



# Workhorse Monitor

DIRECT-READING 1200, 600, 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 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.*

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## Technical Specifications

### Water Profiling

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

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

<sup>2</sup>Longer ranges available.

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

<sup>4</sup>Broadband 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  $\pm 0.3$ cm/s
- **300:** 0.5% of the water velocity relative to the ADCP  $\pm 0.5$ cm/s

**Velocity resolution:** 0.1cm/s

**Velocity range:**  $\pm 5$ m/s (default)  
 $\pm 20$ m/s (maximum)

**Number of depth cells:** 1-255

**Ping rate:** Up to 10Hz

## Echo Intensity Profile

**Vertical resolution:** Depth cell size

**Dynamic range:** 80dB

**Precision:**  $\pm 1.5$ 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 1200-115,200 baud.

## Standard Sensors

**Temperature** (mounted on transducer):

Range: -5° to 45°C

Precision:  $\pm 0.4$ °C

Resolution: 0.01°

**Tilt:** Range:  $\pm 15$ °

Accuracy:  $\pm 0.5$ °

Precision:  $\pm 0.5$ °

Resolution: 0.01°

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

Accuracy:  $\pm 2$ °<sup>5</sup>

Precision:  $\pm 0.5$ °<sup>5</sup>

Resolution: 0.01°

Maximum tilt:  $\pm 15$ °

<sup>5</sup> $\leq \pm 1.0$ ° 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:** 7.0kg

**Weight in water:** 3.0kg

## Software

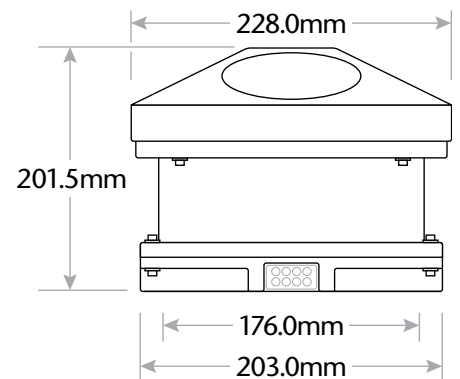
Teledyne RDI's Windows™-based software included:

- 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 reference track
- AC/DC power converter, 48VDC output
- Conversion kit for internal power supply and memory
- Directional Waves Array

## Dimensions



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