Workhorse H-ADCP

Horizontal Acoustic Doppler Current Profilers

TECHNICAL SPECIFICATIONS

		H-ADCP 300	H-ADCP 600	H-ADCP-N 300
Cell Size[1]		300kHz nominal (LR mode[4]) 148m (187m)	600kHz nominal (LR mode[4]) 60m (75m)	300kHz nominal (LR mode[4]) 178m (221m)
Horizontal Resolution		Range (m) Nominal / Long; Std Dev (cm/s) Nominal / Long	Range (m) Nominal / Long; Std Dev (cm/s) Nominal / Long	Range (m) Nominal / Long; Std Dev (cm/s) Nominal / Long
	0.5m		41 / 54; 11.03 / 23.14	
	1.0m	99 / 134; 10.97 / 23.01	45 / 59; 5.66 / 11.87	126 / 164; 13.55 / 28.44
	2.0m	108 / 145; 5.62 / 11.74	49 / 64; 2.89 / 6.05	136 / 176; 6.94 / 14.51
	4.0m	120 / 158; 2.87 / 6.02	54 / 70; 1.36 / 2.83	149 / 190; 3.55 / 7.44
	8.0m	134 / 173; 1.36 / 2.89	60 / 75; 0.6 / 1.22	163 / 205; 1.73 / 3.68
	16.0m	148 / 187; 0.6 / 1.32		178 / 221; 0.77 / 1.65
	ARL*	12/1 (range/tonal depth)	12/1 (range/tonal depth)	19/1 (range/tonal depth)
Profile Parameters	Velocity accuracy	±0.5% ±5mm/sec	±0.25% ±2.5mm/sec	±0.5% ±5mm/sec
	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)
	No.of depth cells	1–128	1–128	1–128
	Error velocity data rejection	Yes; required on a single-ping basis to screen errors from passing vessels		
Transducer and Hardware	Beam width	2.1°	1.1°	1.1°
	Beam angle	25°	25°	20°
System Weight	In air	16kg	14kg	72.1kg
	In water	10kg	8.6kg	56.2kg
Environmental	Standard depth rating	200m		
	Operating temperature	-5° to 45°C		
	Storage temperature	-30° to 75°C		
Power/Communication	DC input: 20-50 VDC	Serial port is switch-selectable for RS-232 or RS-422, ASCII or binary output at 1200–115,200 baud		
Power	DC input	20–50VDC.		
Standard Sensors	Temperatures (mounted on transducer)	Range -5° to 45°C, Precision ±0.4°C, 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°		
Available Options	• Memory: 2 x 2GB PCMCIA slots, total 4GB • Pressure sensor • Directional waves array (available on the 300 kHz H-ADCP-N only)			
Dimensions	Special configuration drawings available on request			

1 User's choice of cell size is not limited to the typical values specified.
2 Range, which depends on cell size, is specified here for broadband/narrowband mode at 5° C, typical ocean backscatter, and nominal 48VDC input power.
3 Broad bandwidth mode single-ping standard deviation.
4 Range, which depends on cell size, is specified here for narrow bandwidth mode at 5°C, typical ocean backscatter, and nominal 48VDC input power. Default configuration in LR mode (WB=1).
5 @ 60° magnetic dip angle. 0.5G total field.
* Aspect ratio limitation.

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A Teledyne RD Instruments Marine Measurements Datasheet

Teledyne RD Instruments

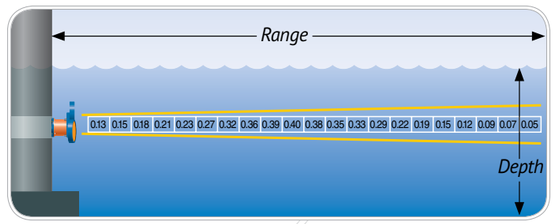
Workhorse H-ADCP

Horizontal Acoustic Doppler Current Profilers

Horizontal Current Profiling and Waves Measurement in One Package

Teledyne RD Instruments' WORKHORSE HORIZONTAL ACOUSTIC DOPPLER CURRENT PROFILER (H-ADCP) is an acoustic monitoring system that "looks" out horizontally from its mounting structure to measure near-surface water currents and optional multi-directional waves.

This revolutionary tool utilizes Teledyne RDI's Broadband signal processing to obtain an optimal combination of range, resolution, and data quality which cannot be obtained using narrowband products. The Workhorse H-ADCP measures currents at 128 individual points at up to 200 meters horizontal range, providing a detailed illustration of the complete flow structure centered at a single depth. The 300 kHz H-ADCP can be upgraded to add wave height and direction capabilities, fulfilling all your monitoring needs.



The H-ADCP looks horizontally across a body of water measuring current and directional waves at numerous locations.

PRODUCT FEATURES

Operational Advantages
- Increased Range
- Improved Data Reliability
- Combined Current and Waves
- Real-Time Data
- Increased Data
- Robust Construction
- Ease of Operation
- Remote Measurements
- Ease of Mounting

Applications
- Offshore Oil and Gas Platforms
- Renewable Energy
- Vessel Traffic Safety

A Teledyne Marine Company

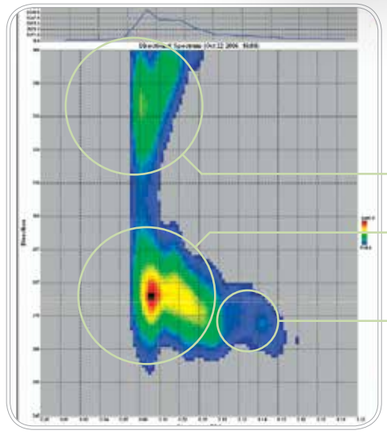
TELEDYNE RD INSTRUMENTS Everywhereyoulook™

Horizontal Current Profiling and Waves Measurement in one package.

NINE KEY OPERATIONAL ADVANTAGES

- **Increased Range:** Our 300 kHz H-ADCP combines a lower frequency with a narrow <1° beam to ensure an unparalleled profiling range of 200 meters or more for those applications requiring extended range. For smaller waterways our higher-frequency 600 kHz system delivers up to 85 meters horizontal range.
- **Improved Data Reliability:** Teledyne RD Instruments' unique three-beam configuration provides a third beam for quality assurance, as well as data redundancy in the event of a blocked or damaged beam, ensuring the unmatched delivery of accurate data.
- **Combined Current and Waves:** The narrow <1° beam combined with extended range capability allows the 300 kHz H-ADCP to be upgraded to include our patented multi-directional waves-measurement option, providing you with a complete monitoring solution.
- **Real-Time Data:** The H-ADCP provides unobtrusive real-time data for real-time decision-making.
- **Increased Data:** The H-ADCP provides users with the capability to measure from 1 to 128 data points across a body of water, providing a highly detailed and accurate profile of the flow structure.
- **Robust Construction:** The offshore environment is a demanding place, so we've designed the H-ADCP to rise to the challenge. The unit's sturdy design ensures a long life, and no calibration is ever required.
- **Ease of Operation:** The H-ADCP is pre-configured for simple operation to ensure optimum performance with a minimal learning curve. System operation is further aided by an easy-to-use installation guide and intuitive WindowsTM software.
- **Remote Measurements:** The H-ADCP is ideal for mounting to large structures because measurements are made remotely, at ranges well beyond the influence of the structure on nearby current and wave fields.
- **Ease of Mounting:** Horizontal orientation means no cables are exposed to damage on the seafloor.

The Teledyne RDI 300-kHz Workhorse H-ADCP delivers up to 165m of horizontal profiling range.



H-ADCP Waves Array data from Bentos Chile

H-ADCP Waves Data Directional spectrum shows "multi-directional" swell.

H-ADCP Waves Array data from Bentos Chile

The Teledyne RD Instruments 300 kHz Workhorse H-ADCP-N delivers up to 200m of horizontal profiling range and optional multi-directional waves measurement.

KEY HORIZONTAL ADCP APPLICATIONS

1 **Offshore Oil and Gas Platforms:** The 300 kHz H-ADCP collects critical surface current and multi-directional waves data for a real-time understanding of your offshore environment and the elements affecting your structure and production schedule.

2 **Renewable Energy:** The 300 kHz H-ADCP can be mounted on an offshore structure to provide real-time current and wave data for field site assessments and environmental monitoring.

3 **Vessel Traffic Safety:** The WorkhorseH-ADCP provides port managers and pilots with the real-time environmental data needed for vessel traffic safety, efficiency, and ship-docking applications.