



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 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, 300 kHz ADCP



Technical Specifications

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

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

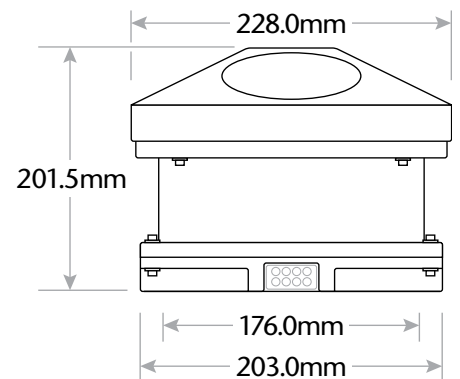
Teledyne RDI's Windows™-based software included:

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

Available Options


- Memory: 2 PCMCIA slots; total 4GB
- 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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A Teledyne Technologies Company
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 Free 24/7 emergency support

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