Teledyne RD Instruments

Pinnacle 45

Long-Range Self-Contained and Real-Time ADCP

Pinnacle self-contained ADCP

Bringing the Deep Ocean to Light!

Teledyne RD Instruments has the largest number of long-range Acoustic Doppler Current Profilers in operation in the world.

Since 1997 Teledyne RD Instruments (TRDI) has been providing ADCPs that have been field-proven to profile beyond 1000 m from research vessels traveling at speeds >15 knots and from offshore oil and gas platforms deployed around the globe.

Evolving from this field-proven technology, we've designed the new Pinnacle 45, a 45 kHz phased-array ADCP that is capable of profiling ocean currents to 1000 m in a footprint typically associated with ADCPs achieving half of that range, greatly increasing portability and simplifying deployment.

The versatile Pinnacle 45 is designed to be mounted from an oil platform, inside or over the side of a vessel, in subsurface and surface buoys, as well as bottom and in-line frames—anywhere long-range profiling is required.

Pinnacle real-time ADCP

PRODUCT FEATURES

- **Swappable Configuration:** Convert from Self-Contained to Real-Time without an additional purchase.
- **Adaptable:** Independent or Interlaced long range and high-resolution modes allow users to optimize their system for unique deployment requirements, at ranges of up to 1000 m, offering the best of both worlds in a single instrument.
- **Continuous Sampling:** Pinnacle's 4 beams ping simultaneously (as opposed to individually), allowing for simultaneous sampling of a 1000m current profile.
- **Easy Data Access:** Redundant MicroSD memory cards for added data security—one resides in the electronics for data download and another in the battery compartment allowing for easy data access.
- **Compass Enhancements:** Pinnacle includes both heading field calibration and magnetometer data, allowing you to utilize either or both and to turn your mooring faster. Field calibrate your compass pre-deployment or use the magnetometer data and apply a correction post-deployment.
- **Deployment Status Indicator:** External LED light ensures you know the system is operational when deployed.
- **Advanced Monitoring:** Health Monitoring and leak detection provide users with the peace of mind that their system is operating as intended.
- **Increased Data:** 20° phased-array beam allows you to measure within 6% of range to surface (air/sea or bottom), closing the gap on missed data.
- **Rugged and Robust:** Independent main electronics housing and battery compartment and a no metal in contact with the water designed housing and transducer limit the risk of damage from leaks.
- **Long Life:** Alkaline or lithium battery compatible, with 18-month deployment durations possible on 4 Li batteries.
- **Versatile:** Collect stored or real-time data from stationary or moving platforms, including rigs, vessels and moorings.
- **Mooring Compatibility:** Pinnacles hardware fits into most existing mooring designs offered by key manufacturers.

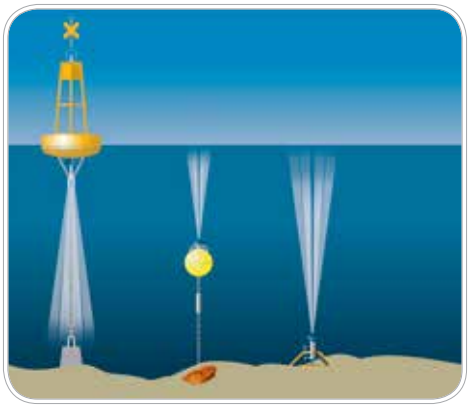
Pinnacle 45

Long-Range Self-Contained and Real-Time ADCP

TECHNICAL SPECIFICATIONS

Water Profiling	**Long Range Mode 45 kHz**		
	Vertical Resolution Cell Size[1]	Max Range[2]	Precision[3]
	16 m	900 m	40 cm/s
	32 m	1000 m	22 cm/s
	High Precision Mode 45 kHz		
	Vertical Resolution Cell Size[1]	Max Range[2]	Precision[3]
	16 m	450 m	17 cm/s
	32 m	550 m	9 cm/s
Profile Parameters	Velocity accuracy (typical)	±1.0% ±0.5 cm/s	
	Velocity range	±7 m/s	
	Number of depth cells	1–255	
	Typical ping rate	0.4 Hz	
Echo Intensity Profile	Vertical resolution		Depth cell size, user configurable
	Dynamic range		80 dB
	Accuracy		±1 dB
Transducer and Hardware	Beam angle		20°
	Configuration		4-beam, phased array
	Communications		RS-232 or RS-422 at 1200-115,200 baud Hex-ASCII or binary and Ethernet
System Power	DC power		24-50 VDC, 150 W
Software	Use TRDI's Windows®-based software for best results: **PINNACLE Utilities**—test/setup deployment; **VMDAS**— Vessel-Mount Data Acquisition System; **WinADCP**—Data Display and Export		
Options	**Velocity** for advanced post-processing; **Bottom Track** for moving-vessel applications		
Environmental	Operating temperature		-5° to 45°C
	Storage temperature		-30° to 60°C
	Standard depth rating		2000 m
Standard Sensors	Temperature (mounted on transducer)		Range -5° to 45°C; Accuracy ±0.5°C; Resolution 0.1°
	Tilt		Range ±50°; Accuracy ±1.0°; Precision ±0.1°; Resolution 0.1°
	Compass (fluxgate type)[4]		Accuracy ±2°; Precision ±0.3°; Resolution 0.01°; Maximum tilt ±50°
	Pressure		Range 6000 m; Resolution 0.01 m; Accuracy 0.1% FS
System Components	Fully integrated 45 kHz phased-array transducer and system electronics in a plastic coated aluminum housing, external AC/DC power supply with Ethernet and serial ports, 50 or 100 m cable for power and communications, data acquisition software package, 2 and 4 battery pack options.		
Dimensions	*Line drawings available upon request*		

1 User's choice of depth cell size is not limited to the typical values specified.
2 Ranges are typical and vary with situation.
3 Single ping standard deviation (horizontal).
4 Heading in degrees as well as magnetometer output.



TELEDYNE
RD INSTRUMENTS
Everywhereyoulook™
www.rdinstruments.com

Teledyne RD Instruments
14020 Stowe Drive, Poway, CA 92064 USA
Tel. +1-858-842-2600 • Fax +1-858-842-2822 • Email: rdisales@teledyne.com
Les Nertieres 5 Avenue Hector Pintus 06610 La Gaude France
Tel. +33-49-211-0930 • Fax +33-49-211-0931 • Email: rdie@teledyne.com