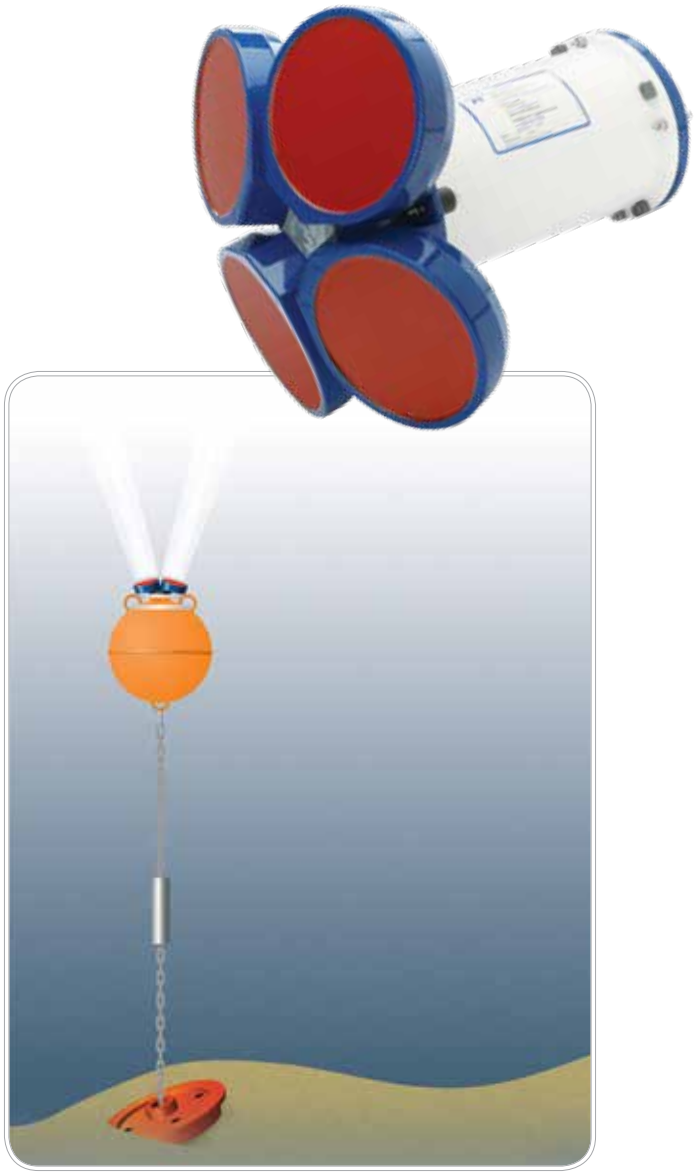
Teledyne RD Instruments

Álava Ingenieros
GRUPO ÁLAVA

Workhorse Quartermaster

150 kHz ADCP



Versatile Precision

Teledyne RD Instruments' WORKHORSE QUARTERMASTER Acoustic Doppler Current Profiler (ADCP) has been designed to fill the gap between Teledyne RDI's higher frequency 300 kHz Workhorse units and the 75 kHz Long Ranger. The Quartermaster is ideally suited for current profile measurements that may require up to 300m range. The unit provides an unsurpassed combination of range, resolution, and versatility, thanks to Teledyne RDI's Broadband technology.

The highly flexible Workhorse Quartermaster is available in two product configurations: self-contained (Sentinel), and direct-reading (Monitor). The Quartermaster is ideally suited for:

- Ocean observatories
- Shelf-edge profiling
- Upper ocean dynamics

Third-party solutions

Collect data at your desk: the Quartermaster can operate in real-time or stored-data mode. Third-party products are available for delivery of data via an acoustic modem and radio data transfer direct to your desktop.

PRODUCT FEATURES

- **Versatility:** The highly versatile QuarterMaster offers ranges of up to 300m, as well as self-contained and direct read configurations.
- **Precision data:** Teledyne RDI's Broadband signal processing produces high-resolution, precise measurements without compromising battery life.
- **Reliability:** Set it and forget it; the highly reliable and energy-efficient Quartermaster can be deployed for three, six, or even twelve months of worry-free operation.
- **4-beam solution:** Teledyne RDI's 4-beam design provides a redundant data source in case of a blocked or damaged beam, as well as an independent measure known as error velocity to ensure the quality of the data.

Workhorse Quartermaster

150 kHz ADCP

TECHNICAL SPECIFICATIONS

Mode		Depth Cell Size	Std. Dev.[1]	First Cell Range[2]	Maximum Range[3,4,5]
	High Resolution	4	7.0cm/s	8.9m	210m
		8	3.5cm/s	12.8m	235m
		16	1.8cm/s	20.6m	255m
		24	1.2cm/s	28.4m	270m
	Long Range	4	14.0cm/s	8.8m	275m
		8	7.0cm/s	12.7m	300m
		16	3.6cm/s	20.5m	325m
		24	2.5cm/s	28.7m	340m
	Bottom Track	N/A	N/A	N/A	540m

Profile Parameters	Velocity accuracy	± 1% ± 5mm/s
	Velocity resolution	1mm/s
	Velocity range:	± 5m/s default, ± 10m/s max
	Depth cell size	2–24m
	Number of depth cells	1–255
	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 (1-way)	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	Select from 0, 2, or 4 battery pack configurations
	Internal battery voltage	42VDC (new) 28VDC (depleted)
	Battery capacity @ 0°C	450 watt hrs typical / 900 or 1800 watt hours total
Standard Sensors	Pressure sensor	Maximum range 2000m
	Pressure accuracy	0.25% of full scale
	Temperature (mounted on transducer)	Range -5° to 45°C, Precision ±0.4°C, Resolution 0.01°
	Tilt	Range ±15°, Accuracy ±0.5°, Precision ±0.5°, Resolution 0.01°
	Compass (fluxgate type, includes built-in field calibration feature)	Accuracy ±2°[6], Precision ±0.5°, Resolution 0.01°, Maximum tilt ±15°
Environmental	Depth rating	1500m (3000/6000m optional)
	Operating temperature	-5° to 45°C
	Storage temperature without batteries	-30° to 60°C
	Weight in air	SC (2 BP) 56kg, SC (4 BP) 70kg, DR (0 BP) 41kg, ExtBC (4 BP) 39kg
	Weight in water	SC (2 BP) 30kg, SC (4 BP) 38kg, DR (0 BP) 22kg, ExtBC (4 BP) 15.3kg
Software	Use Teledyne RDI's Windows™-based software for the best results: **WinSC**—Data Acquisition; **WinADCP**—Data Display and Export; **Teledyne RDI Tools**—Utilities	
Available Options	• 3000m and 6000m depth option • External battery case • Mooring accessories: in-line and bottom-mount accessories • Remote head configurations • Memory: 2 PCMCIA slots, total 4GB • **Velocity** for advanced post processing	
Dimensions	488.14 mm wide x 473.91mm long (Monitor); 751.71mm long (2-battery Sentinel); 994.71mm long (4-battery Sentinel) *(line drawings available upon request)*	

1 Standard deviation is ADCP uncertainty given a single ping.
2 The first cell range is the distance from the transducer to the center of the first cell.
3 Maximum range is a nominal value based on 5°C, 35ppt, and typical ocean backscatter; actual range will vary depending on environmental conditions.
4 Assuming the ADCP is pointed vertically (0° tilt), the maximum range is limited to 94% of the distance to the surface.
5 Assumes a power supply of 32VDC (typical average battery voltage).
6 <±1.0° is commonly achieved after calibration.

TELEDYNE
RD INSTRUMENTS
Everywhereyoulook™
www.rdinstruments.com