 0.5m 1m 2m 4m 8m	Range ³ 11m 12m 13m 15m ² see note ¹	Std. Dev. ⁴ 14.0cm/s 7.0cm/s 3.6cm/s 1.8cm/s	Range ³ 38m 42m 46m 51m ²	Std. Dev. ⁴ 14.0cm/s 7.0cm/s 3.6cm/s 1.8cm/s	Range ³ see note 1 83m 93m 103m 116m ²	Std. Dev. ⁴ 14.0cm/s 7.0cm/s 3.6cm/s 1.8cm/s
Long Range Mode	2m 4m 8m	19m	3.4m/s	66m	3.6cm/s	154m	3.7cm/s
Profile Parameters	Velocity accuracy0.3% of the water velo relative to ADCP ±0.3cVelocity resolution0.1cm/sVelocity range:±5m/s (default) ±20m/Number of depth cells1–255Ping rateUp to 10Hz		ADCP ±0.3cm/s ault) ±20m/s (max)	0.3% of the water velocity relative to ADCP ±0.3cm/s 0.1cm/s ±5m/s (default) ±20m/s (max) 1–255 Up to 10Hz		0.5% of the water velocity relative to ADCP ±0.5cm/s 0.1cm/s ±5m/s (default) ±20m/s (max) 1-255 Up to 10Hz	
Echo Intensity Profile	Vertical resolution Dynamic range Precision			Depth cell size, user configurable 80dB ±1.5dB			
Transducer and Hardware	Beam angle Configuration Internal memory Communications			20° 4-beam, convex Two PCMCIA card slots; one memory card included RS-232 or RS-422; ASCII or binary output at 1200-115,200 baud			
Power	DC input Number of batteries Internal battery voltage Battery capacity @ 0°C			20–50VDC. 1 internal battery pack 42VDC (new) 28VDC (depleted) 450 watt hrs			
Standard Sensors	Temperature (mounted on transducer) Tilt Compass (fluxgate type, includes built-in field calibration feature)			Range -5° to 45°C, Precision ±0.4°C, Resolution 0.01° Range ±15°, Accuracy ±0.5°, Precision ±0.5°, Resolution 0.01° Accuracy ±2° ⁵ , Precision ±0.5° ⁵ , Resolution 0.01°, Maximum tilt ±15°			
Environmental	Standard depth rating Operating temperature Storage temperature (without batteries) Weight in air Weight in water			200m; optional to 500m, 1000m, 6000m -5° to 45°C -30° to 60°C 13.0kg 4.5kg			
Software	TRDI's Windows™-based software included: WinSC −Data Acquisition System; WinADCP −Data Display and Export						
Available Options	 Memory: 2 PCMCIA slots, total 4GB • Pressure sensor • External battery case • High-resolution water-profiling modes Bottom tracking or surface referencing track • AC/DC power converter, 48VDC output • Pressure cases for depths up to 6000m Directional Wave Array • Acoustic Modem • Inductive Modem • Velocity for advanced post processing 						
Dimensions	228.0mm wide x 405.5mm long (line drawings available upon request)						

1 User's choice of depth cell size is not limited to the typical values specified.

2 Longer ranges available.

3 Profiling range based on temperature values at 5°C and 20°C, salinity = 35ppt.

4 BroadBand mode single-ping standard deviation (Std. Dev.).

5 <= 1.0° is commonly achieved after calibration.



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