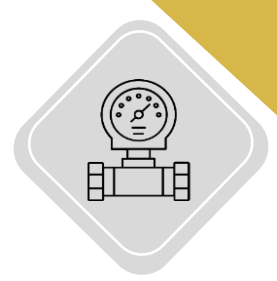




# TUF2000H

## Ultrasonic flow meter





## Tuf-2000h ultrasonic flow meter

The portable ultrasonic flow meter is designed for easy measurement of various fluids, allowing users to install it without restriction on any pipe of any material. The portable ultrasonic flow meter is mounted on the pipe using a clamp-on method, without the need for cutting or drilling. With its internal battery, users can comfortably operate the portable ultrasonic flow meter for up to 8 hours. The portable ultrasonic flow meter can measure pipes ranging in size from 15 mm to 5000 mm without limitations.

### Key Features of TUF-2000H:

The portable ultrasonic flow meter TUF-2000H is designed for measuring the flow of fluids in pressurized pipes without the need for cutting or dismantling the piping system. The portable ultrasonic flow meter allows for flow measurement in both fixed and moving conditions. Its portability is considered a significant advantage, making it easier to monitor flow rates, and enabling the measurement of both inlet and outlet flows in a pressurized system.

This type of portable ultrasonic flow meter is controlled by a microprocessor system that utilizes ultrasonic transit-time techniques and provides reliable data. This feature allows the portable ultrasonic flow meter to be used on pipes with an outer diameter ranging from 15 mm to 6000 mm (depending on the model) and made from any material.

Another advantage of the portable ultrasonic flow meter is its internal battery, which allows for continuous operation for up to 8 hours on a single charge. It can be installed on various pipes of any material, and you can measure any type of fluid using the portable ultrasonic flow meter.

The measurement accuracy of the portable ultrasonic flow meter is  $\pm 1\%$ . Additionally, the portable ultrasonic flow meter comes with an internal data logger for information storage.

### How the Portable Ultrasonic Flow Meter Works:

The use of ultrasonic waves for measuring fluid flow intensity, combined with the portability of the flow meter, has made the portable ultrasonic flow meter a popular product. Firstly, the unique design of these flow meters allows for installation without any changes to the piping system, enabling direct installation in any part of the system. This remarkable feature is especially important for processes involving pressurized fluids, eliminating the limitations encountered when using other flow meters.





## Advantages of TUF-2000H:

When discussing the advantages of the portable ultrasonic flow meter, the first point to highlight is its mobility and portability. Its small size and unique design allow you to have it with you for any of your projects, enabling immediate flow velocity measurements whenever needed, thus making the technician's job easier.

Another notable advantage of the portable ultrasonic flow meter is that it is the best choice for pressurized fluids and certain specific liquids. You can install the portable ultrasonic flow meter without making any changes to the piping system, which means that the flowing liquid experiences no change in its condition. This helps you measure the fluid flow rate with the highest possible accuracy.

The portable ultrasonic flow meter provides readings for flow rate, fluid velocity, total consumption, and the return water amount, all without direct contact with the fluid.

## How the portable ultrasonic flow meter works:

The use of ultrasonic waves to measure fluid flow intensity, along with the portability of the flow meter, has made the portable ultrasonic flow meter a popular product. First and foremost, the unique design of these flow meters allows for installation without the need to modify the piping system, enabling you to install it directly at any part of the system. This feature is extremely important for processes that deal with pressurized fluids, eliminating their limitations when working with other flow meters.

More importantly, the flow velocity of the fluid is determined based on the analysis of the travel time of the ultrasonic waves in the fluid. These devices send two waves into the pipe or fluid flow, one traveling with the fluid flow and the other against it. The difference in the return time of these waves reaching the detector is considered the primary measurement criterion. Therefore, no physical intervention is required to assess and measure the fluid flow velocity, which can be excellent news for systems with measurement constraints.

## Applications of Portable Ultrasonic Flow Meters:

Due to the lack of limitations on the use of portable ultrasonic flow meters, they can be applied in many specific and general industries. As a general rule, it can be said that portable ultrasonic flow meters are suitable for various fluids that do not alter the flow of ultrasonic or sonic waves, and for this reason, the restrictions on using this type of flow meter are minimal.

Some applications of portable ultrasonic flow meters include important industries such as the petrochemical industry and its subsets (for example, the oil and gas industry). These devices play a significant role in the inflow and outflow of wastewater treatment systems in the water and wastewater industries. Additionally, portable ultrasonic flow meters are commonly used in the food and beverage industries to monitor reactors.





## Installation method for the TUF-2000H ultrasonic flowmeter sensor

The steps for installing the sensors are as follows:

1. Identify a suitable location with enough straight pipe length, ensuring that the pipes are in optimal conditions, such as being new, rust-free, and easy to work with.
2. Remove any dust and rust. For better results, it is recommended to polish the pipe with a grinding machine.
3. Place the appropriate coupler at the location where the sensors need to be installed, ensuring that there is no gap between the pipe surface and the transducers.

## Technical Specifications of TUF-2000H:

1. Measurement accuracy:  $< \pm 1\%$
2. Linearity: 0.5%
3. Repeatability: 0.2%
4. Operating temperature range for the sensor in two models:
5.  $-30^{\circ}\text{C}$  to  $+90^{\circ}\text{C}$
6.  $-30^{\circ}\text{C}$  to  $+160^{\circ}\text{C}$
7. Large LCD display: Shows instantaneous flow, accumulated flow (positive, negative, and net), velocity, operating status, etc.
8. Power supply: AC 110V-240V
9. Supports a 16-key touch keypad and simulated keyboard software
10. Equipped with a 24K internal data logger (stores over 2000 lines of measurement data)

## What types of pipes can the TUF2000 H flowmeter be installed on?

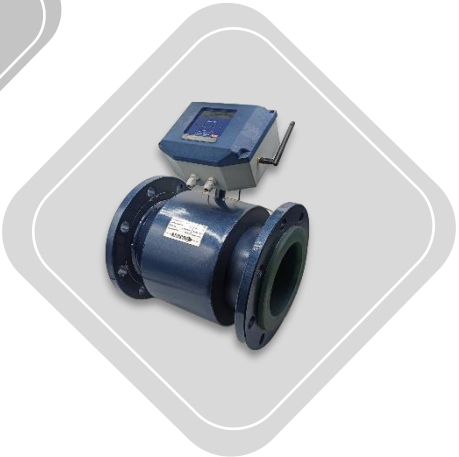
The TUF 2000 H flowmeter can be installed on a wide range of pipes made from various materials, including:

- Carbon steel
- Stainless steel
- Cast iron
- Copper
- Ductile iron
- PVC
- Aluminum
- Asbestos
- Fiberglass



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