



WORKHORSE SENTINEL ADCP

ACOUSTIC DOPPLER CURRENT PROFILERS

Workhorse Sentinel ADCP is acclaimed for its 175-meter profiling range and for an unmatched low power consumption that makes it ideal for year-long deployments.

Light and easy to deploy on buoys, boats or on the bottom., the Workhorse Sentinel ADCP links to shore by cable or modem.

Sentinel is easily upgraded to measure pressure, undertake bottom-tracking tasks or to be used as a directional wave gauge.



TECHNICAL SPECIFICATION

Water Profiling

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

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

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: $\pm 2^\circ\text{e}$
 • Precision: $\pm 0.5^\circ\text{e}$
 • 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

Voltage:

pack, external battery pack or external power supply.

42V DC (new)

28V DC (depleted)

Capacity:

@ 0°C: 400 watt hours

Transmit

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

Software

RDI's Windows™-based software:

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

Note: Dynamic Positioning Services reserve the right to amend this specification without prior notice.