MaxiFlo™

Ultrasonic Heat Meter

Overview

MaxiFlo™ ultrasonic water meter is hallmarked by its high performance and reliability that are based on successful, field-proven technology.

The meter operates with ultrasonic flowmeter transducers in combination with temperature sensors for measuring supply water flow rate and the temperature difference between supply water and return water, and then measure and display the heat quality either released or absorbed by the water flowing through a heat exchanger. It can execute flow rate measurement-computation-display integrated functions.

Ultrasonic Heat (Cold) Meter (Series MUC)

Main Features

- Based on transit-time ultrasonic flowmeter technology

- Powered by battery that lasts for over 10 years

- No pressure loss

- No moving part

- Can measure heat and cold usage

- Can be mounted at any angle in either horizontal or vertical direction

- A wide selection of configurations available – Household types (MUC) and Industrial types (MU-PA, clamp-on ultrasonic flowmeter with temperature transmitters)

Household Type (MUC)- – DN15mm~DN40mm

Measuring Principle

When an ultrasonic wave travels in a liquid, the flow of the liquid will cause its speed to change. When it travels in the flow direction, its speed increases and against it, decreases. By measuring the difference in travel times between both directions, one can measure the flow speed.

The ultrasonic flowmeter has a pair of sensors mounted upstream and downstream on the surface of the pipe. These 2 sensors transmits and receives the signal and the microprocessor inside the main unit calculates the travel-time difference (transit-time difference) between upstream signal and downstream signal. This time difference is directly proportional to its flow speed. When the flow speed is determined, then the flow rate is calculated applying the size of the pipe.

For more technical information on the transit-time ultrasonic flowmeters, please refer to our website, http://www.maxiflo.co.kr/English/Products/Flowmeters/ultrasonic.htm.

Industrial Type (MU-PA) – DN15mm~DN6000mm

Household Type (MUC)

Technical Specifications

Size	DN15	DN20	DN25	DN32	DN40
Measuring accuracy	Class-II				
Normal Flow Rate	0.75 m3/h	1.5 m3/h	2.5 m3/h	6 m3/h	10 m3/h
Minimum Flow Rate	0.0075 m3/h	0.015 m3/h	0.025 m3/h	0.092 m3/h	0.144 m3/h
Maximum Flow Rate	1.5 m3/h	2.5 m3/h	5.0 m3/h	12 m3/h	20 m3/h
Temperature range	4℃ ~ 95℃				
Temperature difference range	3℃ ~ 70℃				
Type of temperature sensor	Pt1000, DIN/IEC751B				
Min. temperature deviation of pairing temperature sensors	±0.1℃				
Flow Rate display resolution	0.001 m3/h				
Data collection time interval	30 sec.				
Internal storage	EEPROM				
Display	LCD (8 digits + prompting character) Word height: 8.5 mm				
Communication mode	M-BUS				
Unit of heat displayed	KWH				
Battery life	A 3.6V lithium battery cell capable of working continuously for over 10 years.				
Ambient temperature	0℃ ~ +55℃				
Storage temperature	-20℃ ~ +60℃				
Max. working pressure	1.6MPa				
Pressure loss at normal Flow Rate	0.06 bar	0.22 bar	0.22 bar	0.22 bar	0.22 bar
Protection class	IP54				
Weight	0.94 kg	1.02 kg	1.02 kg	2.65 kg	3.32 kg
Temperature sensor cable length	1.5 m (The temperature sensor is already fitted on Flow Rate transducer before delivery)				
Power	Built-in 3.6V Lithium Battery (Over 10 years of run time)				

Dimensions
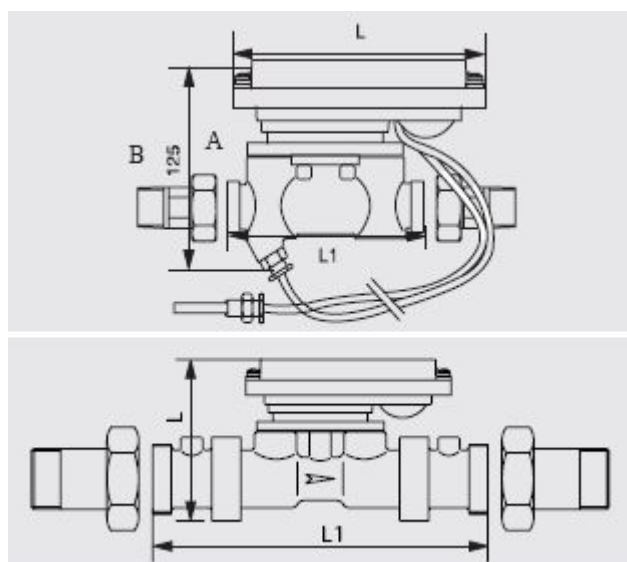
Dimension Table

Pipe size, mm	DN15	DN20	DN25	DN32	DN40
A – Connecting pieces not used	G3/4″	G1″	G11/4″	G1-1/2″	G2″
B – Connecting pieces used	R1/2″	R3/4″	R1″	R11/4″	R11/2″
L	146	155	155	111.6	119.5
L1	110	130	130	232	247
Length of connecting piece	42	46	59	63	63

Additional options for ordering (Please indicate.)
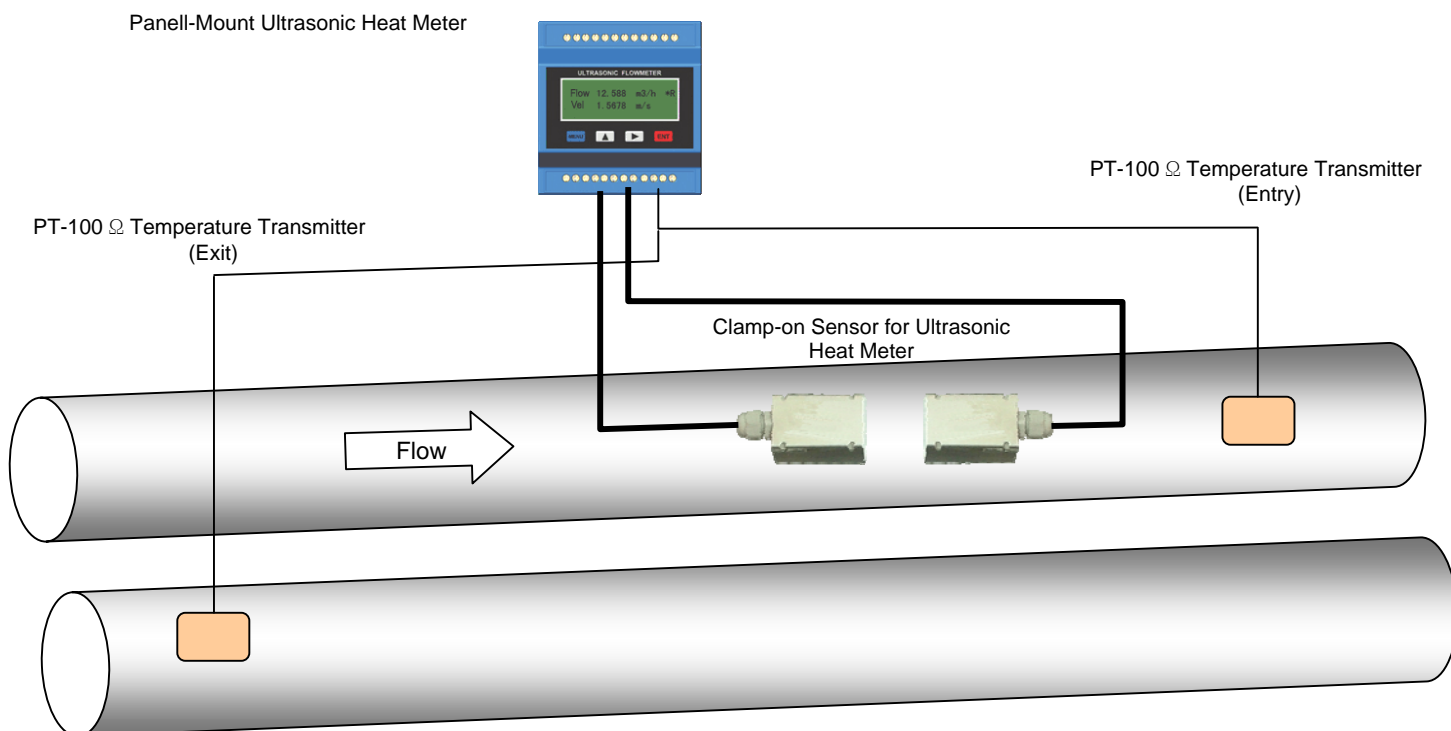- Cold meter function
- RS485 interface
- Connection Fittings

Industrial Type (MU-PA)

Overview

The industrial type ultrasonic water meter is just an added option of our MU series ultrasonic flowmeters with clamp-on sensors. The fixed types such as wall-mount (MU-WA) and panel-mount (MU-PA) models of our MU series ultrasonic flowmeters have built-in function for heat (cold) meter. So, we recommend you to consult with the MU series clamp-on ultrasonic flowmeter catalog from our website: http://www.maxiflo.co.kr/Cat-Manual/Catalog_Ultrasonic.pdf. The physical layout of a complete ultrasonic heat meter is illustrated below;

Schematic Diagram of the Industrial Type Ultrasonic Heat Meter

Panell-Mount Ultrasonic Heat Meter

PT-100 Ω Temperature Transmitter
(Entry)

PT-100 Ω Temperature Transmitter
(Exit)

Clamp-on Sensor for Ultrasonic
Heat Meter

Flow

Technical Specification

Pipe size	**DN15mm ~ DN6000mm**
Flow Velocity	0 ~ 16 m/s
Flow Sensor	IP68 Clamp-on Sensor
Temperature Sensor	PT-100Ω RTD Temperature Sensor (0 ~ 150 ℃)
Flow Accuracy	±0.5 ~ 1% of Flow Rate
Display	Alphanumeric 2x20 digit backlight LCD with 4 keypad
Output	4~20mA, Frequency, Relay, RS-485
Power Source	24VDC

For other specifications of flowmeter, please consult with the ultrasonic flowmeter, http://www.maxiflo.co.kr/Cat-Manual/Catalog_Ultrasonic.pdf.

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