

Workhorse Sentinel ADCP

Self-Contained 1200, 600 or 300 kHz

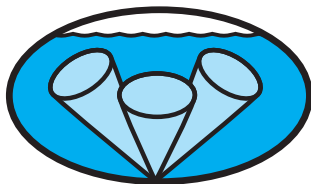


OVER 1,000 NOW OPERATING—WORLDWIDE

Our most popular instrument. Over 1000 Workhorse Sentinel ADCPs are profiling currents in 50 countries. Our customers choose it for its unbeatable precision in shallow waters, for its 175-meter profiling range and for an unmatched low power consumption that makes it ideal for year-long deployments.

Customers tell us they like it because it's light and easy to deploy on buoys, boats or on the bottom. Links to shore are by cable or modem and Sentinel is easily upgraded to measure pressure, to undertake bottom-tracking tasks or to be used as a directional wave gauge.

Frequency	Range	Cell Size	Long Range Mode	
			Range	Cell Size
1200 kHz	14m	1m	19m	2m
600 kHz	47m	2m	67m	4m
300 kHz	126m	8m	165m	8m



RD Instruments

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Included in a complete system:



Transducer and electronics: molded composite plastic transducer head with four beams at 20° from vertical in a convex configuration, temperature sensor, electronics assemblies, fluxgate compass, pitch and roll sensors.



Batteries: one 28-D cell alkaline battery pack (factory degaussed).



Memory: 10 MB PC card internal memory (upgradable to 440Mb).



Pressure case: composite plastic, 200m rated. End cap with wet-mateable connector and dummy plug.



Power supply for laboratory testing: 110-220V AC/24V DC power converter.



Input/output cable: 5 meter cable for communications and power.



Manuals and software: users guide; operation manual and easy-to-use Windows software package.



Spares parts and tool kit for maintenance.



Ship case: ruggedized compact case.

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Water Profiling

Depth	Typical range 12m ^b		Typical range 50m ^b		Typical range 110m ^b	
Cell Size ^a	1200kHz		600kHz		300kHz	
Vertical Resolution	Range (m)	Std. Dev. ^c (mm/s)	Range (m)	Std. Dev. ^c (mm/s)	Range (m)	Std. Dev. ^c (mm/s)
0.25m	11	182				
0.50m	12	66	36	182	see (a)	
1.0m	14	30	41	66	86	182
2.0m	15 ^b	18	47	30	99	66
4.0m	see (a)		52 ^b	18	112	30
8.0m					126 ^b	18

Notes: a) user's choice of depth cell size is not limited to the typical values specified, b) longer ranges available, c) BroadBand mode single-ping standard deviation (Std.Dev.)

Long Range Mode

	Range (m)	Depth Cell Size (m)	Std. Dev. (mm/s)
1200kHz	19	2	35
600kHz	67	4	38
300kHz	165	8	38

Profile Parameters

Velocity accuracy:

- 1200, 600: $\pm 0.25\%$ of the water velocity relative to the ADCP $\pm 2.5\text{mm/s}$
- 300: $\pm 0.5\%$ of the water velocity relative to the ADCP $\pm 5\text{mm/s}$

Velocity resolution: 1mm/s

Velocity range: $\pm 5\text{m/s}$ (default):
 $\pm 20\text{m/s}$ (maximum)

Number of depth cells: 1-128

Ping rate: 2 Hz (typical)

Echo Intensity Profile

Vertical resolution: depth cell size

Dynamic range: 80 dB

Precision: $\pm 1.5\text{dB}$ (relative measure)

Transducer and Hardware

Beam angle: 20°

Configuration: 4 beam, convex

Internal memory: Unit comes with 10Mb card, standard. Two PCMCIA card slots available (10-220Mb each).

Communications: Serial port selectable by switch for RS-232 or RS-422. ASCII or binary output at 1200-115,400 baud.

Standard Sensors

Temperature (mounted on transducer)

- Range: -5° to 45°C
- Precision: $\pm 0.4^{\circ}\text{C}$
- Resolution: 0.01°

Tilt

- Range: $\pm 15^{\circ}$
- Accuracy: $\pm 0.5^{\circ}$
- Precision: $\pm 0.5^{\circ}$
- Resolution: 0.01°

Compass (fluxgate type, includes built-in field calibration feature)

- Accuracy: $\pm 2^{\circ}$ e
- Precision: $\pm 0.5^{\circ}$ e
- Resolution: 0.01°
- Maximum tilt: $\pm 15^{\circ}$

Note: e) @ 60° magnetic dip angle, 0.5G total field

Power

DC input: 20-60V DC. Internal battery pack, external battery pack or external power supply.

Voltage: 42V DC (new)

28V DC (depleted)

Capacity: @ 0°C: 400 watt hours

Transmit

- 16W @ 35V (1200kHz)
- 37W @ 35V (600kHz)
- 115W @ 35V (300kHz)

Environmental

Standard depth rating: 200m. Optional to 6000m.

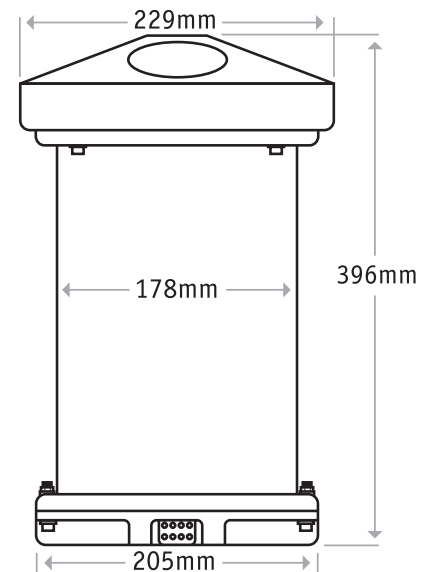
Operating temperature: -5° to 45°C

Storage temperature: -30° to 75°C

Weight in air: 13.0kg

Weight in water: 4.5kg

Dimensions



Software

Use RDI's Windows™-based software for the best results:

- WinSC — Data Acquisition
- WinADCP — Data Display and Export

Upgrades Available

- Memory - 10-220Mb PCMCIA cards
- Pressure sensor
- External battery case
- High resolution water profiling modes
- Bottom tracking
- AC/DC power converter, 48V DC output
- Pressure cases for depths up to 6000m

For More Information

Call, e-mail or visit our web page. Ask for our Primer about ADCPs.

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