

Teledyne RD Instruments

# 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.



### PRODUCT FEATURES

- **Extreme accuracy and reliability:** The Monitor is ideally suited for the most demanding environments, including high traffic areas such as ports and harbors.
- **Precision data:** Teledyne RDI's Broadband signal processing delivers very low-noise data, resulting in unparalleled data resolution and minimal power consumption.
- **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!
- **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

<b>Water Profiling</b>	Depth Cell Size <sup>1</sup>	Typical Range <sup>2</sup> 12m <b>1200kHz</b>		Typical Range <sup>2</sup> 50m <b>600kHz</b>		Typical Range <sup>2</sup> 110m <b>300kHz</b>	
	Vertical Resolution	Range <sup>3</sup>	Std. Dev. <sup>4</sup>	Range <sup>3</sup>	Std. Dev. <sup>4</sup>	Range <sup>3</sup>	Std. Dev. <sup>4</sup>
	0.25m	11–15m	12.9cm/s				
	0.5m	12–16m	6.1cm/s	38–52m	12.9cm/s	see note <sup>1</sup>	
	1m	14–17m	3.0cm/s	42–56m	6.1cm/s	83–117m	12.8cm/s
	2m	15–19m <sup>2</sup>	2.0cm/s	46–61m	3.0cm/s	93–128m	6.1cm/s
	4m	see note <sup>1</sup>		52–67m <sup>2</sup>	2.0cm/s	104–141m	3.0cm/s
8m					116–154m <sup>2</sup>	2.0cm/s	
<b>Long Range Mode</b>	2m	24m	3.8m/s				
	4m			70m	4.2cm/s		
	8m					165m	4.2cm/s
<b>Profile Parameters</b>	Velocity Accuracy	0.3% of water velocity relative to ADCP ±0.3cm/s		0.3% of water velocity relative to ADCP ±0.3cm/s		0.5% of water velocity relative to ADCP ±0.5cm/s	
	Velocity resolution	0.1cm/s		0.1cm/s		0.1cm/s	
	Velocity range	±5m/s default, ±20m/s max		±5m/s default, ±20m/s max		±5m/s default, ±20m/s max	
	Number of depth cells	1–128		1–128		1–128	
	Ping rate	2Hz (typical)		2Hz (typical)		2Hz (typical)	
<b>Echo Intensity Profile</b>	Vertical resolution	Depth cell size, user configurable					
	Dynamic range	80dB					
	Precision	±1.5dB					
<b>Transducer and Hardware</b>	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					
<b>Environmental</b>	Standard depth rating	200m; optional to 500m, 1000m, 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					
<b>Software</b>	TRDI's Windows™-based software included: <b>WinSC</b> —Data Acquisition System; <b>WinADCP</b> —Data Display and Export; <b>Velocity</b>						
<b>Power</b>	Input Power	20–50VDC					
<b>Standard Sensors</b>	Temperatures (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° <sup>5</sup> , Precision ±0.5° <sup>5</sup> , Resolution 0.01°, Maximum tilt ±15°					
<b>Available Options</b>	<ul style="list-style-type: none"> <li>• Memory: 2 PCMCIA slots; total 4GB</li> <li>• Pressure sensor</li> <li>• External battery case</li> <li>• High-resolution water-profiling modes</li> <li>• Bottom tracking</li> <li>• AC/DC power converter, 48VDC output</li> <li>• Conversion kit for internal power supply and memory</li> <li>• Directional Waves Array</li> </ul>						
<b>Dimensions</b>	228.0mm wide x 201.5.0mm long (line drawings available upon request)						

<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.).

<sup>5</sup> <±1.0° is commonly achieved after calibration.