



MiKamachi BTU Meter

ULTRASONIC BTU METER

MUBM 18 Reliable Net Heat Measurement



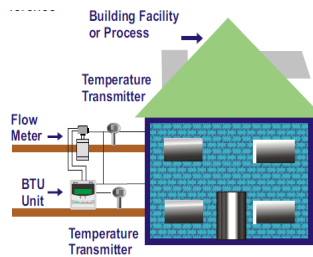
MiKamachi Ultrasonic BTU net Heat Meter MUBM 18 is a complete System for Commercial Complexes and Residential Tenant Billing

- Complete system consists of Ultrasonic Flowmeter, Matched pair of Temperature sensors and BTU computing unit
- Accuracy better than $\pm 1\%$ of (Optional $\pm 0.5\%$) of measured value
- Accurately calibrated flowmeters
- Microprocessor based signal converters ensures highly accurate results over period of time
- RS 485 communication for integrating the meter with plant SCADA or DCS system
- User selectable engineering units for heat flow measurement

What is Net Heat Metering?

In almost all Cooling applications chilled water is used. What is of more interest is not the volumetric flow rate but the amount of energy extracted from the cooling media. This can be done by the measurement of flow of the cooling medium, the inlet and outlet temperature and then using temperature difference to calculate the Net Heat transferred.

MiKamachi Ultrasonic BTU Meters (MBUM) / Net Heat Meters use accurately calibrated Ultrasonic Flowmeter, a matched pair of temperature sensors and computing unit inside the flow meter to calculate Net Heat consumed/transferred.



Net Heat = $Q_m \times \text{Enthalpy Difference (HT1 - HT2)}$

Advantages over Conventional BTU metering systems:

Conventionally the billing is done according the floor space utilized by a tenant. This results in heavy loss either to the service provider or tenant as actual consumption of energy is not calculated.

The MiKamachi BTU meters offer the accurate billing based on the actual consumption of energy by each tenant. Thus each tenant pays only for the usage of actual energy. This provides accurate billing solution.

Technical Specifications

Net Heat / BTU Meter

Meter size : DN 10 – DN 6000 / 3/8" – 240"

Design : Clamp On / Insertion Type / Flanged Type

Measuring Tube : MS Epoxy painted / SS 304 / PI. Specify

Sensors : Suitable for the application based on type

Transmitter Housing : Epoxy / Powder Painted Aluminum

Protection class : IP 65 / IP 67

Signal converter

Power supply : 24 - 230 VAC, 50 Hz / VDC optional

Accuracy : $\pm 0.5\%$ of measured value

Output : 0 – 20mA or 4 – 20mA

Load : 500 Ohm

Communication Port : RS485 (Protocol MODBUS, MBUS, MODBUS ASCII/ RTU)

OCT output : Positive/Negative/Net Flow or integrating Flowrate Pulse or instant flow rate frequency signal

Forward/reverse measurement : Direction identified as + / -

Local display : 16 x 2 Alphanumeric LCD backlit

Flow units : User defined (m³/hr, LPM, LPH or USGPM)

Heat Units: GJ / Kcal / BTU

Protection class : IP 65 / IP 67

Temperature sensors

RTD : Matched pair of PT 100 / PT1000 on request

Net Heat Meter

Mounting : Panel / wall / Rail mounted

Inputs : 3 x 4 – 20mA from flowmeter and temperature transmitters

Built-in data-logger saves 64 months total flow data for 5 years

Data-logging parameters user selectable

Special Features

- All components of system viz. flowmeters, temperature sensors and net heat computing unit are manufactured by MiKamachi.
- The MUBM system uses 'most accurate' MiKamachi Ultrasonic flowmeters for the measurement of flow
- Each and every flowmeter is factory calibrated by 'Dynamic Volume Comparison' method to ascertain highest accuracy over longer period of time
- Temperature sensors used are matched pair and accurate
- Wide choice of user defined flow units for the flowmeter
- Flowmeters display instantaneous and totalized flow
- User defined (Factory set) units for the Net Heat computing units Kcal / GJ / BTU
- Non volatile memory stores the data in case of power failure
- Wide range of power supply 24DC to 240Vac
- With 'Clamp On' sensor, the system can easily be installed on existing pipe networks without disturbing the system operation (Unlike with other flanged type heat/BTU meters)

MiKamachi BTU Meter : MUBM 18



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