

Workhorse Long Ranger

75 kHz ADCP

Long-range, long-term, and reliable, 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.

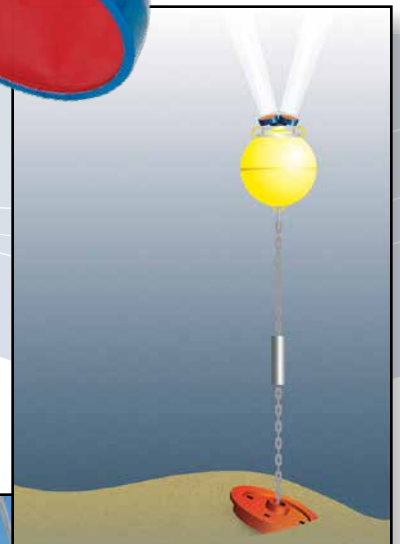
Third-party solutions

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.

Programmable modes for deployment flexibility

Mode	High Power	Low Power
Long range	600 m	434 m
High precision	503 m	267 m

Source: Plan ADCP 2.06



PRODUCT FEATURES

- **Precision data:** Broadband signal processing produces precise measurements, allowing for frequent sampling with extended battery life.
- **Proven reliability:** The Long Ranger inherits the Workhorse family of electronics, which have been proven in thousands of field applications.
- **Extended deployment life:** Set it and forget it. The Long Ranger can handle three, six or twelve month long deployments, from frigid polar waters to the balmy tropics.



TELEDYNE MARINE
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Workhorse Long Ranger 75 kHz ADCP



TECHNICAL SPECIFICATIONS

Mode (Maximum Power)	Depth Cell Size	Std Dev. ¹	Range ^{2,3,4}
High Resolution (wide bandwidth)	4 m	15.0 cm/s	432 m
	8 m	7.6 cm/s	465 m
	16 m	3.9 cm/s	503 m
	32 m	2.0 cm/s	545 m
Long Range (narrow bandwidth)	4 m	29.0 cm/s	525 m
	8 m	14.6 cm/s	560 m
	16 m	7.6 cm/s	600 m
	32 m	3.9 cm/s	644 m
Profile Parameters (not designed for moving vessels)	Velocity accuracy	± 1% ± 5 mm/s	
	Velocity resolution	1 mm/s	
	Velocity range	± 5 m/s default, ± 10 m/s max	
	Depth cell size	4–32 m	
	Number of depth cells	1–255	
	Ping rate	1 Hz (typical)	
Echo Intensity Profile	Vertical resolution	Depth cell size, user configurable	
	Dynamic range	80 dB	
	Precision	±1.5 dB (relative measure)	
Transducer and Hardware	Beam angle	20°	
	Beam width	4°	
	Configuration	4-beam, convex	
	Internal memory	Two PCMCIA card slots; two memory card included (4 GB)	
	Communications	RS-232 or RS-422; ASCII or binary output at 1200-115,200 baud	
	Power	DC input	20–50 VDC
Number of batteries		4 internal alkaline battery packs	
Internal battery voltage		42 VDC (new) 28 VDC (depleted)	
Battery capacity @0°C		450 watt hours each / 1800 watt hours total	
Standard Sensors	Pressure sensor	Maximum range 2000 m, Accuracy 0.25% of full scale	
	Temperature (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°	
Environmental	Standard depth rating	1500 m (3000 m optional)	
	Operating temperature	-5° to 45°C	
	Storage temperature without batteries	-30° to 60°C	
	Weight in air	SC 86 kg, DR 58 kg, ExtBC 39 kg ⁶	
	Weight in water	SC 55 kg, DR 36 kg, ExtBC 16 kg ⁶	
Software	Use Teledyne RDI's Windows™-based software for the best results: WinSC —Data Acquisition; WinADCP —Data Display and Export; Teledyne RDI Tools —Utilities; Velocity		
Available Options	<ul style="list-style-type: none"> • 3000 m Pressure-Rated Configuration • External Battery Case (Extbc) • Remote Head Configurations • Velocity for advanced post processing 		
Dimensions	550 mm wide x 1014 mm long (self-contained); 550 mm wide x 493 mm long (direct reading) (line drawings available upon request) ⁶		

Source: Plan ADCP 2.06

1 Standard deviation is ADCP uncertainty given a single ping.

2 Maximum range is a nominal value based on 5°C, 35 ppt, 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 32 VDC (typical average battery voltage).

5 <±1.0° is commonly achieved after calibration.

6 1500 m system.



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