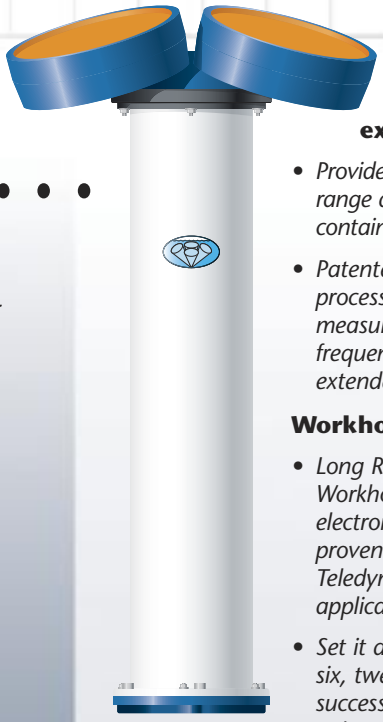
Teledyne RD Instruments
Acoustic Doppler Products
WORKHORSE LONG RANGER

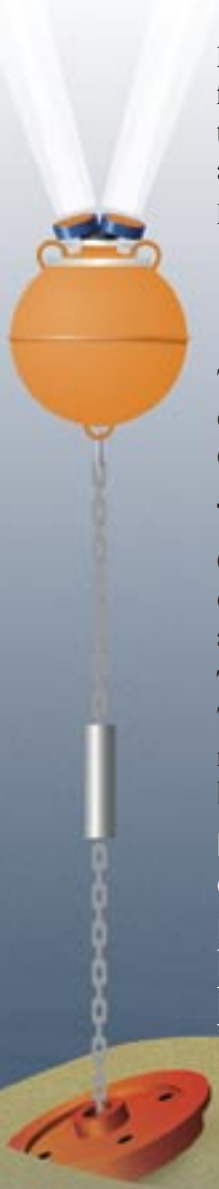
Workhorse Long Ranger

75-kHz ADCP

MARINE MEASUREMENTS
NAVIGATION
WATER RESOURCES

The name says it all…





Long-range and long-term, the **Long Ranger** is the best choice for gathering detailed data on seasonal and annual current structure fluctuations for scientific research and offshore oil and gas applications.

Hundreds of Long Ranger units are currently deployed on:

- environmental monitoring buoys
- offshore oil rigs
- polar research moorings

The highly flexible Long Ranger unit is available in three product configurations: self-contained, direct reading, or remote-head—depending on your application requirements.

Third-party solutions

Collect data at your desk: the Long Ranger is designed to operate in real-time data mode. Third-party products are available for acoustic and radio data transfer direct to your location.

Turnkey deployment solution: Teledyne RDI and Flotation Technologies have joined forces to offer our customers turnkey mooring solutions, including a variety of cages, flotation, and bottom mounts.

Programmable modes for deployment flexibility

Mode	High Power	Low Power
Long range	*603m*	*353m*
High precision	*488m*	*188m*

Cost-effective extended capability

- *Provides the longest profiling range available from a self-contained ADCP.*
- *Patented BroadBand signal processing produces precise measurement, allowing frequent sampling with extended battery life.*

Workhorse reliability

- *Long Ranger inherits the Workhorse family electronics that have been proven in thousands of Teledyne RDI ADCP applications.*
- *Set it and forget it: Three, six, twelve-month-long successful deployments from polar waters to the tropics.*

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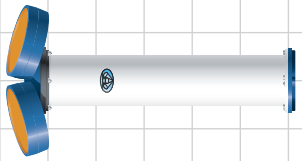
MEASURING WATER IN MOTION AND MOTION IN WATER

Workhorse Long Ranger

75-kHz ADCP



Technical Specifications

Mode	Depth Cell Size	Std. Dev.[1] (mm/s)	Range[2,3,4] (m)
High Resolution	*4*	*129*	*418*
	8	*61*	*451*
	16	*30*	*488*
	32	*20*	*530*
Long Range	*4*	*265*	*528*
	8	*126*	*563*
	16	*61*	*604*
	32	*41*	*648*

[1] Standard deviation is ADCP uncertainty given a single ping.
[2] Maximum range is a nominal value based on 5°C, 35ppt, and typical ocean backscatter; actual range will vary depending on environmental conditions.
[3] Assuming the ADCP is pointed vertically (0° tilt), the maximum range is limited to 94% of the distance to the surface.
[4] Assumes a power supply of 32VDC (typical average battery voltage).

Profile Parameters

Not designed for use on moving vessels

Velocity accuracy: ± 1% ± 5mm/s.
Velocity resolution: 1mm/s
Velocity range: ± 5m/s default
± 10m/s max
Depth cell size: 4–32m
Number of depth cells: 1–128
Ping rate: 1Hz (typical)

Echo Intensity Profile

Vertical resolution: depth cell size
Dynamic range: 80dB
Precision: ±1.5dB (relative measure)

Transducer and Hardware

Beam angle: 20°
Beam width: 4°
Configuration: 4-beam, convex
Internal memory: Up to 2gB on two PCMCIA slots; one memory card included
Communications: RS-232 or RS-422; ASCII or binary output at 1200–115,400 baud.

Power

DC input: 20–50VDC. Four internal alkaline battery packs.
Voltage: 42V DC(new) 28VDC (depleted)
Capacity Each pack @ 0°C: 450 watt hours/1900 Wh total

Standard Sensors

Pressure Sensor:
Maximum range: 2000m
Accuracy: ±5m

Temperatures (mounted on transducer):
Range: -5° to 45°C
Precision: ±0.4°C
Resolution: 0.01°

Tilt: Range: ±50°
Accuracy: ±0.5°
Precision: ±1.0°
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°

Pressure Sensor:
Accuracy: ±5m

[5] <±1.0° is commonly achieved after calibration

Environmental

Standard depth rating: 1500m (3000m optional)
Operating temperature: -5° to 45°C
Storage temperature without batteries: -30° to 60°C
Weight in air: SC 86kg, DR 58kg, ExtBC 39kg
Weight in water: SC 55kg, DR 36kg, ExtBC 16kg

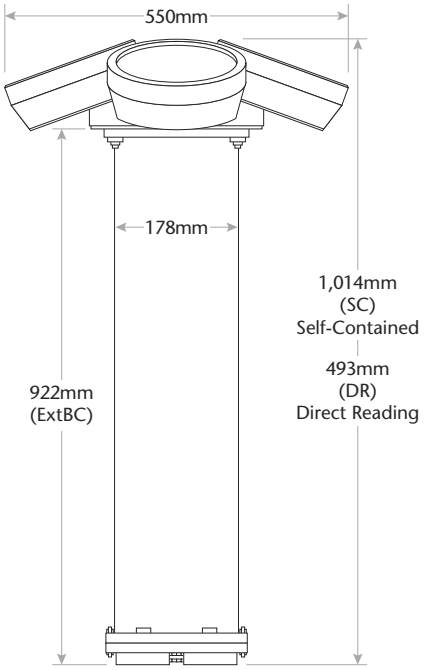
Software

Use Teledyne RDI's Windows™-based software for the best results:
- WinSC—Data Acquisition
- WinADCP—Data Display and Export
- Teledyne RDITools—Utilities

Available Options

- 3000m pressure-rated configuration
- External Battery Case (ExtBC)
- Remote head configurations
- Memory: 2 PCMCIA slots, total 2GB

Dimensions



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RD INSTRUMENTS
A Teledyne Technologies Company
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: rdisales@teledyne.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

Specifications subject to change without notice. Rev. 0306