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

Ultrasonic Heat Meter (DN50-300)

-Operating Instruction

CATALOGUE

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.

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

Ⅱ.Technical Parameters

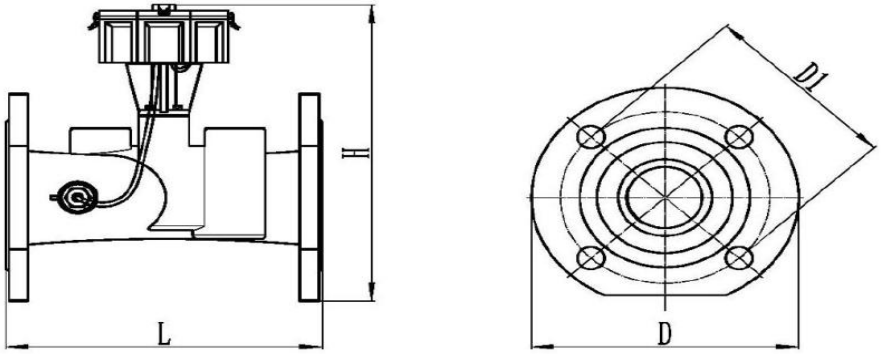
Nominal diameter	50	65	80	100	125	150	200	250	300
Max flow Qs(m^3/h)	30	50	80	120	200	300	500	800	1200
Nominal flow Qp(m^3/h)	15	25	40	60	100	150	250	400	600
Transitional flow Qt(m^3/h)	1.5	2.5	4	6	10	15	25	40	60
Min flow Qi(m^3/h)	0.6	1	1.6	2.4	4	6	10	16	24
Max flow indication	9999.999 m^3								
Heat max indication	99999999kW.h								
Accuracy class	Class B								
Pressure loss	≤0.025 Mpa								
Max working pressure	1.6 Mpa								
Temp difference range	(3~75)K								
Temperature range	(4~95)℃								
Resolution temperature	0.01℃								
Environmental category	Class A								
Battery life	⩾8years								
Temperature sensor	Pt1000								
Display	LCD, 8 digits + additional characters								
Interface	Optical/RS 485/M-bus								

Ⅲ. Normal Display

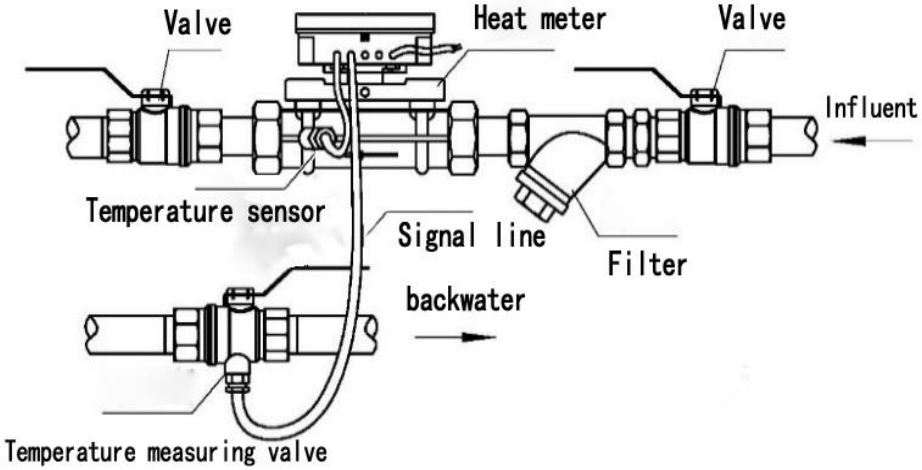
Display order	Data name	Normal Display
Normal	Dormancy	No display
1	Heat total	XX kW·h
2	Cold total	XX kW·h
3	Flow total	X. XXX m^3
4	Working time total	XXXXX h
5	Inlet temperature	XX. XX ℃
6	output temperature	XX. XX ℃
7	Temperature difference	X. XX K
8	Current date	XX XX XX
9	Instantaneous flow	XX.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

Ⅳ.Outline Dimension

Caliber (mm)	DN50	DN65	DN80	DN100	DN125	DN150	DN200	DN250	DN300
L(mm)	200	200	225	250	250	300	355	450	500
B(mm)	135	150	190	200	245	270	320	405	460
Flange connection diameter D(mm)	135	150	190	200	245	270	320	405	460
Bolt circle diameter D1(mm)	125	145	160	180	210	240	295	355	410
Connection thread n--M	4—M16	4—M16	8—M16	8—M16	8—M16	8—M20	12—M20	12-M24	12-M24



Ⅴ.Installation Diagram



Ⅶ. Daily maintenance

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.
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.

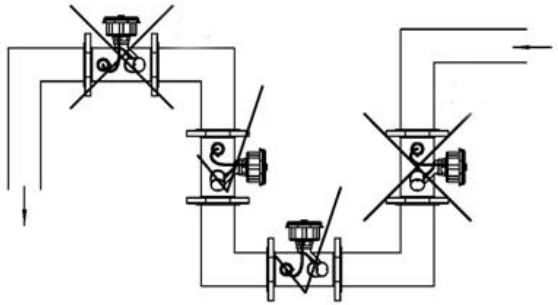
2) Storage: The product should be at least 30cm up away from the ground,no less than 1m away from the walls,no less than 2m away from the heating equipments.The ambient temperature 5℃～55℃, relative humidity less than 80%.The warehouse should be acid-free, base-free, inflammable -free toxic chemicals-free 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

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.

Integrity and Win-win

Innovation Excellence

PA 2014F013-32

CMC No.00000634-2

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.

Do not charge, short-circuit, modify, burn or violently impact the battery.