LIANYUNGANG TENGYUE ELECTRONIC TECHNOLOGY CO.,LTD
15 XINLONG ROAD,HAIZHOU ECONOMIC DEVELOPMENT ZONE,LIANYUNGANG,JIANGSU,CHINA

ULTRASONIC HEAT METER (DN15~40) - Instructions Manual

Please follow the instructions carefully.
Do not charge, short-circuit, modify, ignite or violently impact the battery.

Contents

Ⅰ.Overview

The Ultrasonic Heat Meter is the meter that measures the flow volume and displays the heat energy released or absorbed by water flow when passing through the heat exchange system. It measures and captures the physical quantity - the flow volume of the heat carrier and the temperature of inlet and outlet by two kinds of sensors, and it captures the heat energy value by the compensation of the density and the heat enthalpy and the integral computation.

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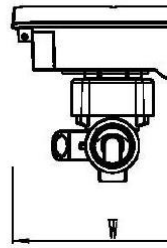
Ⅱ.Technical Parameters

Nominal diameter	15	20	25	32	40
Max flow Qs(m^3/h)	3	5	7	12	20
Nominal flow Qp(m^3/h)	1.5	2.5	3.5	6	10
Transitional flow Qt(m^3/h)	0.15	0.25	0.35	0.6	1
Min flow Qi(m^3/h)	0.03	0.05	0.07	0.12	0.2
Max flow indication	99999.99 m^3				
Heat max indication	99999999kW.h				
Accuracy class	Class B				
Pressure loss	≤0.025 Mpa				
Max working pressure	1.6 Mpa				
Temperature difference range	(3~75)K				
Temperature range	(4~95)℃				
Resolution temperature	0.01℃				
Environmental category	Class A				
Battery life	⩾8years				
Installation position	Horizontal or Vertical				
Temperature sensor	Pt1000				
Display	LCD, 8 digits + additional characters				
Interface	Optical/RS 485/M-bus				
Protocol	Modbus/CJ-188				

Ⅳ.Outline Dimension



Display order	Data name	Normal Display
Normal	Dormancy	No display
1	Heat total	XX kW·h
2	Cold total	XX kW·h
3	Flow total	X. XXX m^3
4	Instantaneous power	XX kW
5	Working time total	XXXXX h
6	Inlet temperature	XX. XX ℃
7	output temperature	XX. XX ℃
8	Temperature difference	X. XX K
9	Current date	XX XX XX
10	Instantaneous flow	XX. X / XX. XX m^3/h
11	Instrument address	XXXXXXXX
12	Current voltage	X. XX V
13	Software version	E XXXXX.X

Keep the trigger touch area (button) into the P2 history storage, as shown below:

1	History	XX（year）-XX（month）
2	Heat total	X kW·h/GJ
3	Flow total	X. X m^3

Keep again the trigger touch area (button) into the P3 verification state, as shown below:

1	Simulated heat/simulated cooling
2	current time
…	Setting parameters
	Instantaneous power(KW)
11	Signal state

Keep again the trigger touch area (button) into the P4 verification state, as shown

1	Heat detection
2	Cold detection
3	Flow detection
4	Flow rate detection
5、6、7	Temperature detection

Normal display state after P1 is normal

When the flow meter goes into sleep state without any action within 5 minutes and no display

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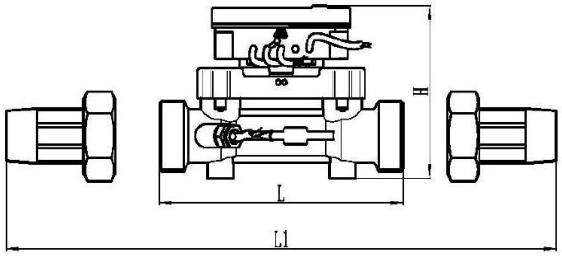
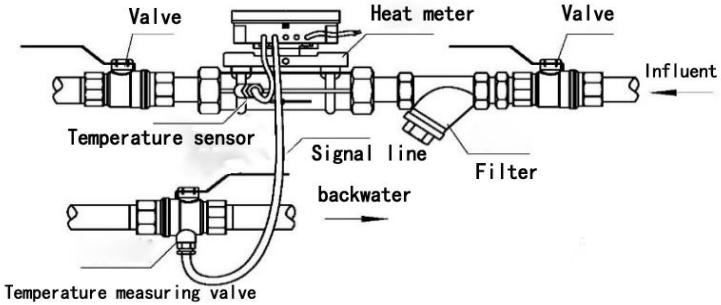
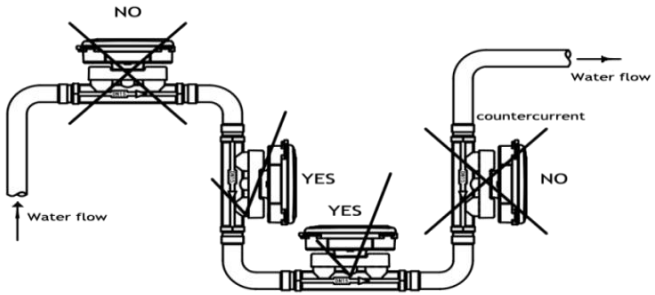


Ⅴ.Installation Diagram





Ⅲ. Normal Display

Ⅶ. Daily maintenance

Caliber (mm)	DN15	DN20	DN25	DN32	DN40
L(mm)	110	130	160	180	200
L1(mm)	205	235	281	305	330
W(mm)	125	125	125	125	125
H(mm)	86	86	89	100	120
Pipe thread connection	$R\frac{1}{2}$	$R\frac{3}{4}$	R1	$R1\frac{1}{4}$	$R1\frac{1}{2}$
Meter thread	$G\frac{3}{4}B$	G1B	$G1\frac{1}{4}B$	$G1\frac{1}{2}B$	G2B

1. Regularly patrol inspection should be conducted to check the operating status and to see if the voltage of the battery after the flow meter is installed.

2. When the flow is significantly reduced to affect heating, the filter should be drained and cleaned;

3. Specialized person should be resorted to have the battery changed when the flow meter operates more than 8 years or less than 8 years but the monitor shows unclear datas or the voltage indicates “V”, in case affecting the normal performance of the meter.

Common correct and wrong installation modes

Ⅵ.Installation

Installation positions of all parts of the flow meter(inc.the parts of flow sensor, temperature sensor and calculator) should avoid being approached by sun light, flooding, freezing, chemicals and electromagnetic pollutions, and should facilitates dismounting and metering.

Installation of ultrasonic heat meter

1) Before installation should thoroughly clean the system piping,and clear the sand and other debris, avoid water meter failure;

2) Body level or vertical installation, Building water meter installation should be less than 0.8m from the ground;

3) Water flow direction should be consistent with the direction of the arrow marked on the meter body;

4) Before and after the pipe diameter to be consistent with the body diameter

5) When installing the water meter, should be reserved length of DN*10 in front of the water meter. Or should be reserved the length of DN*8 behind the water meter. (DN is the diameter of the heat meter);

6) After installation, the meter body should be connected to the nut and pipe; and should put the lead seal between the flow sensor and resistance.

2.Temperature sensor installation

1) The temperature sensor should be installed in the meter body temperature measuring hole, and put the lead seal

2) The temperature sensor circuit can't to be changed. Temperature sensors with red labels should be installed on the inlet pipe and the temperature sensor with blue label should be installed on the return pipe.

4. When the signal status (display 12th screen of the inquiry status) shows "d0000408", the flow collection is abnormal or not full. The display "d0000814" indicates abnormal temperature collection.

Ⅷ.Transport & Storage

1) Transport: Meters should avoid being approached by rain,frost,fog after the encasement,,and should be handled as per"This side up"and avoid being damaged by extrusion,collision,etc.Transport conditions as per the standard of JB/T9329.

2) Storage: The product should be at least 30cm up away from the ground,no less than 1m away from the walls,no less than 2m away from the heating equipments.The ambient temperature 5℃～55℃, relative humidity less than 80%.The warehouse should be acid-free, base-free, inflammable -free toxic chemicals-free and other mordant gas and objects.Aviod being exposed to direct sun light and strong electromagnetic interference.

Ⅸ.Warranty

Two year free maintenance service offered with the whole flow meter since the delivery date. Lifetime maintenance, however, damage caused by the following operations excluded in the warranty:

1. The seal marks of the flow meter parts is opened or damaged
2. Parts of the flow meter are humanly damaged
3. Parts of the flow meter are approached by sun light, flooding, freezing and chemical pollutions
4. Debris and impurities not eliminated in the pipeline, which causes damage to the flow sensor
5. Cable of the temperature sensor being pulled apart, or the monitor is excessively rotated, causing the cable of the temperature sensor being pulled apart.
6. Damages and faults due to choosing the inappropriate product model N

Standards and certifications:
Executive standard GB/T 778.1~3-2007。
JJG162-2009

GB/T19001-2008 / ISO9001：2008
GB/T24001-2004 / ISO9001：2004
GB/T28001-2011 / OHSAS8001：2007。

Please follow the instructions carefully.

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