



Ultrasonic water meter



Important tips

Before installing, please read this manual carefully. This manual is mainly aimed at the trained professional staff. Therefore, it does not include the basic installation steps. If there is any change in the product model and appearance, please refer to the actual product. This specification applies equally to the case without affecting the function of the product. For details of the change, please contact the company.

- This product is a precision measuring instrument, strict test before leaving factory, please operate by professional personnel;
- If the product does not operate normally or in need of repair, please contact our company or through our authorized dealers;
- This product is a precision measuring instrument, not be dropped or hit it;
- Please do not change any of the length of the cable, otherwise it will affect the performance of the product.



Introduction

- The low starting flow, minimum flow rate is lower than the 1/3 of the traditional water meter;
- Bi-directional flow measurement;
- The water temperature detection, temperature alarm;
- No moving parts, no wear, can be long-term and stable operation;
- The power supply of water meter is ensured by a 3.6V replaceable lithium battery;
- Alarm for abnormal water use;
- Be installed at any angle, the measurement accuracy is not affected, no air measuring;
- Ultrasonic signal quality detection;
- Magnetic induction button;
- The overall IP68 design, long-term immersion in the work;
- To support M-Bus, RS485, Infrared, Wireless communication interface etc;
- Be compatible with EN13757 and Modbus RTU communication protocol;
- The water meter is required in accordance with drinking water standards;
- LCD screen can be changed by touching the magnetic switch;
- Pressure sensor is optional. This product can be built-in pressure sensor, used to monitor pipe pressure.



Groundbreaking Performance

Precision Class		Class 2
Range ratio (Q3 : Q1)	Class 2	400:1(100:1,160:1,250:1,500:1,800:1 optional)
Maximum flow reading (m ³)	DN50-DN100	9999999.99999
	DN125-DN1000	99999999.99999
Maximum working pressure		1.0MPa (1.6MPa optional)
Temperature grade		T50 (T30 optional)
Upstream flow field sensitivity level		U3
Downstream flow field sensitivity level		D0
Environmental Protection		IP68(the protection level is IP65 when the dual power supply is supplied)
Power Source		3.6V Li-battery(24VDC optional)
Battery life		See panel
Ambient operation temp		See panel
Electromagnetic environment level		Class E2 (class E1 optional)
Hot (cold) carrier		Water need to be filled with pipes
Installation method		Arbitrary angle
Data Logger		Volumes :480 Daily data;36 Monthly data;16 Yearly data
* remark		Battery must be in normal ambient temperature conditions also depends on the data transmission frequency and correct meter battery installation (positive electrode on the top)



Outputs

Standard interface	Infrared、M-Bus、RS485
Analog Output	4~20mA:The Analog Output shows the currently measured flow rate
Wireless interface	wM-Bus: T1 868MHz
	LoRa:470MHz
	NB-IoT
Digital (pulse) Output	OC:Volume



Flow Performance Data (Customizable)

◆ Class 2(400:1)

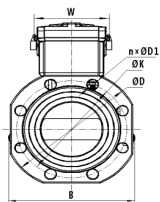
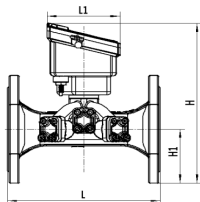
Nominal diameter DN(mm)	50	65	80	100	125	150
Overload flow rate Q4 (m ³ /h)	31.25	50	78.75	125	200	312.5
Permanent flow rate Q3 (m ³ /h)	25	40	63	100	160	250
Transitional flow rate Q2 (m ³ /h)	0.1	0.16	0.252	0.4	0.64	1
Minimum flow rate Q1 (m ³ /h)	0.0625	0.1	0.1575	0.25	0.4	0.625
Pressure loss grade	25	25	25	25	25	25
Nominal diameter DN(mm)	200	250	300	350	400	500
Maximum flow Q4 (m ³ /h)	500	787.5	1250	1250	2000	3125
Common flow Q3 (m ³ /h)	400	630	1000	1000	1600	2500
Boundary flux Q2 (m ³ /h)	1.6	2.52	4	4	6.4	10
Minimum flow Q1 (m ³ /h)	1	1.575	2.5	2.5	4	6.25
Pressure loss grade	25	25	25	10	10	10
Nominal diameter DN(mm)	600					
Maximum flow Q4 (m ³ /h)	5000					
Common flow Q3 (m ³ /h)	4000					
Boundary flux Q2 (m ³ /h)	16					
Minimum flow Q1 (m ³ /h)	10					
Pressure loss grade	10					



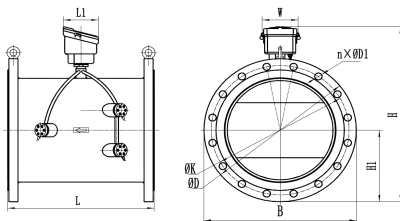
Dimension

pressure grade	DN (mm)	Outline size (mm)								
		L	L1	H	H1	W	B	ΦD	ΦK	n×ΦD1
PN10 /PN16	50	200	120	240	65	123	155	165	125	4×Φ18
	65	200	120	255	70	123	170	185	145	4×Φ18
	80	225	120	280	90	123	185	200	160	8×Φ18
	100	250	120	300	100	123	205	220	180	8×Φ18
	125	250	120	380	125	123	250	250	210	8×Φ18
	150	300	120	325	130	123	260	285	240	8×Φ22
PN10	200	350	120	470	170	123	350	340	295	8×Φ22
	250	450	120	525	198	123	450	395	350	12×Φ22
	300	500	120	575	223	123	500	445	400	12×Φ22
	350	500	120	635	253	123	500	505	460	16×Φ22
	400	600	120	690	283	123	600	565	515	16×Φ26
	450	600	120	750	335	123	600	615	565	20×Φ26
	500	600	120	790	335	123	600	670	620	20×Φ26
	600	800	120	895	390	123	800	780	725	20×Φ30
PN16	200	350	120	470	170	123	350	340	295	12×Φ22
	250	450	120	530	203	123	450	405	355	12×Φ26
	300	500	120	580	230	123	500	460	410	12×Φ26
	350	500	120	640	260	123	500	520	470	16×Φ26
	400	600	120	695	290	123	600	580	525	16×Φ30
	450	600	120	737	358	123	600	640	585	20×Φ30
	500	600	120	815	358	123	600	715	650	20×Φ33
	600	800	120	925	420	123	800	840	770	20×Φ36

DN50- DN150(不含 DN125)



DN125-DN600(不含 DN150)



Installation and connection requirements

Install Important Tips

- Pay attention to the seal to prevent leakage;
- To pay attention to the instrument's direction must be consistent with the actual flow direction;
- Note not let the gasket protruding into the pipe after the installation;
- The instrument is installed in the open pipe valve, pay particular attention not to form a negative pressure in the pipeline gauge installation site, so as to avoid damage to the instrument;
- The flange surface must clean up, and ensure no sealing effects of the damage;
- the flange connection hole of the related parts is connected to lined up properly;
- The seal shall not be damaged before and after the installation, when installing, ensure that the center and the center of the pipeline lined up properly.

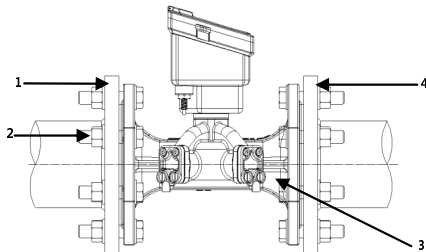
installation and connection requirements

- When install water meter in horizontal position, do not install in the highest position, avoid bubble gathers;
Straight pipe requirement in horizontal position: $R \leq 800$ upstream 10 and downstream 5;
 $R \leq 500$ upstream 3 and downstream 0;
- When install water meter in vertical position, water should flow from bottom to up.
Straight pipe requirement in vertical position: $R \leq 800$ upstream 10 and downstream 5;
 $R \leq 500$ upstream 10 and downstream 5.
- All the water meter ex-factory will undergo strict inspection, maintenance, replacement of parts; calibration and maintenance are required by qualified personnel to carry out, if you need more technical support, please contact us;
- To be in strict accordance with the professional design installation, it is strictly prohibited to move;
- In order to ensure the accuracy of the instrument, signal cable length do not change;
- The water seal can not be damaged, otherwise no warranty;
- before the installation of instrument, it must ensure the circulation line has been cleaned to prevent stones and other debris in the pipeline;
- The water meter before and after the pipe recommended to install valves, to facilitate future maintenance;
- The replacement of the battery must be operated by professional personnel.

Instrument installation position

To install upward in the liquid (or oblique) vertical pipe flow, followed by the horizontal line, try to avoid the liquid down (or oblique) flow pipe, to prevent liquid dissatisfaction pipe.

Installation steps



1 upper end flange 2 bolt connection assembly 3 water meter body

4 downstream end flange

- Each place a seal on The upper and lower flanges in the pipeline;
- According to the flow direction of flow meter and pipe, install the water meter on the pipe;
- through a bolt of The connecting component, connect The water meter body flange and pipe flange. Adjust the position of the seal to ensure that the sealing gasket is aligned with the flange. Tighten the bolt assembly, install the pipe body and firm.



Description of the state of the content of hazardous substances in products

Component name	Toxic or hazardous substances or elements				
	Lead Pb	Mercury Hg	Cadmium Cd	Six valence chromium Cr (VI)	Multi bromine PBB
complete machine	×	○	○	○	○
Component name	Two phenyl ether PBDEs	Diisobutyl phthalate DIBP	Phthalate DEHP	Dibutyl phthalate DBP	Benzyl phthalate BBP
complete machine	○	○	○	○	○

○ : It indicates that the content of the toxic and hazardous substances in all homogeneous materials of this part shall not exceed the limits set by the DIRECTIVE 2011/65/EU standard.

× : It indicates that the content of the toxic and hazardous substances in a homogeneous material in at least one part of the component exceeds the requirements specified in the DIRECTIVE 2011/65/EU standard.

Note :

- 1.This table shows that our products don't contain these substances.
- 2.The explanatory power of part definition in this table belongs to our company.
3. According to the EU waste electrical and electronic recycling directive 2002/96/EC (WEEE),if you need to scrap the product, you can return to my company, by my company to do scrap processing, but also can be returned to the company to have the quality of recycling. Not allowed to be discarded with other living garbage.





Warranty commitment

(1) Free warranty: since the day you buy (in a formal purchase invoice date), to ensure that the seal is intact, the product quality problems as a result of the fault or not normal, the company responsible for the repair or replacement free of charge, but do not bear the cost of door-to-door service.

(2) Exempt from warranty obligations: in order to protect the legitimate rights and interests of the protection, to avoid unnecessary losses, the following conditions caused by the failure, abnormal work or damage, our company does not assume warranty obligations, the need to pay maintenance.

- a. When the product is beyond the warranty period.
- b. Product damage due to the use of errors, self disassembly, improper maintenance and other reasons.
- c. To open the seal products.
- d. Accident factors (handling, collision, etc.) or man-made damage marks.
- e. Other such as natural disasters, such as force majeure (such as earthquake, fire, etc.) caused by damage.


(3) After sales service: Failure in normal use, please contact the supplier or the company's after-sales service department, in order to provide you with services in a timely manner.

(4) About battery: See panel for battery life, it is recommended purchasing and replacing before the expiration. In order to avoid the impact of the battery on the measurement accuracy of the product.

Important statement: the company's products in the design has the greatest ability to ensure the reliability of the measurement data, but can not guarantee that all products are not a problem. the loss of products measurement data caused by fault or other causes, the company will try our best to recover, but do not take responsibility for the measurement of data loss caused by the loss of users on a regular basis measurement data read and save.



Liquid crystal display

- There are two modes of display mode: One is the standard menu display mode, the other is a high precision menu display mode;
- Switch between standard menu mode and high-precision menu mode by using the factory's meter reading software;
- Standard menu display is divided into single-screen menu display and ordinary menu display;
- With the magnetic switch can switch the same menu of the display items;
- Magnetic switch to use: with a magnetic pen touch the product LCD screen  icon position.



Standard menu

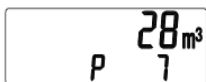
Standard menu-Single screen display



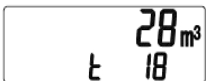
Positive volume flow (Default Display)



Flow rate

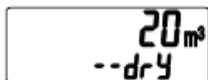


Pipe pressure (Unit : kPa, only product with pressure variable can display)

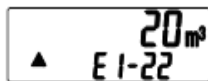


Water temperature (Unit : °C)

If the meter failed, the fractional part of the cumulative volume show alarm symbols. when multiple faults ,decimal part auto cycle display.

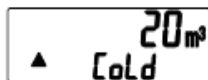


Empty pipe instruction



Transducer alarm

Channel (1,2,3,4)



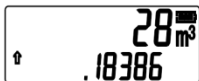
Low water temperature (Alarm below 4 °C)



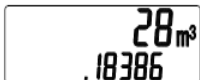
Overload flow rate

Standard menu-Normal display

High precision menu



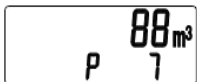
Positive volume flow (Default Display)



Negative volume flow



Flow rate



Pipe pressure (Unit : kPa, only product with pressure variable can display)

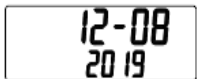


Primary address

Battery voltage

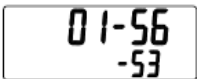


Secondary address



Month - Day

Year



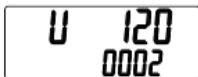
Hour - Minute

Second



Cumulative operation time

Cumulative alarm time

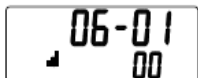


Main version number

Flow rate revised version



Flight time difference



Caliber parameters

Transducer signal strength



Display test

Packing list

Name	Model	Number	Remarks
Ultrasonic water meter		1	*
Instructions		1	

* Expressed as the main component

