

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.

Don't sweat the details: RDI works with an array of qualified vendors to support your mooring applications with a variety of cages, flotation, and bottom mounts.

Programmable modes for deployment flexibility

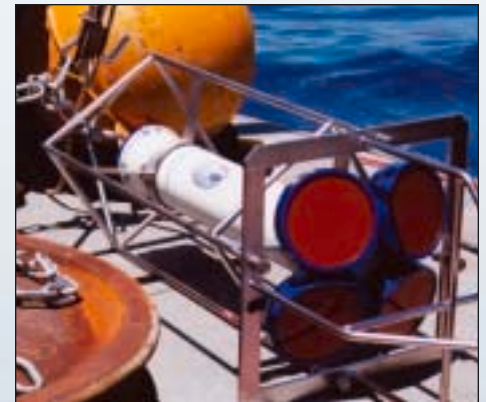
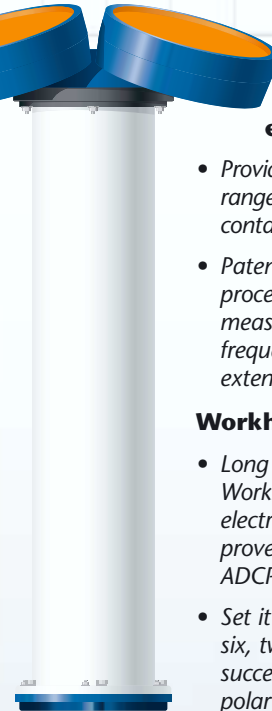
Mode	High Power	Low Power
Long range	603m	353m
High precision	488m	188m

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

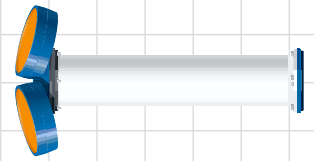
- Long Ranger inherits the Workhorse family electronics that have been proven in thousands of RDI ADCP applications.
- Set it and forget it: Three, six, twelve-month-long successful deployments from polar waters to the tropics.



RD Instruments
Acoustic Doppler Solutions

Workhorse Long Ranger

75-kHz ADCP



Technical Specifications

Typical Performance (maximum power)

Depth	Range, High	Std. Dev. ²	Range, Long	Std. Dev. ²
Cell Size ¹	Res. Mode	High Res. Mode	Range Mode	Long Range Mode
4m	418m	12.9cm/s	528m	26.5cm/s
8m	451m	6.1cm/s	563m	12.6cm/s
16m	488m	3.0cm/s	604m	6.1cm/s
32m	530m	2.0cm/s	648m	4.1cm/s

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

² Single-ping standard deviation (Std. Dev.).

Profile Parameters

Not designed for use on moving vessels

Velocity accuracy: $\pm 1\%$ of the water velocity $\pm 0.5\text{cm/s}$.

Velocity resolution: 0.1cm/s

Velocity range: $\pm 5\text{m/s}$ (default $\pm 10\text{m/s}$ (maximum))

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: $\pm 1.5\text{dB}$ (relative measure)

Transducer and Hardware

Beam angle: 20°

Configuration: 4-beam

Internal memory: 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: 20–60VDC. Four internal alkaline battery packs.

Voltage: 42V DC(new) 28VDC (depleted)

Capacity (each pack): @ 0°C: 400 Watt hours

Transmit at 35V:

- 1000W (max power)
- 80W (lower power, Long Range mode)
- 20W (low power, BroadBand mode)

Standard Sensors

Temperatures (mounted on transducer):

Range: -5° to 45°C

Precision: $\pm 0.4^\circ\text{C}$

Resolution: 0.01°

Tilt: Range: $\pm 15^\circ$
Accuracy: $\pm 0.5^\circ$
Precision: $\pm 0.5^\circ$
Resolution: 0.01°

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

Accuracy: $\pm 2^\circ$
Precision: $\pm 0.5^\circ$
Resolution: 0.01°
Maximum tilt: $\pm 15^\circ$

Pressure Sensor:

Accuracy: $\pm 5\text{m}$

Environmental

Standard depth rating: 1500m

Operating temperature: -5° to 45°C

Storage temperature: -30° to 75°C

Weight in air: SC 86kg, DR 58kg, ExtBC 39kg

Weight in water: SC 55kg, DR 36kg, ExtBC 16kg

Software

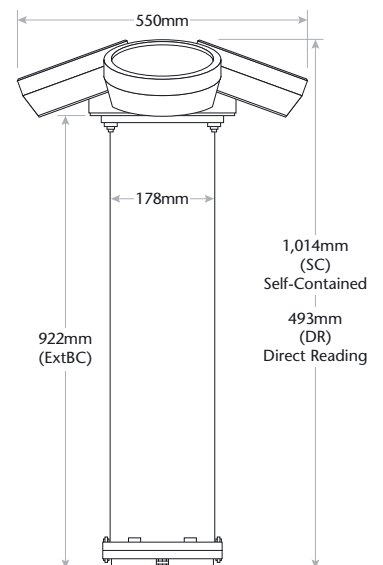
Use RDI's Windows™-based software for the best results:

- WinSC—Data Acquisition
- WinADCP—Data Display and Export
- RDITools—Utilities

Available Options

- 3000m pressure-rated configuration
- External Battery Case (ExtBC)
- Mooring accessories: In line and bottom mount accessories available from Flotation Technologies and Mooring Systems.
- Remote head configurations
- Memory: Up to 2 gigabytes

Dimensions



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