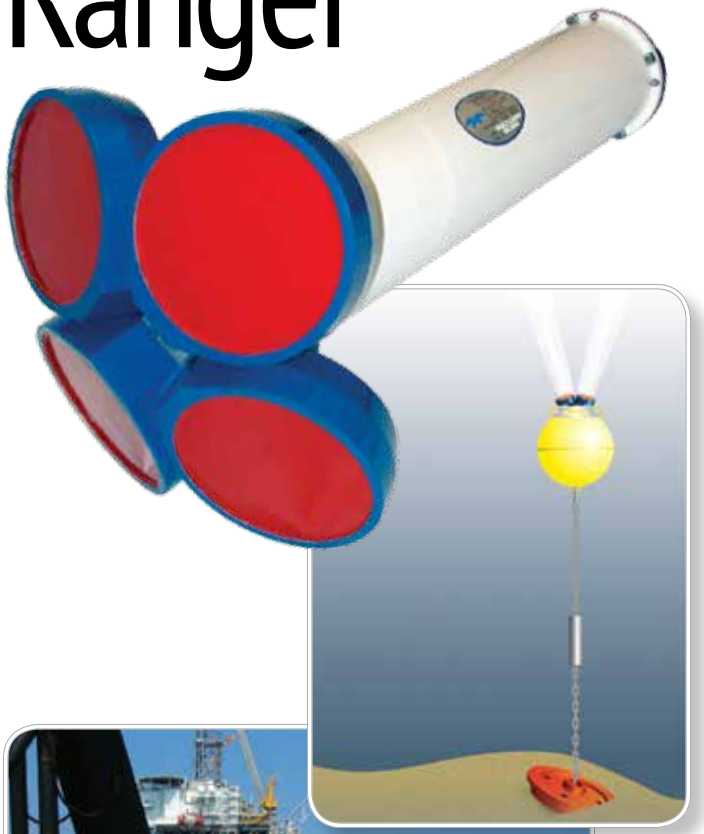
Teledyne RD Instruments

Workhorse Long Ranger

75 kHz ADCP



The Name Says It All

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	600m	434m
High precision	503m	267m

Source: Plan ADCP 2.06

PRODUCT FEATURES

- **Extended range:** As the name implies, the Long Ranger provides the longest proven profiling range (600m) available from a self-contained ADCP.
- **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 the the balmy tropics.

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TECHNICAL SPECIFICATIONS

Mode (maximium power)		Depth Cell Size	Std Dev.[1]	Range[2,3,4]
	High Resolution (wide bandwidth)	4m	15.0cm/s	432m
		8m	7.6cm/s	465m
		16m	3.9cm/s	503m
		32m	2.0cm/s	545m
	Long Range (narrow bandwidth)	4m	29.0cm/s	525m
		8m	14.6cm/s	560m
		16m	7.6cm/s	600m
		32m	3.9cm/s	644m

Source: Plan ADCP 2.06

Profile Parameters (not designed for 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, user configurable
	Dynamic range	80dB
	Precision	±1.5dB (relative measure)
Transducer and Hardware	Beam angle	20°
	Beam width	4°
	Configuration	4-beam, convex
	Internal memory	Two PCMCIA card slots; one memory card included
	Communications	RS-232 or RS-422; ASCII or binary output at 1200-115,200 baud
Power	DC input	20–50VDC
	Number of batteries	4 internal alkaline battery packs
	Internal battery voltage	42V DC(new) 28VDC (depleted)
	Battery capacity @0°C	450 watt hours each / 1800 watt hours total
Standard Sensors	Pressure Sensor	Maximum range 2000m, 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	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 RDI Tools**—Utilities; **Velocity**	
Available Options	• 3000M Pressure-Rated Configuration • External Battery Case (Extbc) • Remote Head Configurations • Memory: 2 PCMCIA Slots, Total 4GB • **Velocity** for advanced post processing	
Dimensions	550mm wide x 1014mm long (self-contained); 550mm wide x 493mm long (direct reading) *(line drawings available upon request)*	

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).
5 <±1.0° is commonly achieved after calibration.

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Specifications subject to change without notice.

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