



Measuring & Beyond



MIAL INSTRUMENTS PVT. LTD.

 www.mialinstruments.com

MUF 1200
CLAMP ON ULTRASONIC FLOW/ BTU METER





Wall-mount Transit-Time Ultrasonic Flow/Btu Meter

MUF1200/MUF(B)1200 Wall-mount Transit Time Ultrasonic Flow/Btu meter works on the transit-time technology. The clamp-on ultrasonic transducers (sensors) are mount on the external surface of the pipe for non-invasive and non-intrusive flow measurement of liquid in fully filled pipe.

One pair of transducer is sufficient to cover most common pipe diameter ranges. It has thermal energy measurement capability support to carry out a complete analysis of thermal energy calculation in any facility (Btu). This flexible and easy to use flow/Btu meter is the ideal tool for the service and maintenance activities.



Features:

1. Clamp on transducers are easy to install, cost effective, and require no pipe cutting or shut down of the running system.
2. Wide liquid temperature range.
3. Data logger function ($\pm 0.5\%$ model).
4. Thermal energy measurement capability.
5. Commonly used in different pipe materials and diameters from 25mm to 2000mm.

Applications

General

- Service and maintenance**
- HVAC applications**
- Replacement of defective devices**
- Support of commissioning process and installation**
- Performance and efficiency measurement**
- Evaluation and assessments
- Capacity measurement of pumps
- Monitoring of regulating valves
- Energy efficiency audits**

Water and waste water industry - hot water, cooling water, potable water, sea water etc.)

Petrochemical industry

Chemical industry -chlorine, alcohol, acids, .thermal oils.etc

Refrigeration and air conditioning systems

Food , beverage and pharmaceutical industry

Power supply- nuclear power plants, thermal & hydropower plants), heat energy boiler feed water.etc

Metallurgy and mining applications

Mechanical engineering and plant engineering-pipeline leak detection, inspection, tracking and collection.



Specifications : MUF 1200 with Accuracy $\pm 1\%$

Performance

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
Repeatability	: 0.2% of measured value
Linearity	: $\pm 1\%$
Pipe size	: 1" to 48" (25mm to 1200mm). Pipe size under 1" is an option
Fluid	: Water

Function

Analog output	: 4~20mA, max load 750 Ω .
Pulse output	: 0~10KHz
Communication	: RS485 Modbus
Power supply	: 24 VDC/1A
Display	: 240*128 back lit LCD
Temperature Transmitter	: -4 Deg F~140 Deg F (-20 Deg C~60 Deg C)
Transducer	: -4 Deg F~140 Deg F (-20 Deg C~60 Deg C, standard) :
Humidity	Up to 99% RH, non-condensing

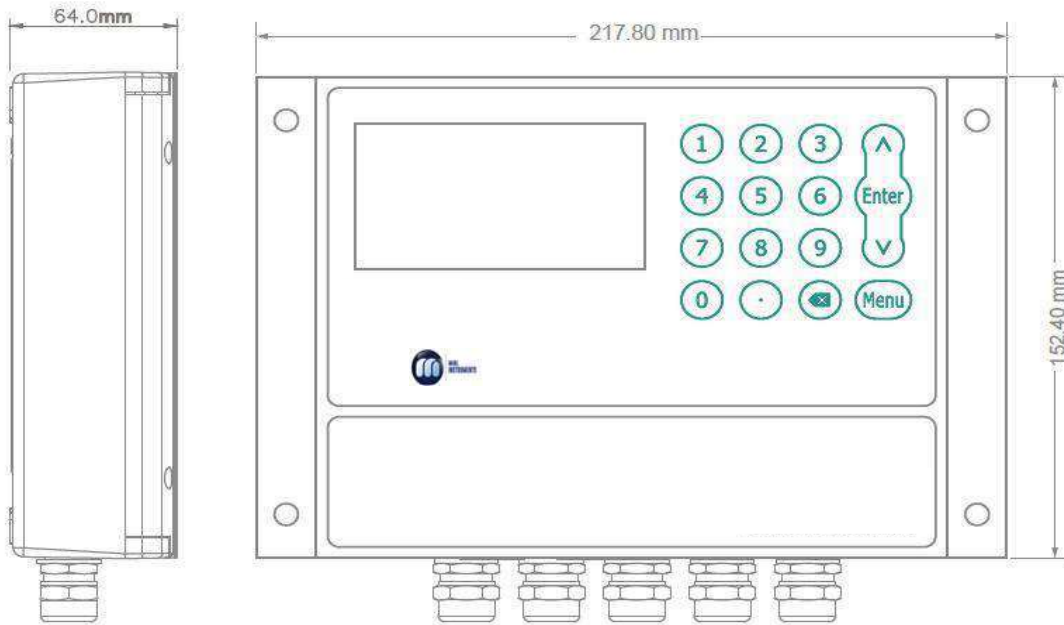
Physical

Transmitter	: PC/ABS, IP65
Transducer	: ABS, IP68
Encapsulated design	
Double-shielded transducer cable	
Standard cable length: 30ft(9m)	



Dimensional Sketches: MUF 1200 with Accuracy $\pm 1\%$

Transmitter:



Transducer:





Specifications: MUF 1200 with Accuracy $\pm 0.5\%$

Performance

Flow range	: $\pm 0.09\text{ft/s} \sim \pm 40\text{ft/s}$ ($\pm 0.03\text{m/s} \sim \pm 12\text{m/s}$)
Accuracy	: $\pm 0.5\%$ of measured value
Repeatability	: 0.15% of measured value
Linearity	: $\pm 0.5\%$
Pipe size	: 1" to 80" (25mm to 2000mm). under 1" Pipe size model is a customized option
Fluid	: Water

Function

Analog output	: 4~20mA, max load 750 Ω .
Pulse output	: 0~9999Hz, OCT, (min. and max. frequency is adjustable)
Relay output	: SPST, max 1Hz, (2A @ 30V DC)
Communication	: RS485 Modbus
Power supply	: 24 VDC
Memory	: TF card (8Gb-removable)
Display	: 240*128 back lit LCD
Temperature Transmitter	: -40 Deg F~140 Deg F (-40 Deg C~ 60 Deg C)
Transducer	: -40 Deg F~176 Deg F (-40 Deg C~80 Deg C,standard)
Humidity	: Up to 99% RH,non-condensing

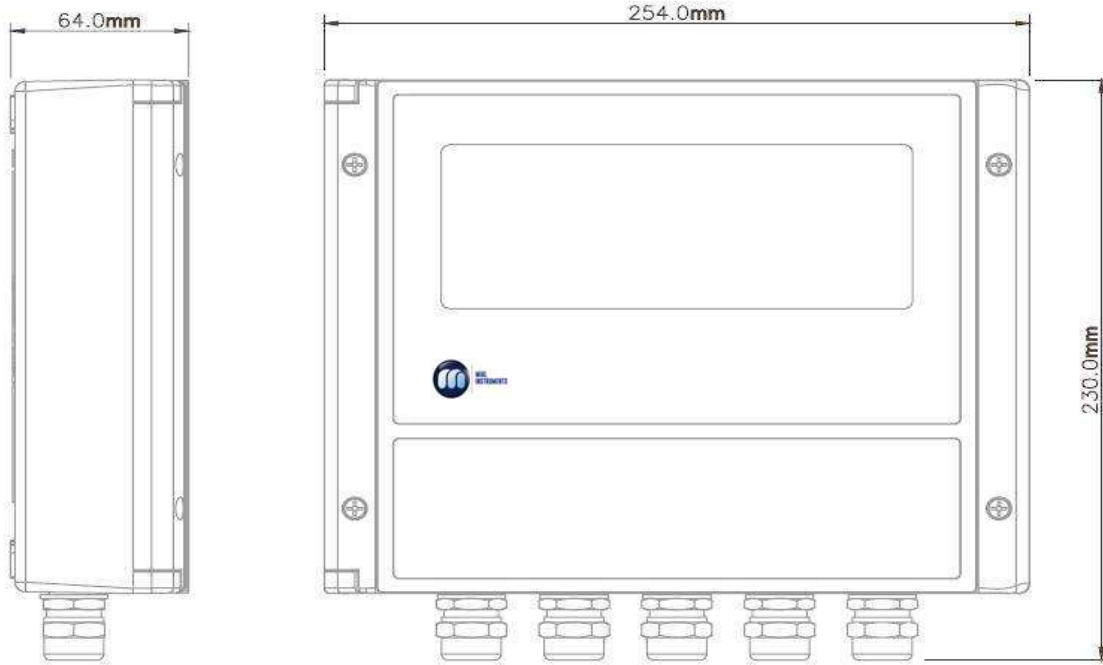
Physical

Transmitter	: IP65- Aluminium
Transducer	: IP68-Aluminium alloy
Encapsulated design	
Double-shielded transducer cable	
Standard cable length:30ft(9m)	

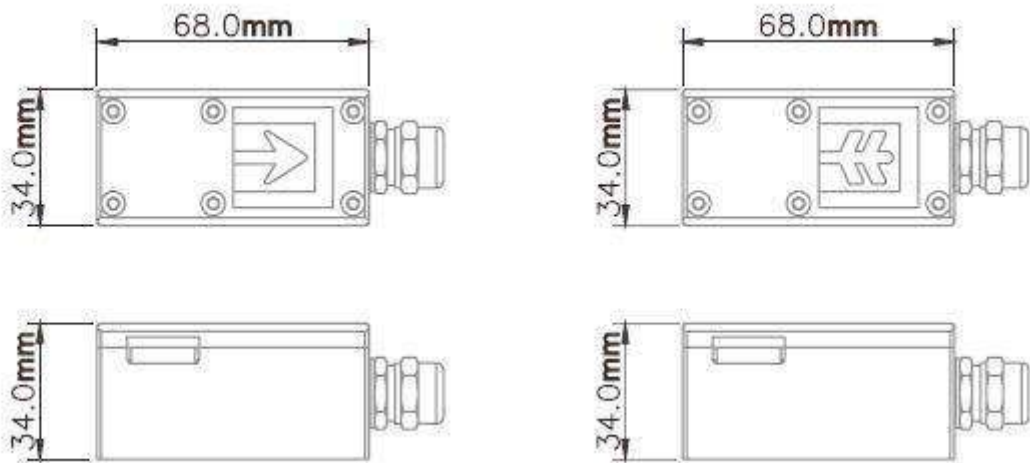


Dimensional Sketches: MUF 1200 with Accuracy $\pm 0.5\%$

Transmitter:



Transducer:





Transmitter (Accuracy 1%)



Transducer



Transmitter (Accuracy 5%)



Coupling Compound



S-S Belt



PT1000 clamp-on Temperature sensors



Configuration Code: MUF 1200/MUF(B) 1200 with Accuracy ±1%

MUF 1200/MUF(B)1200- Ultrasonic flow/Btu meter- Wall mount

Accuracy : ±1% of the measure value
 Power supply : 24 VDC @ 1A max
 Transmitter Enclosure : IP65, ABS

Code	Output
1	OCT, Relay, RS485 (Modbus), 4-20mA
2	OCT, Relay, RS485, 4-20mA · RTD

Code	Transducer
CD01	Clamp-on, IP68. Operating temperature: -4°F ~ +140°F (-20°C ~ +60°C)

XXX	Transducer cable length
030	Standard length 30ft (9m)

Code	Temperature sensor
PT1000	Pt1000 temperature sensor

Standard Flow meter model: MUF 1200
Description: Standard clamp-on type ultrasonic flow meter, OCT, Relay, RS485, 4-20mA , 30ft cable.

Standard Btu meter model: MUF(B) 1200



Configuration Code: MUF 1200/MUF(B) 1200 with Accuracy $\pm 0.5\%$

MUF 1200/MUF(B) 1200 Clamp On Ultrasonic Flow/Btu meter- Wall mount

Accuracy : $\pm 0.5\%$ of the measure value
 Power supply : 24 VDC
 Transmitter Enclosure : IP65, Aluminium

Code	Output
1	OCT, Relay, RS485 (Modbus), 4-20mA
2	OCT, Relay, RS485, 4-20mA · RTD

Code	Transducer
C1	Clamp-on, IP68. Operating temperature: -40°F ~ +176°F (-40°C ~ +80°C)

XXX	Transducer cable length
030	Standard length 30ft (9m)

Code	Temperature sensor
PT1000	Pt1000 temperature sensor

Standard model: MUF 1200

Description: Standard clamp-on type ultrasonic flowmeter, OCT, Relay, RS485, 4-20mA , 30ft cable.

Standard Btu model: MUF(B) 1200

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