

# Pinnacle 45

## Long-Range Self-Contained & Real-Time ADCP

**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*



*Pinnacle  
self-contained  
ADCP*

## PRODUCT FEATURES

- **Swappable Configuration:** Convert from Self-Contained to Real-Time in the field 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 in a corrosion-resistant housing and transducer to limit the risk of leak damage.
- **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.

\* The technologies used in the Pinnacle 45 are currently under patent protection (U.S. Patent No. 11,333,757). TRDI will aggressively utilize its full rights under patent law to protect its interest in these technologies.

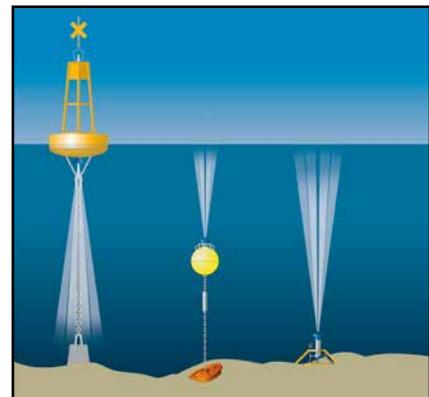
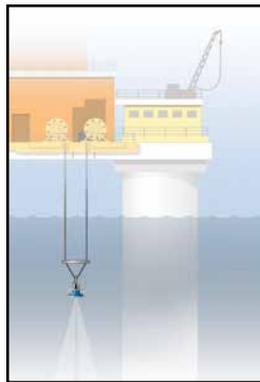
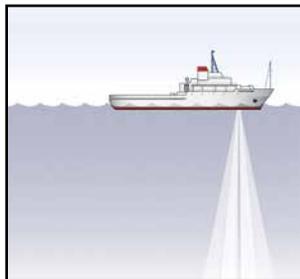


# Pinnacle 45 Long-Range Self-Contained and Real-Time ADCP



## TECHNICAL SPECIFICATIONS

<b>Water Profiling</b>	<b>Long Range Mode 45 kHz</b>		
	Vertical Resolution Cell Size <sup>1</sup>	Max Range <sup>2</sup>	Precision <sup>3</sup>
	16 m	900 m	40 cm/s
	32 m	1000 m	22 cm/s
	<b>High Precision Mode 45 kHz</b>		
	Vertical Resolution Cell Size <sup>1</sup>	Max Range <sup>2</sup>	Precision <sup>3</sup>
	16 m	450 m	17 cm/s
	32 m	550 m	9 cm/s
<b>Profile Parameters</b>	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	
<b>Echo Intensity Profile</b>	Vertical resolution	Depth cell size, user configurable	
	Dynamic range	80 dB	
	Accuracy	±1 dB	
<b>Transducer and Hardware</b>	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	
<b>System Power</b>	DC power	24-50 VDC, 150 W	
<b>Software</b>	<b>PINNACLE Utilities</b> —test/setup deployment; data display and export. <b>VMDAS</b> — Vessel-Mount Data Acquisition System.		
<b>Options</b>	<b>Bottom Track</b> for moving-vessel applications		
	<b>50 or 100 m Cable</b> for power and communications <b>4-Battery Pack</b> option		
<b>Environmental</b>	Operating temperature	-5° to 45°C	
	Storage temperature	-30° to 60°C	
	Standard depth rating	2000 m	
<b>Standard Sensors</b>	Temperature	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 (magnetometer type) <sup>4</sup>	Accuracy ±2°; Precision ±0.3°; Resolution 0.01°; Maximum tilt ±50°	
	Pressure	Range 6000 m; Resolution 0.01 m; Accuracy 0.1% FS	
<b>System Components</b>	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, data acquisition software package.		
<b>Dimensions</b>	<i>Line drawings available upon request</i>		



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 MARINE**  
 RD INSTRUMENTS  
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