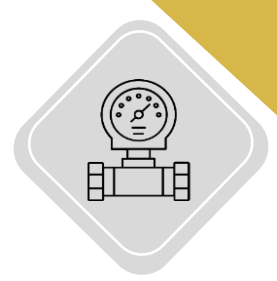




# TUF2000M

## Ultrasonic flow meter





## TUF-2000M ultrasonic flow meter

The TUF-2000M ultrasonic flow meter is an advanced device for measuring liquid flow, widely used in various industries due to its unique capabilities. With high accuracy, easy installation, and portability, this device is especially suitable for industrial applications and environments requiring temporary or mobile flow measurement.

### Key Features of the TUF-2000M:

- 1. Easy Installation without Flow Interruption:**  
Clamp-on sensors are easily mounted on the external surface of pipes, eliminating the need to stop the flow or open the pipes, which makes installation quick and hassle-free.
- 2. Portability:**  
This model is designed to be easily portable, making it ideal for flow measurements in various locations and for temporary projects.
- 3. High Accuracy:**  
With a measurement accuracy of  $\pm 1\%$  of the reading, it is ideal for applications requiring high precision.
- 4. Compatibility with Various Pipe Types:**  
This device can be used for pipes with diameters ranging from 20 mm to 6000 mm (depending on the sensor type) and is compatible with materials like metal, plastic, etc.
- 5. Versatile Outputs:**  
The TUF-2000M provides RS-232, RS-485, and USB outputs, enabling connection to computers and other systems for data logging and analysis.
- 6. Power Supply:**  
This device can be powered by a built-in rechargeable battery or via an AC power adapter. The internal battery enables long-term device operation.
- 7. Digital Display:**  
Equipped with an LCD display, allowing users to view and manage flow parameters conveniently.
- 8. Internal Memory:**  
Capable of storing data in its internal memory and transferring it to a computer for further analysis.
- 9. High Stability and Low Maintenance Requirement:**  
Due to non-contact measurement and the absence of moving parts, the device has a long lifespan and requires minimal maintenance.
- 10. Support for Various Temperatures:**  
The device operates in ambient temperatures from  $-20^{\circ}\text{C}$  to  $60^{\circ}\text{C}$  and fluid temperatures from  $0^{\circ}\text{C}$  to  $160^{\circ}\text{C}$  (depending on the sensor type).





## Advantages of the TUF-2000M:

### 1. **Easy Installation without Flow Interruption:**

The clamp-on sensors of this device easily mount on the outer surface of pipes without the need to stop the flow or make structural changes to the piping. This feature enables quick and hassle-free installation, preventing production downtime.

### 2. **Portability:**

With its lightweight and portable design, this flow meter is ideal for mobile projects and temporary applications. It can easily be transported to various locations and used to measure flow under different conditions.

### 3. **Non-Contact with Liquid:**

The clamp-on sensors operate without direct contact with the liquid, reducing the risk of corrosion, contamination, and sensor wear. This advantage extends the device's lifespan and lowers maintenance needs.

### 4. **High Accuracy:**

With an accuracy of  $\pm 1\%$  of the reading, this device is ideal for applications requiring precise measurements. This high accuracy is critical for industrial and commercial applications.

### 5. **Compatibility with Various Pipe Types:**

The TUF-2000M is compatible with pipes of various materials, including metal and plastic, and a wide range of diameters (from 20 to 6000 mm). This flexibility makes it suitable for diverse industries.

### 6. **Reduced Maintenance Costs:**

Due to the non-contact nature of the sensors and the lack of moving parts, the device requires less maintenance. This feature lowers operational costs and extends the interval between repairs.

### 7. **Versatile Outputs:**

Equipped with RS-232, RS-485, and USB outputs, this device enables connectivity with control systems and data logging tools, allowing users to analyze flow data easily.

### 8. **Flexible Power Supply:**

The device includes a rechargeable internal battery, making it suitable for long-term use in locations without access to electricity. It can also operate via an AC power adapter.

### 9. **User-Friendly Display:**

The digital LCD display with a simple interface provides users with accurate flow and device status information.





## Technical Specifications of the TUF-2000M:

### 1. Measurement Method:

- Technology: Transit-time
- Sensor Type: Clamp-on sensors that are externally mounted on the pipe.

### 2. Measurement Range:

- Pipe Diameter: 20 mm to 6000 mm (depending on sensor type)
- Flow Velocity: 0.01 to 12 m/s

### 3. Measurement Accuracy:

- ±1% of the reading (with proper installation and calibration)

### 4. Resolution:

- 0.01 m/s

### 5. Power Supply:

- Internal Battery: Rechargeable with an average 12-hour working time
- AC Power Adapter: 220V AC (optional)

### 6. Display:

- Type: Digital LCD
- Display Capabilities: Flow velocity, flow volume, and other adjustable parameters

### 7. Outputs:

- Communication Ports: RS-232, RS-485, USB
- Optional Analog and Digital Outputs (depending on model)

### 8. Operating Temperature:

- Ambient Temperature: -20°C to 60°C
- Fluid Temperature: 0°C to 160°C (depending on sensor type)

### 9. Internal Memory:

- Storage capability for several thousand flow data records

### 10. Sensor Types:

- S1: For small pipes with diameters from 20 to 100 mm
- M1: For medium pipes with diameters from 50 to 1000 mm

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- M1: For medium pipes with diameters from 50 to 1000 mm
- L1: For large pipes with diameters from 300 to 6000 mm

### 11. Response Time:

- Less than 1 second

### 12. Materials:

- Body: Industrial-grade durable plastic
- Sensors: Made of durable plastic or metal (depending on model)

### 13. Dimensions and Weight:

- Device Dimensions: Approximately 200x92x32 mm (depending on model)
- Weight: Around 500 grams (excluding accessories)

### 14. Protection and Safety:

- Protection Rating: IP65 for the main device and sensors

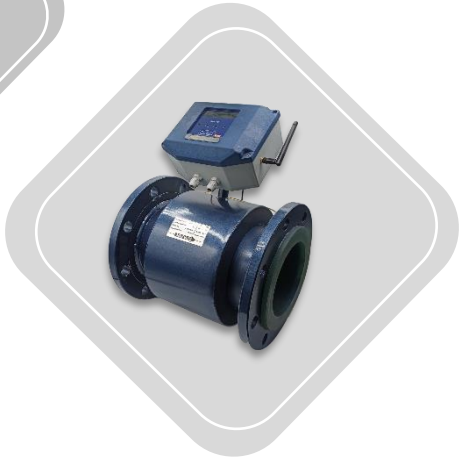
### 15. Calibration:

- Features automatic calibration for increased accuracy



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