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**CNYST 2023041804**

# Flow Velocity Meter Tester User Manual

**Brand:** CNYST | **Model:** 2023041804

## 1. INTRODUCTION

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This manual provides comprehensive instructions for the operation and maintenance of the CNYST Flow Velocity Meter Tester. This portable device is designed for accurate measurement of flow rate and velocity in open channels, making it suitable for various applications including hydrological stations, factories, mines, environmental monitoring stations, agricultural drainage and irrigation, and hydrogeological surveys.



Figure 1.1: The CNYST Flow Velocity Meter Tester and its main components.

# Application



Figure 1.2: Typical application scenarios for the flow velocity meter.

## 2. PRODUCT COMPONENTS

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The CNYST Flow Velocity Meter Tester kit includes the following main components:

- **Main Meter Unit:** The handheld device with LCD display and control buttons.
- **Velocity Sensor (Propeller Type):** Used for measuring water speed.
- **Velocity Sensor (Paddle Type):** Alternative sensor for specific flow conditions.
- **Connecting Cable:** To link the sensor to the main meter unit.
- **Measuring Rods:** Multiple sections that can be assembled to achieve desired measurement depth.
- **Mounting Bracket:** To attach the sensor to the measuring rod.
- **Accessories:** Includes tools for assembly and a carrying case.



Figure 2.1: Overview of all components included in the kit.



Figure 2.2: The main meter unit.



Figure 2.3: Propeller type velocity sensor.



Figure 2.4: Paddle type velocity sensor.

### 3. SETUP AND ASSEMBLY

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Follow these steps to assemble your flow velocity meter:

1. **Attach the Sensor:** Connect the desired velocity sensor (propeller or paddle) to the mounting bracket. Ensure

it is securely fastened.

2. **Connect the Cable:** Plug the sensor's connecting cable into the main meter unit.
3. **Assemble Measuring Rods:** Screw together the required number of measuring rod sections to achieve the desired depth for your measurement. Attach the assembled rod to the mounting bracket.
4. **Insert Batteries:** Open the battery compartment on the main meter unit and insert 4 No. 7 batteries (not included). Ensure correct polarity.

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Video 3.1: A detailed video demonstrating the assembly process of the Flow Velocity Meter.

## 4. OPERATING INSTRUCTIONS

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To operate the CNYST Flow Velocity Meter Tester:

1. **Power On:** Press the **POWER** button on the main meter unit to turn on the device. The LCD display will illuminate.
2. **Positioning:** Carefully lower the assembled measuring rod with the attached sensor into the water channel to the desired measurement depth. Ensure the sensor is fully submerged and oriented correctly with the flow.
3. **Measurement:** The device will automatically begin measuring the flow velocity. The LCD display will show the current velocity (V) and other relevant parameters such as the number of rotations (N) and time (T).
4. **Readings:** Observe the readings on the LCD display. The velocity is calculated using the formula:  $V = KN/T + C$  (m/s), where K and C are instrument constants.
5. **Power Off:** After completing your measurements, press and hold the **POWER** button to turn off the device.



Figure 4.1: Close-up of the meter's LCD display and control buttons.

## 5. MAINTENANCE

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Proper maintenance ensures the longevity and accuracy of your flow velocity meter:

- **Cleaning:** After each use, especially in turbid water, rinse the sensor and measuring rods with clean water. Wipe all components dry before storage.
- **Storage:** Store the device and its components in the provided carrying case in a dry, cool place, away from direct sunlight and extreme temperatures.
- **Battery Replacement:** Replace batteries when the low battery indicator appears on the display or when the device fails to power on. Always use new batteries of the specified type (4 No. 7 batteries).
- **Sensor Inspection:** Regularly inspect the velocity sensors for any debris, damage, or wear. Ensure the propeller or paddle rotates freely.

## 6. TROUBLESHOOTING

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If you encounter issues with your device, refer to the following common problems and solutions:

Problem	Possible Cause	Solution
Device does not power on.	Low or dead batteries; incorrect battery polarity.	Replace batteries with new ones, ensuring correct polarity.
Inaccurate readings.	Sensor fouled with debris; damaged sensor; incorrect K/C values.	Clean the sensor thoroughly; inspect for damage and replace if necessary; consult the full product manual for calibration or factory reset procedures if applicable.
Display is blank or flickering.	Low batteries; loose cable connection.	Replace batteries; ensure the sensor cable is securely connected to the main unit.

## 7. TECHNICAL SPECIFICATIONS

Parameter	Value
Velocity Measurement Formula	$V = KN/T + C$ (m/s) (automatic calculation)
Velocimetry Range	0.01 - 10.00 m/s
Flow Measurement Error	≤1.5%
Display	LCD display
Measurement Method	Rod positioning measurement
Temperature Range	-10°C to 50°C
Power Supply	4 x No. 7 batteries (AAA)
Backlight	LED backlight
Host Size	75mm x 135mm x 25mm
Product Dimensions	2.95 x 5.31 x 0.98 inches; 4.41 Pounds
Item Model Number	2023041804
Manufacturer	CNYST

## 8. WARRANTY AND SUPPORT

For warranty information, technical support, or service inquiries, please refer to the contact information provided with your purchase or visit the official CNYST website. Keep your purchase receipt as proof of purchase for warranty claims.

**Manufacturer:** CNYST

**Website:** CNYST Official Store on Amazon

