Acoustic Doppler Current Profiler (ADCP)

(MDS-AD75 Series/ MDS-AD300 Series/ MDS-AD600 Series)

MADSUR

Intelligence perceives the world, and technology shapes the future

MDS-AD75 Series Overview

The MDS-AD75 Series ADCP is designed to meet measurement requirements across various water depths and flow velocity profiles. As a counterpart to top-tier international equipment of its kind, this product offers high precision, high reliability, and a compact size. It supports continuous operation for up to 100 days and is compatible with protocols used by similar devices from US-based TRDI and other manufacturers. Easy to operate, the system supports either power-on operation or preset mode for automated deployment.

The MDS-AD75 Series is ideal for shallow to medium water environments, with a maximum bottom tracking depth of 1,000 meters and a flow profiling range of up to 650 meters. Made of titanium alloy, the series is available in pressure ratings of 1,000 m, 3,000 m, and 6,000 m, making it suitable for working conditions ranging from shallow coastal waters to full-ocean depth.

The product features high measurement accuracy with a flow velocity resolution of 1 mm/s. It also integrates attitude, temperature, and pressure sensors. Data interfaces include RS232 or RS422 serial ports, with a wide power supply range and low average power consumption. Offering outstanding overall cost-effectiveness, the MDS-AD75 Series is a reliable choice for marine hydrological monitoring, engineering surveys, and scientific research.

MDS-AD300 Series Overview

The MDS-AD300 Series ADCP is designed to meet measurement requirements across various water depths and flow velocity profiles. As a counterpart to top-tier international equipment of its kind, this product offers high precision, high reliability, and a compact size. It supports continuous operation for up to 100 days and is compatible with protocols used by similar devices from US-based TRDI and other manufacturers. Easy to operate, the system supports either power-on operation or preset mode for automated deployment.

The MDS-AD300 Series is ideal for shallow to medium water environments, with a maximum bottom tracking depth of 220 meters and a flow profiling range of up to 160 meters. Made of titanium alloy, the series is available in pressure ratings of 1,000 m, 3,000 m, and 6,000 m, making it suitable for working conditions ranging from shallow coastal waters to full-ocean depth.

The product features high measurement accuracy with a flow velocity resolution of 1 mm/s. It also integrates attitude, temperature, and pressure sensors. Data interfaces include RS232 or RS422 serial ports, with a wide power supply range and low average power consumption. Offering outstanding overall cost-effectiveness, the MDS-AD300 Series is a reliable choice for marine hydrological monitoring, engineering surveys, and scientific research.

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MDS-AD600 Series Overview

The MDS-AD600 Series ADCP is designed to meet measurement requirements across various water depths and flow velocity profiles. As a counterpart to top-tier international equipment of its kind, this product offers high precision, high reliability, and a compact size. It supports continuous operation for up to 100 days and is compatible with protocols used by similar devices from US-based TRDI and other manufacturers. Easy to operate, the system supports either power-on operation or preset mode for automated deployment.

The MDS-AD600 Series is ideal for shallow to medium water environments, with a maximum bottom tracking depth of 120 meters and a flow profiling range of up to 70 meters. Made of titanium alloy, the series is available in pressure ratings of 1,000 m, 3,000 m, and 6,000 m, making it suitable for working conditions ranging from shallow coastal waters to full-ocean depth.

The product features high measurement accuracy with a flow velocity resolution of 1 mm/s. It also integrates attitude, temperature, and pressure sensors. Data interfaces include RS232 or RS422 serial ports, with a wide power supply range and low average power consumption. Offering outstanding overall cost-effectiveness, the MDS-AD600 Series is a reliable choice for marine hydrological monitoring, engineering surveys, and scientific research.

Features & Benefits

1. The product is benchmarked against top-tier international ADCPs and can directly replace imported equipment, offering measurement accuracy and reliability comparable to foreign counterparts, thereby supporting the development of independent and controllable marine observation instruments.
2. The volume is significantly smaller than that of international products with equivalent performance, with an in-air weight as low as just a few kilograms, making it easy to deploy on unmanned platforms or deep-sea submersibles and greatly reducing the difficulty of deployment and recovery.
3. Compatible with mainstream similar products from US-based TRDI and other manufacturers, supporting power-on operation or preset mode for automated deployment. No complex configuration is required on-site, and the operational barrier is low.
4. Available in three operating frequencies: 600k, 300k, and 75k, along with multiple pressure ratings, suitable for conditions ranging from shallow coastal waters to full-ocean depth, meeting the needs of flow velocity profiling at various water depths.
5. Integrated attitude, temperature, and pressure sensors, with universal data interfaces. Average power consumption is as low as tens of watts, resulting in low energy use during long-term continuous operation and strong system stability.
6. Under the premise of ensuring high measurement accuracy and fine resolution, the product offers affordable pricing and low operating costs, providing users with a cost-effective and reliable solution for ocean current measurement.

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Equipment parameters

Pressure Rating (m)	1000/3000/6000	1000/3000/6000	1000/3000/6000	1000/3000/6000	1000/3000/6000	1000/3000/6000
Weight in Air (kg) (1000m/3000m/6000m)	52/58/65	65/72/80	4.2/6.6/7.8	8/11.5/15.5	2.4/3.8/4.8	2.7/4.5/7.0
Weight in Water (kg) (1000m/3000m/6000m)	34/38/47	48/55/62	3.1/5.0/6.0	4/7.5/11.5	1.4/2.8/3.6	1.1/2.9/5.4
Dimension (mm) (1000m/3000m/6000m)	Φ350×203	Φ348×323 (All ratings)	Φ224×136	Φ224×290	Φ130×148	Φ148×350
	Φ360×229		Φ230×159	Φ230×305	Φ145×150	Φ148×356
	Φ370×244		Φ230×164	Φ230×320	Φ145×160	Φ148×362
Operating Frequency	75kHz	75kHz	300kHz	300kHz	600kHz	600kHz
Beam Configuration	4-beam Janus	4-beam Janus	4-beam Janus	4-beam Janus	4-beam Janus	4-beam Janus
Beam Angle vs Vertical	30°	30°	20°	20°	20°	20°
Beam Width	3.5°	3.5°	3.5°	3.5°	3.5°	3.5°
Data Update Rate	1Hz (No Bottom Tracking); 0.5Hz (Bottom Tracking)	1Hz (No Bottom Tracking); 0.5Hz (Bottom Tracking)	2Hz (No Bottom Tracking); 1Hz (Bottom Tracking)	2Hz (No Bottom Tracking); 1Hz (Bottom Tracking)	2Hz (No Bottom Tracking); 1Hz (Bottom Tracking)	2Hz (No Bottom Tracking); 1Hz (Bottom Tracking)
Heading Accuracy	±2°	±2°	±2°	±2°	±2°	±2°
Velocity Profile Range (Wide/Narrow Band)	550m/650m	550m/650m	120m/160m	120m/160m	55m/70m	55m/70m
Velocity Measurement Range	±5m/s(default); ±10m/s(max)	±5m/s(default); ±10m/s(max)	±5m/s(default); ±20m/s(max)	±5m/s(default); ±20m/s(max)	±5m/s(default); ±20m/s(max)	±5m/s(default); ±20m/s(max)
Velocity Accuracy	±1%±0.5cm/s	±1%±0.5cm/s	±0.5%±0.5cm/s	±0.5%±0.5cm/s	±0.3%±0.3cm/s	±0.3%±0.3cm/s
Velocity Resolution	1mm/s	1mm/s	1mm/s	1mm/s	1mm/s	1mm/s
Vertical Bin Resolution	4~32m	4~32m	1~8m	1~8m	0.5~4m	0.5~4m
Number of Vertical Bins	1~255	1~255	1~255	1~255	1~255	1~255
Bottom Tracking Range	1000m	1000m	2~220m	2~220m	0.8~120m	0.8~120m
Power Supply	DC 20V~50V, 5A	DC 20V~50V, 5A	DC 20V~50V, 5A	DC 20V~50V, 5A	DC 20V~50V, 5A	DC 20V~50V, 5A
Average Power Consumption	≤20W	≤20W	＜10W	＜10W	＜10W	＜10W

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