VTSYIQI VTSYIQI2025102916235878785 8VTSYIQI

VTSYIQI Portable Digital Ultrasonic Flow Meter Kit

Model: VTSYIQI2025102916235878785 8VTSYIQI

1. Product Overview

The VTSYIQI Portable Digital Ultrasonic Flow Meter Kit is designed for non-invasive liquid flow measurement in pipes. This device utilizes transit-time ultrasonic technology to provide accurate and repeatable flow rate readings. It is suitable for a wide range of industrial applications, offering portability and ease of use.
This kit is specifically configured for pipes with a diameter range of DN300 to 6000mm (11.8 to 236.22 inches) and can measure liquids with temperatures from -40°C to 90°C.

2. Package Contents

Please verify that all items listed below are present in your package:

- Main Host Unit (Ultrasonic Flowmeter)
- One pair of TL-1 Transducers
- Signal Cables (5m*2)
- Metal Clamp Fixture
- Aluminum Carrying Case
- Tape Ruler
- Power Adaptor
- Data Line (RS232 serial interface cable)
- User Manual

Image 2.1: The complete VTSYIQI Portable Digital Ultrasonic Flow Meter Kit, including the main unit, TL-1 transducers, signal cables, clamp fixture, power adapter, data cable, tape measure, and user manual, all contained within an aluminum case.

Image 2.2: The VTSYIQI Portable Digital Ultrasonic Flow Meter Kit neatly organized inside its durable aluminum carrying case, ready for transport or storage.

3. Key Features

- **Wide Measuring Range:** Supports pipe sizes from DN300 to 6000mm (11.8 to 236.22 inches).
- **Broad Temperature Compatibility:** Operates effectively with liquid temperatures ranging from -40°C to 90°C.
- **High Accuracy:** Achieves an accuracy of over 1%-2% with a repeatability of over 0.2%.
- **Clear LCD Display:** Features a 4-line x 16-character LCD with backlight for easy reading of measurements.
- **User-Friendly Interface:** Equipped with a 16-key light-touch keyboard and simulation keyboard software for intuitive operation.
- **Data Connectivity:** Includes an insulated RS232 serial interface for computer connectivity and software upgrades, supporting MODBUS.
- **Signal Output:** Provides 1-way OCT pulse output (pulse width 6~1000ms, default 200ms).
- **TL-1 Transducer:** Comes with a pair of TL-1 transducers designed for large pipe diameters.

Image 3.1: Front view of the VTSYIQI Portable Digital Ultrasonic Flow Meter, showcasing its LCD display and 16-key keypad for user interaction.

Image 3.2: A visual representation highlighting the 4x16 character LCD with backlight and the accuracy specifications of the flow meter.

4. Setup Instructions

4.1 Unpacking and Initial Inspection

1. Carefully remove all components from the aluminum carrying case.
2. Inspect each item for any signs of damage during transit. Report any damage to your supplier immediately.
3. Familiarize yourself with the main unit, transducers, cables, and accessories.

4.2 Transducer Installation

The TL-1 transducers are designed for clamp-on installation. Proper installation is crucial for accurate measurements.

1. **Select Measurement Point:** Choose a straight section of pipe, free from valves, pumps, or other flow disturbances. Ensure the pipe surface is clean and smooth.
2. **Apply Coupling Agent:** Apply a generous amount of silica gel (or a suitable ultrasonic coupling agent) to the contact surface of both transducers and the pipe surface where they will be mounted. **Note:** Coupling agent is essential for signal transmission. Without it, the device will not register a signal.
3. **Mount Transducers:** Use the provided metal clamp fixture to securely mount the TL-1 transducers onto the pipe. Ensure they are positioned correctly according to the flow direction and the specified distance for your pipe diameter. Refer to the detailed user manual for specific spacing and mounting configurations (Z-method or V-method).
4. **Secure Transducers:** Tighten the clamp fixture to ensure firm contact between the transducers and the pipe, expelling any air bubbles from the coupling agent layer.

Image 4.1: Illustrative diagram demonstrating the correct placement and clamping of ultrasonic transducers onto a pipe for flow measurement.

4.3 Connecting Cables

1. Connect the signal cables to the TL-1 transducers. Ensure a secure connection.
2. Connect the other end of the signal cables to the corresponding input ports on the main host unit. The ports are typically color-coded (e.g., red and blue) to match the transducer cables.
3. If using external power, connect the power adaptor to the main unit and then to a suitable power outlet.
4. For data transfer, connect the RS232 data line to the main unit's serial port and to your computer.

Image 4.2: Side view of the VTSYIQI Flow Meter main unit, highlighting the input ports for transducer cables and the RS232 data interface.

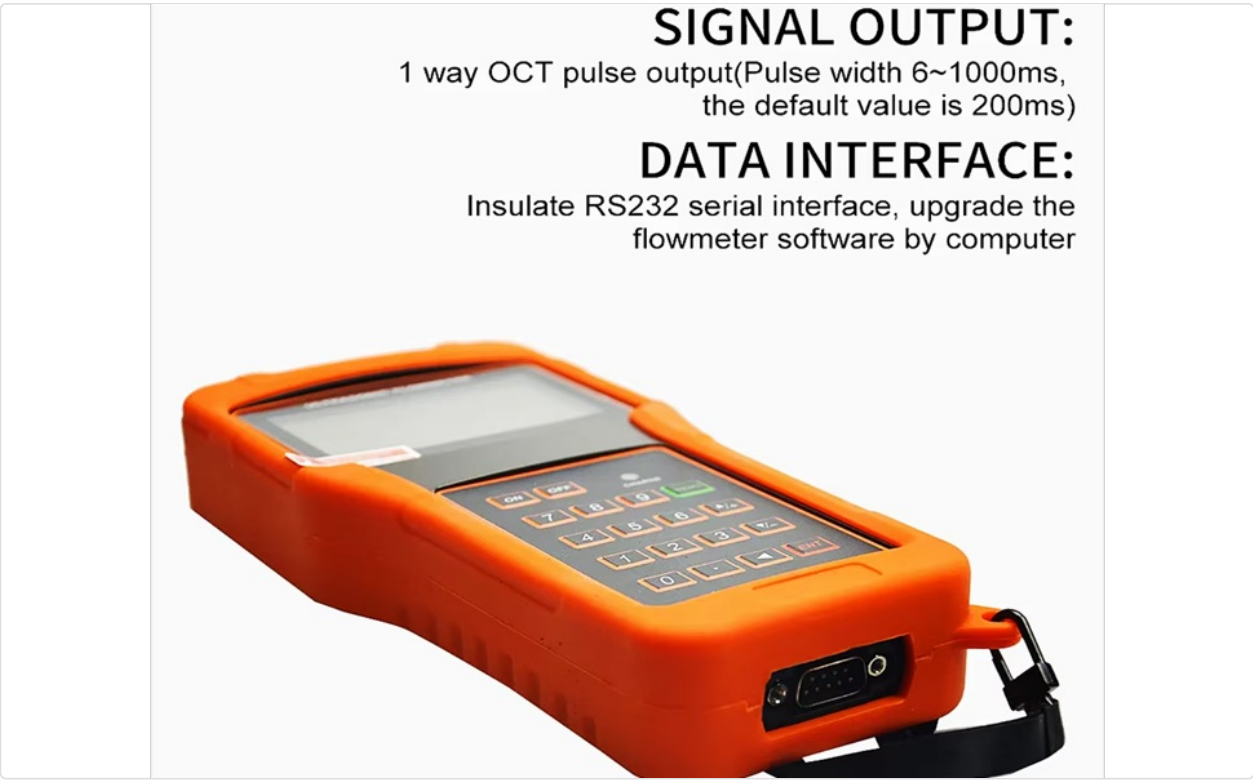

Image 4.3: A diagram detailing the signal output (OCT pulse) and the insulated RS232 serial data interface for computer connection.

5. Operating Instructions

5.1 Powering On and Basic Measurement

1. Press the 'ON' button on the main unit to power it on. The LCD will display startup information and then the main measurement interface.
2. Ensure the transducers are correctly installed and coupling agent is applied.
3. The display will show real-time flow data, including instantaneous flow rate (Flow), velocity (Vel), and accumulated flow (POS).

5.2 Menu Navigation and Parameter Settings

1. Use the 'MENU' button to access the main menu.
2. Navigate through menu options using the arrow keys (up/down).
3. Press 'ENTER' to select an option or confirm a setting.
4. **Key Parameters to Set:**
    - **Pipe Diameter:** Input the exact outer diameter of the pipe.
    - **Pipe Material:** Select the material of the pipe from the predefined list.
    - **Liner Material:** If the pipe has a liner, select its material.
    - **Liquid Type:** Choose the type of liquid being measured.
    - **Transducer Type:** Confirm TL-1 is selected.
    - **Transducer Spacing:** Adjust the spacing based on the calculated value provided by the meter or manual calculation.
5. After setting parameters, exit the menu to return to the measurement screen.

5.3 Data Logging and Transfer

The flow meter supports data logging and transfer to a computer.

1. Access the data logging menu to configure logging intervals and start/stop logging.
2. To transfer data, connect the RS232 data line to a computer and use the provided software (or compatible terminal software) to download logged data.

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Video 5.1: This video demonstrates the unboxing and basic operation of the VTSYIQI Portable Digital Ultrasonic Flow Meter, including powering on the device and showcasing its display and components.

6. Maintenance

6.1 Cleaning

- Wipe the main unit and transducers with a soft, dry cloth.
- Do not use abrasive cleaners or solvents that could damage the display or casing.
- Ensure no moisture enters the device's ports.

6.2 Storage

- When not in use, store the flow meter kit in its aluminum carrying case to protect it from dust, moisture, and physical damage.
- Store in a cool, dry place away from direct sunlight and extreme temperatures.

6.3 Coupling Agent

- The coupling agent (silica gel) is crucial for proper operation. Ensure you have an adequate supply.
- Replace the coupling agent if it dries out or loses its effectiveness during prolonged measurements.

7. Troubleshooting

Problem	Possible Cause	Solution
No signal or unstable readings	Lack of coupling agent (silica gel) Improper transducer installation Air bubbles between transducer and pipe Incorrect parameter settings	Apply sufficient silica gel to transducers and pipe. Re-position transducers according to manual. Ensure firm contact to remove air bubbles. Verify pipe diameter, material, and liquid type settings.
Display not turning on	Low battery Power cable not connected properly Device fault	Charge the device or connect to external power. Check power cable connections. Contact customer support if problem persists.
Inaccurate flow readings	Incorrect pipe parameters Turbulent flow conditions Transducer misalignment	Double-check all pipe and liquid parameters. Relocate transducers to a longer straight pipe section. Ensure transducers are perfectly aligned and spaced.

8. Specifications

- **Principle:** Transit-time ultrasonic flowmeter
- **Accuracy:** Over 1%-2%; Repeatability: Over 0.2%
- **Display:** 4 line x 16 character LCD with backlight
- **Dimension (Main Unit):** 200 x 93 x 33 mm
- **Weight (Main Unit):** 390g
- **Operation:** 16 key light touch keyboard and Simulation keyboard software
- **Data Interface:** Insulate RS232 serial interface, supports MODBUS
- **Signal Output:** 1 way OCT output
- **Transducer Type:** TL-1 (for DN300-6000mm pipes)
- **Signal Cable Length:** Standard 5m*2, optional 10m*2
- **Liquid Temperature Range:** -40°C to 90°C
- **Product Dimensions:** 9.84 x 3.94 x 1.97 inches
- **Item Weight:** 4.41 pounds
- **Manufacturer:** VTSYIQI
- **Model Number:** VTSYIQI2025102916235878785 8VTSYIQI
- **Date First Available:** June 7, 2017

9. Warranty and Support

For warranty information, technical support, or service inquiries, please refer to the warranty card included with your product or contact VTSYIQI customer service directly. Keep your purchase receipt as proof of purchase.