



DIGITAL WAVE HEIGHT METER

Introduction

This device adopts a low-power microprocessor, 16-bit high-precision A/D converter and long-distance communication technology, and is equipped with a capacitive wave height sensor. It features good linearity, low power consumption, high measurement accuracy, long transmission distance, stable performance and strong anti-interference ability.

The sensor has an integrated structure for easy installation. It is fitted with a USB interface powered directly by the USB port, requiring no external power supply or additional data acquisition equipment for flexible deployment. It is mainly used to measure free fluid waves, water level height and other parameters.

Description

- 1. Digital output:** Direct digital output with no calibration required and no extra acquisition equipment needed. Connect to a computer via USB to display the wave height time curve immediately.
- 2. High integration:** Integrates sensor, power supply, acquisition and signal amplification, eliminating cumbersome on-site wiring. It can be directly connected to a computer USB or RS485 hub (for 6+ devices) to generate wave height time curves.
- 3. Intelligent operation:** Plug-and-play design. The sensor performs self-diagnosis, auto-connection, self-balancing and automatic parameter loading upon power-up.
- 4. High precision:** Equipped with a 24-bit A/D converter with an accuracy of 0.15%.

Structure

Output

Transmits data to computers and data recorders via RS485 interface.

Power Supply

Provides working power, which can be supplied by batteries or an external DC power source.

(Customizable on Demand)

Analysis Interface

Data Storage System



Acquisition and Analysis Software

Multiple sensors can be used with a USB expander, with up to 6 sensors connectable to one computer.



IP68

Probe



Parameters

Item	Parameter
Measuring Range	0~2m (optional)
Accuracy	0.15%FS / 0.29%FS at room temperature
Temperature Drift	< $\pm 0.05\%FS/^{\circ}C$
Long-term Stability	$\leq 0.3\%FS/year$
Response Time	$\leq 0.25ms$
Power Supply	4~10V DC, operating current <40mA
Data Interface	RS485, USB interface optional
Data Output Rate	4000Hz ~ 1 point/10 minutes (configurable)
Sampling Frequency	1000Hz, 4000Hz
Operating Temperature	-40 $^{\circ}C$ ~ +60 $^{\circ}C$
Storage Temperature	-50 $^{\circ}C$ ~ +85 $^{\circ}C$

Precautions

- **Measuring range and accuracy:** Select models with matching range and accuracy according to application requirements.
- **Sampling rate:** Generally, the sampling rate shall be at least 2 times the highest target wave frequency, and usually over 10 times in practical use.
- **Resolution:** Determines the minimum distinguishable wave variation.
- **Environmental adaptability:**
Select appropriate probe materials and protection grades considering temperature, salinity, bio-fouling (barnacles, etc.), corrosion, water depth and flow velocity.
- **Installation:** Ensure firm installation, compliant positioning (avoid turbulence and airflow interference) and good verticality.
- **Calibration:** Perform regular calibration in still water as close to actual operating conditions as possible. Water quality changes, especially salinity variation, will affect calibration results.