MIAL®
INSTRUMENTS PVT.LTD.
Measuring & Beyond

MUF 1200 (0.5%)
MUF(B) 1200 (0.5%)

CLAMP ON ULTRASONIC
FLOW/BTU METER

Measuring & Beyond

CE

CERTIFIED ISO 9001:2015 COMPANY

www.mialinstruments.com

MUF 1200 (0.5%)

Clamp on Ultrasonic Flow/BTU Meter

DESCRIPTION

Flow Meter/BTU Meter:

Introducing the MUF 1200/MUF(B) 1200 Clamp on Transit Time Ultrasonic Flow/Btu Meter, a cutting-edge solution for accurate and non-intrusive measurement needs. Leveraging transit-time technology, this meter ensures precise readings without the need for invasive installation procedures.

Its wall-mount design adds versatility to its application, catering to various setups and environments with ease. With the capability to measure both flow and thermal energy (BTU), it offers comprehensive insights into fluid dynamics and energy consumption within facilities. The MUF 1200/MUF(B) 1200 is the epitome of convenience and efficiency, providing users with reliable data for informed decision-making and effective maintenance strategies.

CALIBRATION

Each MUF 1200 / MUF(B) 1200 meters undergoes meticulous wet calibration in our state-of-the-art flow laboratory, tailored to the specific pipe size and on-site application requirements. Accompanying every meter is a comprehensive certificate of calibration and detailed test report, ensuring precision and reliability in measurement

APPLICATIONS

HVAC Application:

The MUF 1200/MUF(B) 1200 Clamp on Transit Time Ultrasonic Flow/Btu Meter offers unparalleled functionality in HVAC applications. Whether it's monitoring the flow of chilled water in air conditioning systems or assessing the thermal energy consumption of heating systems, this meter excels. Its non-invasive installation process and accurate measurements make it an ideal choice for HVAC maintenance and optimization tasks.

Replacement of Defective Devices:

In scenarios requiring the replacement of defective flow and energy measurement devices, the MUF 1200/MUF (B) 1200 Clamp on Transit Time Ultrasonic Flow/Btu Meter stands out as the ideal solution. Its versatility and ease of installation enable swift replacement without disrupting existing infrastructure. By seamlessly integrating into the system, it ensures uninterrupted monitoring and precise measurements.

Ease of installation:

The MUF 1200/MUF(B) 1200 Clamp-on Transit Time Ultrasonic Flow/Btu Meter is well-suited for scenarios requiring accurate flow measurement, offering seamless integration without requiring modifications to existing piping arrangements or system downtime.

Performance and Efficiency Management:

For assessing the performance and efficiency of fluid systems, the MUF 1200/MUF(B) 1200 Clamp on Transit Time Ultrasonic Flow/Btu Meter delivers unmatched accuracy. Whether it's evaluating the effectiveness of pumps or monitoring regulating valves, this meter provides comprehensive insights. Its ability to measure both flow and thermal energy facilitates thorough performance assessments, enabling proactive maintenance and optimization strategies.

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FEATURES

Wide Liquid Temperature:

With a wide liquid temperature range, the MUF 1200/MUF (B) 1200 Clamp on Transit Time Ultrasonic Flow/Btu Meter is capable of accurately measuring flows across various temperature conditions. Whether dealing with hot or cold liquids, this meter maintains its precision, providing reliable data for monitoring and control purposes. Its versatility ensures consistent performance across a broad spectrum of operating temperatures.

Data Logger Function:

The MUF 1200/MUF (B) 1200 Clamp on Transit Time Ultrasonic Flow/Btu Meter incorporates a data logger function, available in the ±0.5% model. This feature enables the recording and storage of flow and energy data over time, facilitating comprehensive analysis and reporting. Users can track trends, identify anomalies, and optimize system performance based on historical data captured by the meter.

Thermal Energy Measurement Capability:

Equipped with thermal energy measurement capability, the MUF (B) 1200 Clamp on Transit Time Ultrasonic Btu Meter offers a complete solution for energy monitoring and management. Beyond flow rate measurement, it accurately quantifies thermal energy consumption, allowing for thorough analysis of heating and cooling systems' efficiency. This capability enhances its utility in energy audits and optimization efforts.

Versatility Across Pipe Materials and Diameters:

Designed to accommodate different pipe materials and diameters ranging from 25mm to 2000mm, the MUF 1200/MUF(B) 1200 Clamp onTransit Time Ultrasonic Flow/Btu Meter offers unmatched versatility. Whether installed on metallic or non metallic , and regardless of pipe size, this meter delivers consistent and accurate measurements. Its broad applicability makes it a go-to solution for diverse industrial and commercial fluid measurement needs.

Very wide flow range capability

This device can accurately measure flow rates ranging from an extremely low +0.03m/s to a substantial ±5m/s, catering to a diverse array of flow conditions. Its wide range capability ensures reliable performance across various fluid velocities, offering versatility in applications.

BENEFITS OF FLOW/BTU METER

- Easy installation with clamp-on transducers, reducing time and cost associated with installation procedures.
- Wide liquid temperature range ensures accurate measurements across varying operating conditions.
- Data logger function (available in the ±0.5% model) enables comprehensive data recording and analysis for performance optimization.
- Bi -directional flow measurement capacity
- Thermal energy measurement capability provides a complete solution for energy monitoring and management.
- Versatility across pipe materials and diameters (25mm to 2000mm) offers flexibility and applicability to diverse industrial settings.
- Elimination of pipe cutting or system shutdowns minimizes disruptions to operations, maximizing productivity and efficiency.

MUF 1200 specifications*

Operation and performance

Flow measurement

Ultrasonic diffrential transit-time Technology

Fluid types

Water

Fluid properties

Clean liquids in full (pressurized) pipes

Pipe sizes

25 MM - 2000 MM

Pipe materials

metallic and non-metallic materials.

Flow Range

±0.09ft/s ~± 40ft/s

Flow accuracy

±0.5% of the measured Value

Achievable with process calibration

Repeatability

±0.15% of the measured value

Linearity

±0.5%

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

Aluminium

Wall mounted enclosure

Enclosure IP rating

IP65

Memory

EEPROM

Power supply

24 VDC/2A

Use 2-amp SMPS when employing AC power

Ambient temperature

32°F to 140°F (0°C to 60°C)

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

RS 485 Modbus RTU

Data logging

16 GB removable memory card

Cable

9 m

Flow Transducer

Operating Temperature range (Fluid)

Standard: 5°F to 176°F (-15°C to 80°C)

Optional: 5°F to 266°F (-15°C to 130°C)

[High temperature flow transducer]

Process connections

Clamp on/Strap on

Materials

Aluminium alloy

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

Standard: -4°F to 176°F (-20°C to 80°C) [Clamp on]

Optional: -4°F to 356°F (-20°C to 180°C) [High temperature sensor Clamp on]

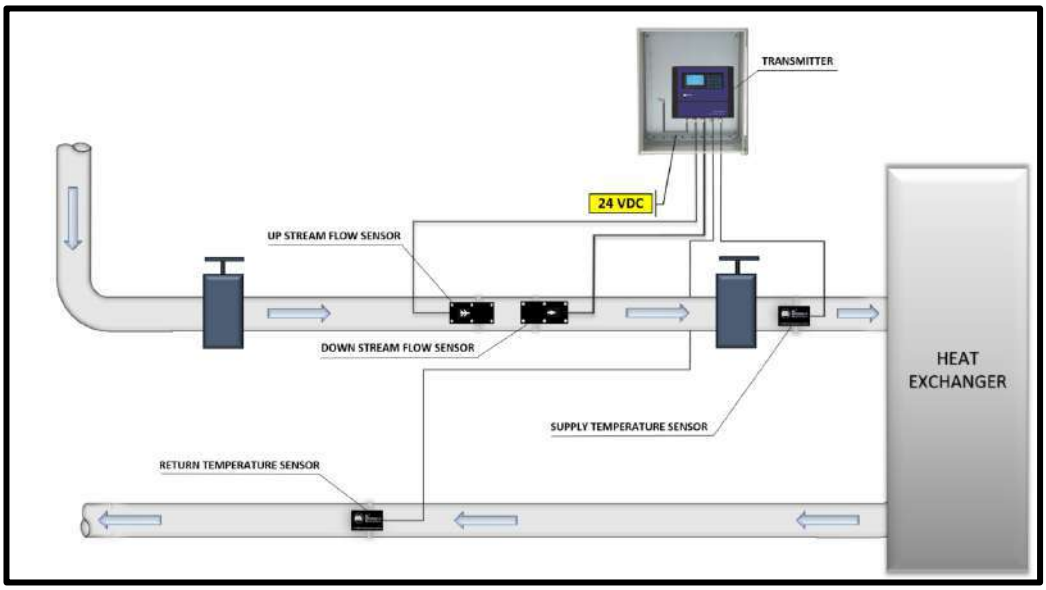
Optional: -22°F to 392°F (-30°C to 200°C)
[Wetted Immersion Temperature sensor with Thermowell]

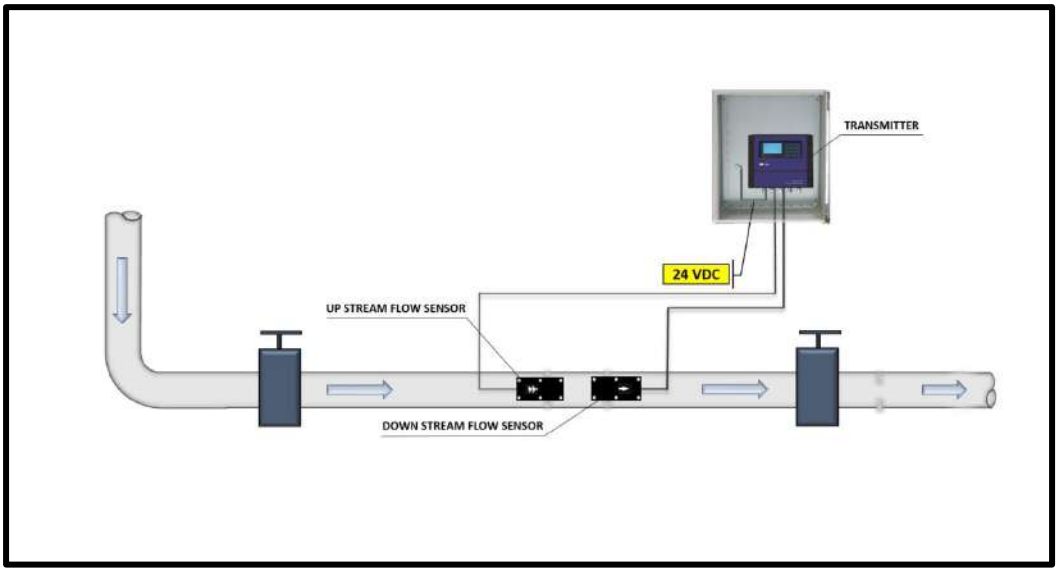
Mountings

Clamp on/Strap on

*Specifications are subject to change without prior notice.

INSTALLATION DIAGRAM





ORDERING CODE

Meter Model Coding = MUF 1200(0.5%)/MUF(B) 1200(0.5%) -BB-CDE-FGHI

Model

MUF 1200 (0.5%) = Mial Clamp On Ultrasonic Flow Meter
MUF (B)1200 (0.5%) = Mial Clamp On Ultrasonic BTU Meter

TRANSDUCER CONFIGURATION INFORMATION

BB= Pipe Size

01 = 1"	04 = 4"
32 = 1.25"	05 = 5"
15 = 1.5"	06 = 6"
02 = 2"	08 = 8"
25 = 2.5"	10 = 10"
03 = 3"	nn = Pipe size, 12" – 48"

C = Transducer Cable Length

1 = 9m

D = Process Connection

1 = Clamp On

E = Transducer Selection

1 = Standard Clamp on Transducer
2 = High Temperature Clamp on Transducer

F = Temperature Sensor Selection

1 = Clamp on Temperature sensor
2 = Immersion Temperature sensor
3 = Clamp on High Temperature sensor

TRANSMITTER CONFIGURATION INFORMATION

G= Input Power

1 = 24 VDC

H= Signal Output

1 =OCT, Relay, RS485 (Modbus), 4–20mA
2 = OCT, Relay, RS485 (Modbus),0–4 mA & 4–20mA

I = Flow Direction

1 = Unidirectional
2 = Bidirectional

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

MIAL® INSTRUMENTS PVT.LTD. Measuring & Beyond

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