SPCM-001

Single-Point Current Meter



High-accuracy current speed and direction measurement at a fixed sampling point — built for long-term deployment in oceans, lakes and offshore environments.

Overview

The SPCM-001 Single-Point Current Meter measures the flow speed of a target water mass based on the acoustic Doppler principle. It features compact size, light weight and high measurement accuracy.

The instrument can be mounted on shore-based installations or surface platforms as required — typically deployed on buoys, mooring chains, base frames and seabed mounts. It performs long-term fixed-point observation of current speed and direction in oceans, lakes and other water bodies, capturing the variation of the current field within a target area.

Built-in compass and tilt sensors correct the current vector to a geographic north reference. Temperature and pressure sensors provide supplementary environmental data and sound speed compensation for Doppler calculation.

Applications

Versatile deployment options for oceanographic research, coastal monitoring and offshore engineering.

- **Buoy Deployment** Mounted on oceanographic and monitoring buoys for long-term surface and near-surface current observation.
- **Moored Observation** Integrated into mooring chains for fixed-depth current profiling over months of continuous operation.
- **Seabed Mounted** Fixed on seabed frames for near-bottom boundary layer current measurement and sediment transport studies.
- **Lake & Reservoir** Suitable for freshwater hydrological monitoring, stratification studies and reservoir inflow measurement.
- **Offshore Engineering** Site assessment for wind farms, subsea pipelines and coastal structures — current data for design input.
- **AUV / ROV Support** Compatible with underwater vehicle integration for supplementary current measurement during missions.

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Technical Specifications

Item	Specification
Current Velocity Range	0 ~ 300 cm/s
Current Velocity Accuracy	1%V ±0.2 cm/s
Current Velocity Resolution	1 mm/s
Depth Rating	500 m / 2000 m / 6000 m
Temperature & Pressure Sensor	Optional, (Range: -5℃~+45℃; Precision: ±0.5℃; Resolution: 0.01℃)
3D High-Precision Electronic Compass	Optional
Azimuth	Measurement Range: 0 ~ 360° ; Accuracy: ≤0.3° (RMS) after spatial calibration (tilt range: -20° ~ 20°); Resolution: 0.01° ; Repeatability: 0.05° (RMS)
Pitch Angle	Measurement Range: -90° ~ 90° ; Accuracy: ≤0.2° (RMS); Resolution: 0.01° ; Repeatability: 0.05° (RMS)
Roll Angle	Measurement Range: -90° ~ 90° ; Accuracy: ≤0.2° (RMS); Resolution: 0.01° ; Repeatability: 0.05° (RMS)
Communication Interface (Optional)	Ethernet, RS485, RS232
On-board Memory	16 GB (Standard)
Dimension	Φ160 mm × 300 mm
Weight	7 ± 1 kg

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