



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

MUF 1200 MUF (B) 1200

INLINE ULTRASONIC FLOW/BTU METER



| Measuring & Beyond

CE

www.mialinstruments.com

MUF 1200



Mial Inline Ultrasonic Flow/BTU Meter

DESCRIPTION

Flow Meter:

The Mial MUF 1200 Inline Ultrasonic Flow Meters are designed to deliver precise and reliable flow measurement specifically for water applications. These meters come equipped with state-of-the-art integral inline flow sensors that ensures accurate and consistent readings.

BTU Meter:

The MUF (B) 1200 Inline Ultrasonic BTU meter is a cutting-edge technology designed for precise measurement of thermal energy in various heating and cooling systems. Using ultrasonic waves, it provides highly accurate readings, making it an efficient solution for energy management and billing in residential and commercial settings. This versatile device offers a cost-effective way to monitor and optimize energy consumption.

CALIBRATION

MIAL meters undergo meticulous wet calibration in our Flow lab, guaranteeing precision, ensuring reliable and accurate measurements for diverse applications across various industries. Every meter comes with Calibration certificate.

APPLICATIONS

The MUF 1200 Inline ultrasonic meters are most appropriate for nearly all clean liquids, provided that the pipeline is completely filled and pressurized.

HVAC Systems:

HVAC systems frequently integrate MIAL inline ultrasonic meters to monitor chilled water, condenser water – water glycol Solutions, enhancing energy efficiency and optimizing overall system performance.

Domestic Water Management:

Mial inline ultrasonic meters is a crucial tool in domestic water management, finding application across various sectors including.

- Domestic Potable/non potable Water : Mial Inline Ultrasonic flow meters accurately measure potable/ non potable water flow in homes & residential buildings aiding efficient usage and detecting distribution system leaks.
- Process Application Water: The process water is often used for manufacturing operations, cooling systems, and various other processes. Mial Inline Ultrasonic flow meters help monitor and control the flow of water within these systems, optimizing operations and ensuring resource efficiency.
- Irrigation Water: Mial Inline Ultrasonic flow meters are essential for measuring both clean water and irrigation systems, empowering farmers to accurately assess instantaneous water flow rate and volume, thereby facilitating the promotion of sustainable agricultural practices.



MUF 1200 Inline Ultrasonic meter

FEATURES

Consistent without any-Moving-Parts Design:

The MUF 1200 Inline Ultrasonic Meters employ wetted transducers that measure the transit time differential of ultrasonic signals to accurately determine the flow rate. The direct beam path orientation of the transducers enhances signal strength and promotes long-term reliability, ensuring accurate and consistent flow measurement in water applications.

Precision Maintained Across a Broad Flow Spectrum:

The MUF 1200 Inline Ultrasonic Meters can typically handle a wide range of flow rates, from low to high velocities. They are suitable for both low-flow and high-flow applications, offering versatility in measuring different fluid volumes.

Dual-Intuitive Backlit Screen and User-Friendly Interface:

The Inline ultrasonic flow meters often feature an intuitive user interface for configuration, calibration, and viewing real-time measurements. This interface includes a display screen, buttons for easy operation and access to relevant information.

Integrated Interval Data Logging Capability:

MUF 1200 Inline ultrasonic meters offer built-in data logging capabilities with 8 GB SD card, allowing for the storage (If data is stamped every 5 seconds, it has the capacity to store data for approximately 4 years) and retrieval of flow / Energy data over time. This can be useful for analysis, troubleshooting, or compliance purposes.

Versatile Communication Options and Multiple Outputs:

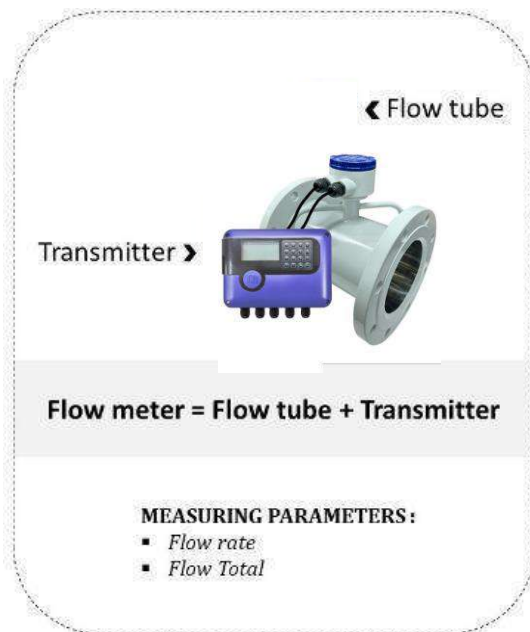
MUF 1200 Inline ultrasonic meters provide various output options for data collection and integration with control systems. Common output types include analog outputs (4–20 mA), digital outputs (RS485, Modbus), and pulse outputs.

Low Maintenance:

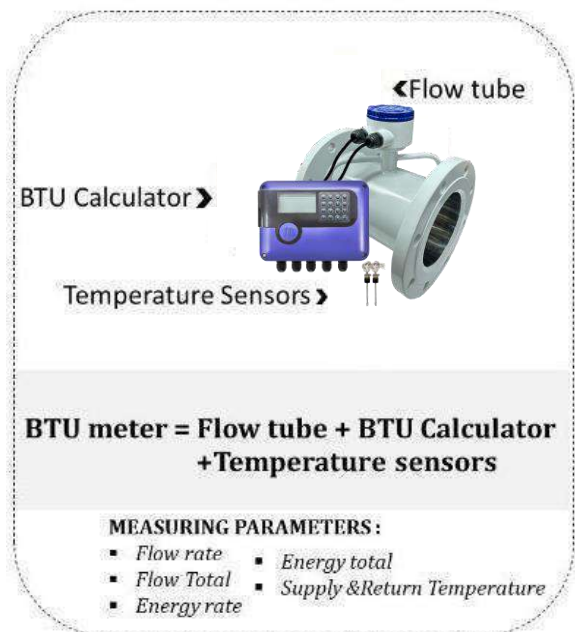
MUF1200 Inline ultrasonic meters are Designed for minimal maintenance requirements, these flow meters offer long-term reliability with reduced downtime.

Energy Measurement (BTU):

MUF1200 Inline ultrasonic meters In addition to flow measurement, these meters can also calculate energy consumption (BTU), making them suitable for Energy Management in Chilled water System.



MUF 1200 Inline Ultrasonic Flow meter



MUF (B) 1200 Inline Ultrasonic BTU meter

MUF 1200 specifications*

Operation and performance

Flow measurement

Ultrasonic differential transit-time Technology

Fluid types

Single medium, including a non-conductive medium and most clean liquids.

Fluid properties

Clean liquids in full (pressurized) pipes

Pipe sizes

50 MM – 300 MM

Pipe materials

metallic and non-metallic materials.

Flow Range

± 0.09 ft/s ~ ± 40 ft/s

Flow accuracy

$\pm 1\%$ of the measured Value

Achievable with process calibration

Repeatability

$\pm 0.2\%$ of the measured value

Linearity

$\pm 1\%$

Measurement parameters

Flow Meter– Instantaneous flow, totalized flow

Btu meter – Instantaneous energy, totalized energy, Instantaneous flow, totalized flow, supply temperature and return temperature.

Certification

Calibration certification, CE, ISO

Electronics

Enclosures

ABS

Wall mounted enclosure

Enclosure IP rating

IP65

Memory

EEPROM

Power supply

24 VDC/2A

Use 2-amp SMPS when employing AC power

Humidity

Up to 99% RH, non-condensing

Standard Analog outputs

Flow meter– 4 – 20 mA ,

Output programmed for instantaneous flow rate, 750 Ω maximum load

BTU meter– 4 – 20 mA ,

Output programmed for instantaneous flow rate / instantaneous energy rate, 750 Ω maximum load

Pulse outputs

Flow meter– Pulse

Programmed for Flow rate / Positive totalized flow / Net-totalized flow (Forward + Reverse Flow Total), 0~9999Hz, OCT, (min. and max. frequency is adjustable).

BTU meter– Pulse

Programmed for Flow rate / Positive totalized flow / Net-totalized flow (Forward + Reverse Flow Total) / Energy rate / Energy totalized (Heat total/Cool total), 0~9999Hz, OCT, (min. and max. frequency is adjustable)

Alarm Relay output

Network Connection

Modbus RTU RS 485

Data logging

8 GB removable memory card

Cable

10 m

Flow Tube

Operating Temperature range (Fluid)

5°F to 176°F (–15°C to 80°C)

Nominal Pressure

1.6 Mpa

Process connections

ANSI 150 Flanges

Materials

Flow Tube : Stainless steel

Flange : Carbon Steel

Optional: Stainless steel

IP rating

IP68

Meter installation orientation

Horizontal or Vertical

In a vertical installation, it is essential that the pipe be fully filled, with the flow direction oriented from bottom to top.

Energy measurement

Temperature sensor

PT1000

-22°F to 392°F (-30°C-200°C)

Loop-powered, three-wire, platinum RTD

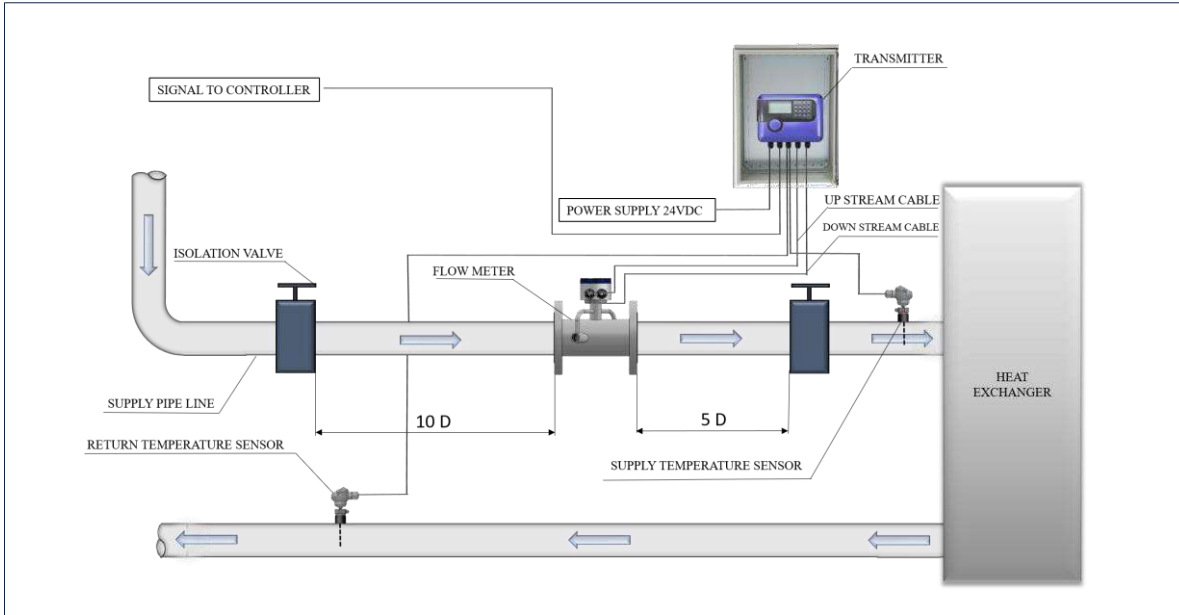
Mountings

Insertion

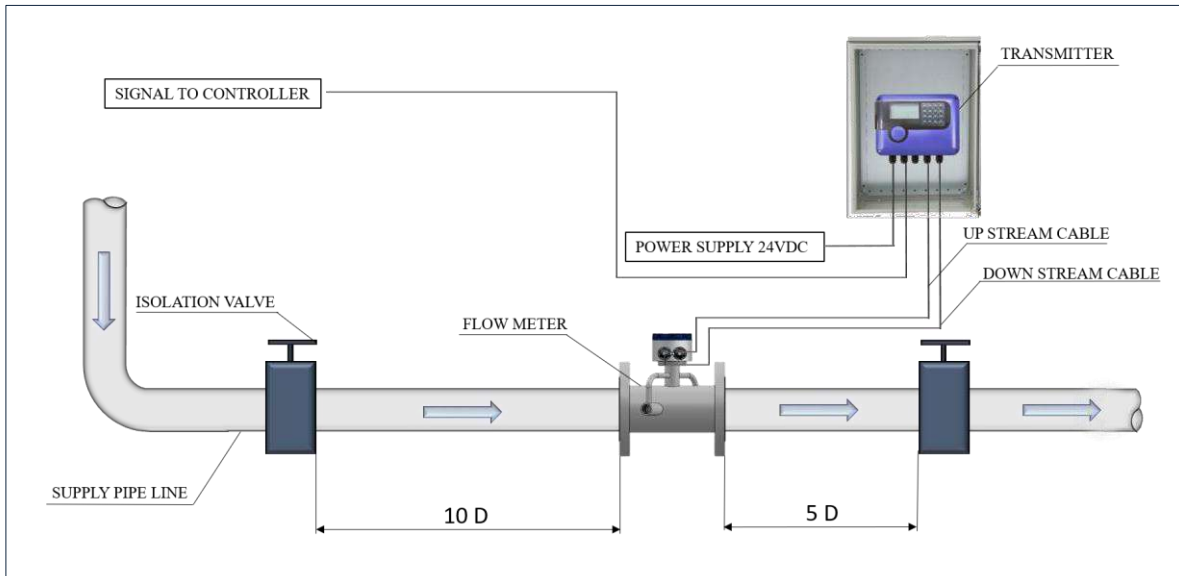
Wetted Immersion Temperature sensor with Thermowell

*Specifications are subject to change without prior notice.

INSTALLATION DIAGRAM



MUF (B) 1200 Inline ultrasonic BTU Meter Installation Diagram



MUF 1200 Inline ultrasonic Flow Meter Installation Diagram

ORDERING CODE

Meter Model Coding = MUF 1200/MUF(B) 1200-A- BB-CDE-FGH-IJK

Model

Flow meter = MUF 1200

Btu Meter = MUF(B)1200

FLOW SENSOR CONFIGURATION INFORMATION

A – Mode of Connection

1 = Inline

BB= Pipe Size

02 = 2"	06 = 6"
25 = 2.5"	08 = 8"
03 = 3"	10 = 10"
04 = 4"	12 = 12"
05 = 5"	

C = Shell Material

1 = Stainless Steel 304

D = Wetted Material Surface

1 = SS finish

E = Process Connection

1 = ANSI 150 Flanges

F = Nominal Pressure

1 = 1.6 Mpa

TRANSMITTER CONFIGURATION INFORMATION

G = Electronics Enclosure Mounting Configuration

1 = Remote

H = Flow Direction

1 = Unidirectional

2 = Bidirectional

I = Input Power

1 = 24 VDC

J = Signal Output

1 = 4-20 mA & Pulse

K = Communication

1 = Modbus RTU RS485

All future orders will adhere to the standard specifications outlined in the order code, ensuring consistency and quality across items



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