

Teledyne RD Instruments
Acoustic Doppler Products

**WORKHORSE
MONITOR
ADCP**

MARINE MEASUREMENTS


NAVIGATION

WATER RESOURCES

Workhorse Monitor

DIRECT-READING 1200, 600, or 300 kHz ADCP

Real-time current monitoring



The **Monitor** is Teledyne RD Instruments' most popular direct-reading Acoustic Doppler Current Profiler (ADCP). The unit is typically bottom frame-mounted and hard-wired to shore to provide real-time monitoring of coastal currents. The Monitor's high data accuracy and reliability make it a favorite for deployments in high-volume traffic areas such as ports and harbors, where the data is often integrated into a Vessel Traffic Monitoring System. In fact, the Monitor has been selected for most major port programs undertaken in the United States.

The Monitor offers a choice of three frequencies and ranges, to meet a wide array of data requirements. The unit also offers a flexible upgrade path, which includes an external battery pack, pressure sensor, bottom tracking capability for moving boat applications, and directional wave measurement.



The Workhorse Monitor offers:

- **Extreme accuracy and reliability:** The Monitor is ideally suited for the most demanding environments, including high traffic areas such as ports and harbors.
- **Versatility:** This direct reading unit can easily be upgraded to tackle a wide variety of coastal applications. Typical upgrades include pressure sensor, external battery pack, bottom tracking, and directional wave measurement—a single instrument can do it all!
- **Precision data:** Teledyne RDI's patented BroadBand signal processing delivers very low-noise data, resulting in unparalleled data resolution and minimal power consumption.
- **A four-beam solution:** Teledyne RDI's patented 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**

A Teledyne Technologies Company

MEASURING WATER IN MOTION AND MOTION IN WATER

Workhorse Monitor

DIRECT-READING 1200, 600, OR 300 kHz ADCP



Technical Specifications

Water Profiling

Depth	Typical Range ² 12m		Typical Range ² 50m		Typical Range ² 110m	
	1200kHz		600kHz		300kHz	
Cell Size ¹						
Vertical Resolution	Range ³	Std. Dev. ⁴	Range ³	Std. Dev. ⁴	Range ³	Std. Dev. ⁴
0.25m	11–14m	12.9cm/s				
0.5m	13–16m	6.1cm/s	39m	12.9cm/s	see note ¹	
1m	14–18m	3.0cm/s	43m	6.1cm/s	92–71m	12.8cm/s
2m	15–20m ²	2.0cm/s	47m	3.0cm/s	102–78m	6.1cm/s
4m	see note ¹		52m ²	2.0cm/s	113–86m	3.0cm/s
8m					126–95m ²	2.0cm/s

¹User's choice of depth cell size is not limited to the typical values specified; ²Longer ranges available; ³Profiling range based on temperature values at 5°C and 20°C, salinity = 35ppt; ⁴BroadBand mode single-ping standard deviation (Std. Dev.).

Long Range Mode

	Range (m)	Depth Cell Size (m)	Std. Dev. (cm/s)
1200kHz	24	2	3.8
600kHz	70	4	4.2
300kHz	165	8	4.2

Profile Parameters

Velocity accuracy:

- **1200, 600:** 0.3% of the water velocity relative to the ADCP ± 0.3 cm/s
- **300:** 0.5% of the water velocity relative to the ADCP ± 0.5 cm/s

Velocity resolution: 0.1cm/s

Velocity range: ± 5 m/s (default)
 ± 20 m/s (maximum)

Number of depth cells: 1–128

Ping rate: 2Hz (typical)

Echo Intensity Profile

Vertical resolution: Depth cell size

Dynamic range: 80dB

Precision: ± 1.5 dB

Transducer and Hardware

Beam angle: 20°

Configuration: 4-beam, convex

Internal memory: Two PCMCIA card slots; no memory card included

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: ± 0.4 °C

Resolution: 0.01°

Tilt: Range: ± 15 °

Accuracy: ± 0.5 °

Precision: ± 0.5 °

Resolution: 0.01°

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

Accuracy: ± 2 °⁵

Precision: ± 0.5 °⁵

Resolution: 0.01°

Maximum tilt: ± 15 °

⁵ $\leq \pm 1.0$ ° is commonly achieved after calibration

Power

Input power: 20–50VDC

Environmental

Standard depth rating:

200m; optional to 6000m

Operating temperature*: -5° to 45°C

Storage temperature without batteries: -30° to 60°C

Weight in air: 7.6kg

Weight in water: 3.0kg

* Without batteries

Software

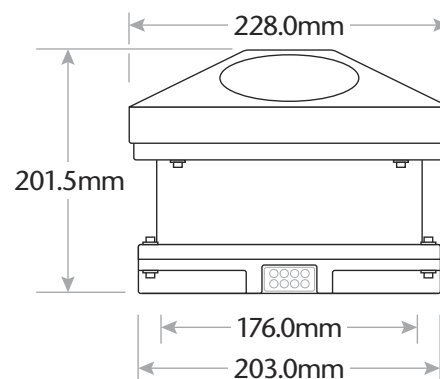
Teledyne RDI's Windows™-based software included:

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

Upgrades Available

- Memory: 2 PCMCIA slots; total 2GB
- Pressure sensor
- External battery case
- High-resolution water-profiling modes
- Bottom tracking
- AC/DC power converter, 48VDC output
- Conversion kit for internal power supply and memory
- Directional Waves Array

Dimensions



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www.rdinstruments.com

Teledyne RD Instruments

9855 Businesspark Avenue, San Diego, CA 92131 USA

Tel. +1-858-693-1178 • Fax +1-858-695-1459 • E-mail: sales@rdinstruments.com

Les Nertieres 5 Avenue Hector Pintus 06610 La Gaude France

Tel. +33-49-211-0930 • Fax +33-49-211-0931 • E-mail: rdi@rdieurope.com

