



MIAL[®]
INSTRUMENTS PVT.LTD.
Measuring & Beyond

MUF 1000

PORTABLE Clamp on
ULTRASONIC FLOW METER



| Measuring & Beyond



www.mialinstruments.com

MUF 1000



Portable Clamp on Ultrasonic Flow meter

DESCRIPTION

Flow Meter:

The MUF 1000 Transit Time Ultrasonic meter is a cutting-edge solution for precise and convenient flow measurement. Ideal for testing and validating flow, this innovative meter employs the transit-time method to deliver accurate readings without the need for invasive installations. Its battery-operated, portable design makes it a versatile tool for various applications. Utilizing clamp-on ultrasonic transducers, the MUF1000 effortlessly measures flow through the pipe wall, eliminating the need for costly and time-consuming modifications. With its non-intrusive nature and easy setup, this flow meter provides a hassle-free solution for monitoring liquid flow in diverse environments.

Designed for versatility, the MUF 1000 comes with pairs of transducers that cover a wide range of common pipe diameters, offering flexibility in various applications. Whether for service and maintenance support or temporary replacement of permanent meters, this portable flow meter proves invaluable. Easy to use and highly reliable, it provides seamless control and monitoring, making it an indispensable tool for fluid management tasks.

APPLICATIONS

Industrial Process Monitoring:

The MUF 1000 Transit Time Ultrasonic meter can be utilized in industrial settings for monitoring the flow of liquids in various processes, such as chemical manufacturing, pharmaceutical production, and food processing. Its non-invasive nature makes it ideal for ensuring smooth operations without disrupting the workflow.

HVAC Systems:

In heating, ventilation, and air conditioning (HVAC) systems, the MUF 1000 can be used to measure the flow rate of water or other liquids through pipes, helping to ensure proper functioning of the system. Its portability allows for easy installation and monitoring across different HVAC units.

Power generation:

In power plants, including nuclear, thermal, and hydropower plants, precise flow measurement is vital for efficient operation and safety. The MUF 1000 can be used to measure flow rates of different fluids used in power generation processes.

Mechanical Engineering and Plant Engineering:

The MUF 1000 can be used for pipeline leak detection, inspection, tracking, and collection in various mechanical and plant engineering applications, ensuring the integrity and efficiency of the systems.

Service and Maintenance:

The MUF 1000 can assist in the service and maintenance of flow systems by providing accurate flow data, conducting audits, evaluating system capacity, and monitoring the performance of pumps and regulating valves.



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FEATURES

Easy Installation:

Featuring Clamp on transducers, the MUF 1000 is effortless to install, cost-effective, and does not require any pipe cutting or system shutdown. This non-invasive installation method ensures minimal disruption to operations, making it an ideal choice for various industries.

Non-Intrusive Measurement:

Utilizing the transit-time method, this flow meter accurately measures liquid flow without intruding into the pipe. The ultrasonic transducers are mounted externally on the pipe's surface, enabling non-intrusive and non-disruptive flow measurement.

Flexible and Versatile:

With pairs of transducers covering a wide range of common pipe diameter ranges, the MUF 1000 offers flexibility in application. It is suitable for different pipe materials and diameters ranging from 25mm to 1200mm, ensuring compatibility across various systems and industries.

Wide Liquid Temperature Range:

The MUF 1000 is designed to operate in extreme conditions, with a wide liquid temperature range from -40°C to 80°C . This robust temperature tolerance ensures reliable performance in diverse environments, from industrial processes to environmental monitoring applications.

Data Logger Functionality:

Equipped with a data logger function and compatible data analysis software, the MUF 1000 enables comprehensive data collection and analysis. Users can efficiently track and analyze flow data over time, facilitating informed decision-making and process optimization.

BENEFITS OF FLOW METER

- Non-invasive installation: No pipe cutting or system shutdown required.
- Versatile compatibility: Works with various pipe materials and diameters (25mm to 1200mm)
- Wide temperature range: Operates reliably from -40°C to 80°C
- Accurate measurements: Utilizes transit-time method for precise flow data.
- Data logging and analysis: Includes software for comprehensive data management.
- Flexibility and portability: Ideal for service, maintenance, and temporary replacements.

MUF 1000 specifications*

Operation and performance

Flow measurement

Ultrasonic differential transit-time Technology

Fluid types

Water

Flow range

$\pm 0.09\text{ft/s} \sim \pm 16\text{ ft/s}$ ($\pm 0.03\text{ m/s} \sim \pm 5\text{ m/s}$)

Accuracy

$\pm 1\%$ of measured value

Pipe sizes

1" to 48" (25mm to 1200mm).

Pipe material:

Carbon steel, stainless steel, PVC and other compact material pipe

Function

Outputs

Analog output: 4~20mA, maxload 750 Ω .

RS 485 Modbus RTU

SD card

16 GB

Power supply

Rechargeable Lithium Battery, 3000mAh (Continuous operation of main battery 16 hours).

Display

240*128 back lit LCD

Transducer

$-15^{\circ}\text{C} \sim 80^{\circ}\text{C}$

Humidity

Up to 99% RH, non-condensing

Physical

Transmitter

NEMA 13, IP54

Transducer

Encapsulated design, IP68 Standard

Transducer cable

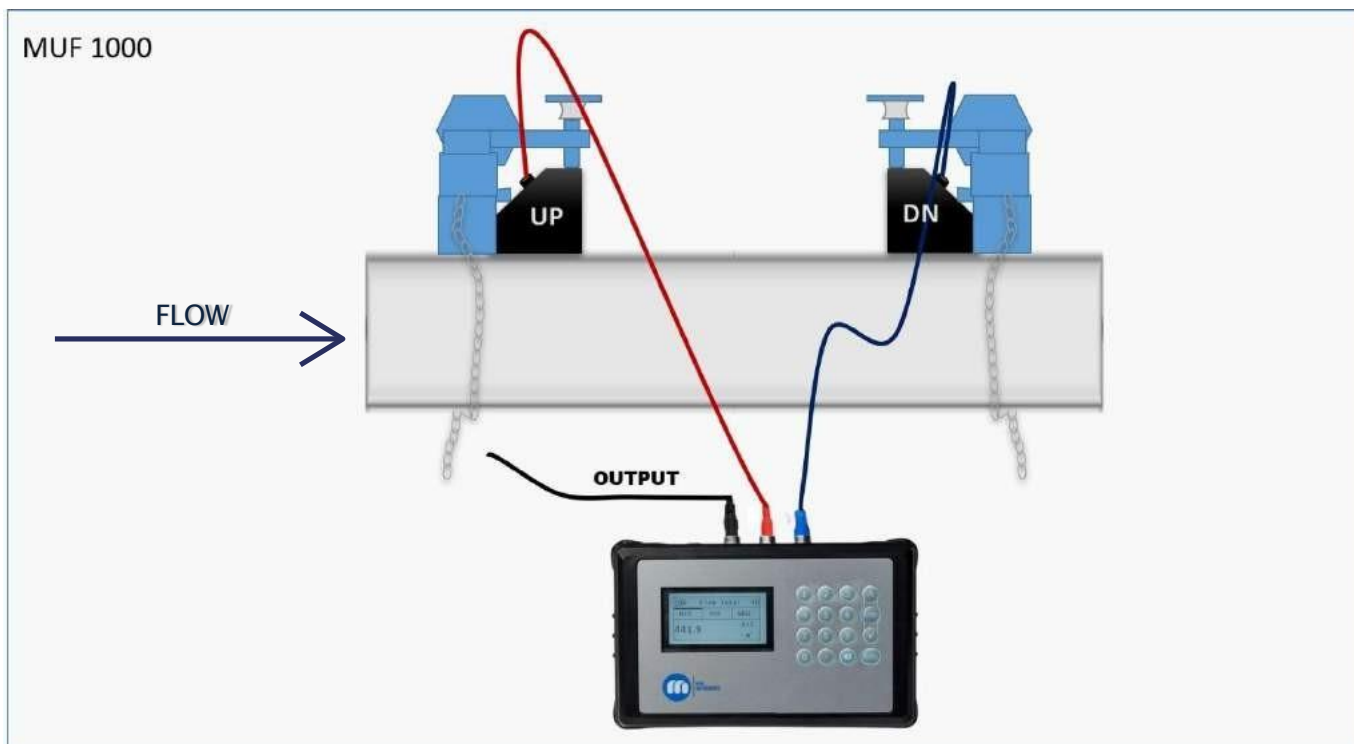
Cable length: 5m

Keyboard

Digital keys

*Specifications are subject to change without prior notice.

INSTALLATION DIAGRAM



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