

Ultrasonic water Meter

DN15-DN40 Instructions



1.2 Technical parameters and characteristics

1.2.1 Technical Specifications

Precision Class	class 2
Standards	OIML R49, EN 14154, ISO4064
Volume Display Options	1. Net (Forward less reverse) 2. Forward only 3. Forward & reverse alternating
Temperature grade	T50 (T30 optional)
Pressure loss grade	Δp40
Power Source	3.6V Li-battery: 10* years Or additional power supply 24VDC
Environmental Protection	IP68 (Additional 24VDC power supply, IP65)
Ambient operation temp	Class C (class B, class I optional)
Maximum working pressure	1.6MPa
Range ratio (q _{max} : q _{min})	250:1 (80:1、100:1、160:1、400:1 500:1 optional)
Data Logger	Volumes: 480 Daily data;36 Monthly data;16 Yearly data Alarms data: 32
Maximum flow reading (m³)	Forward: 99999.99999; reverse:-9999.99999
Electromagnetic environment level	Class E1(class E2 optional)
* remark	Battery must be in normal amibent temperature conditions, also depends on the data transmission frequency and correct meter battery installation (positive electrode on the top)

1.2.2 Outputs

Standard interface	Infra-red、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
	GPRS
Digital (pulse) Output	OC: Volume

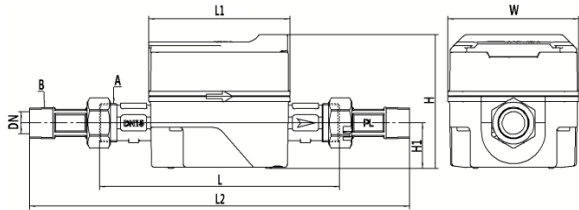
1.2.3 Flow Rate Performance Data

Nominal diameter DN(mm)	15	20	25	32	40
Maximum flow Q ₄ (m³/h)	3.125	5	7.875	12.5	20
Common flow Q ₃ (m³/h)	2.5	4.0	6.3	10.0	16.0
Boundary flux Q ₂ (m³/h)	0.016	0.026	0.04	0.064	0.102
Minimum flow Q ₁ (m³/h)	0.01	0.016	0.025	0.04	0.064
Pressure loss grade Δp	40	40	40	40	40

1.2.4 Dimensions


Nominal diameter	15	20	25	32	40
L(mm)	165/110 ★	190/130/195 ★	260/160/225 ★	260/180/230 ★	300/200/245 ★
L1(mm)	97	97	97	97	97
L2(mm)	259/204	294/234/299	380/280/345	380/300/350	428/328/373
H(mm)	91	91	91	128	139
H1(mm)	31	28	25	29	36
W(mm)	90	90	90	90	90
Meter screw thread A (inch)	G ³ / ₄ B	G1B	G1 ¹ / ₄ B	G1 ¹ / ₂ B	G2B
Threaded for union B (inch)	R ¹ / ₂	R ³ / ₄	R1	R1 ¹ / ₄	R1 ¹ / ₂

Note: ★ for the default length



2 LCD

2.1 Liquid crystal display interface

- 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 

Standard menu

Standard menu-Normal display

	Positive cumulative flow (Default Display)
	Reverse cumulative flow (Not displayed by default. displayed if the metering mode is set to 'positive, counter metric'.
	Water temperature Forward instantaneous flow
	Display test

Standard menu-Loop display

	Loop display every 10 seconds

Standard menu-Single screen display

	Default Display. without water flow: display cumulative volume fractional part ; with water flow: display instantaneous flow
	instantaneous flow
	Water temperature: (Unit: °C)

Fault alarm menu

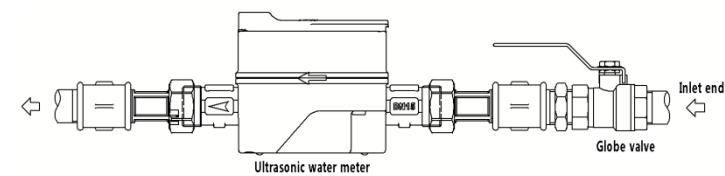
	Empty pipe instruction
	Transducer fault
	Forward water 2 :Low amplitude. Reverse water 2:Low amplitude.
	Low water temperature (Alarm below 4 °C)
	Battery low

High precision menu

	Positive cumulative flow
	Negative cumulative flow
	Water temperature Instantaneous flow
	Primary address Battery voltage
	Secondary address Battery voltage
	Real-time date Month - Day Real-time date Year
	Real-time clock Hours - Minutes Real-time clock Second
	Cumulative operation time Accumulated down time
	Main Version number Flow rate revised version
	Sailing reverse water time difference
	Caliber parameters Transducer signal strength
	Display test

3 Guide for typical installation and maintenance

3.1 Schematic diagram of typical installation



3.2 Installation notes

For safety reasons, please read the following points carefully:

- When install water meter in horizontal position, do not install in the highest position, avoid bubble gathers.

Straight pipe requirement in horizontal position: R ≤ 500 upstream 10 and downstream 5,

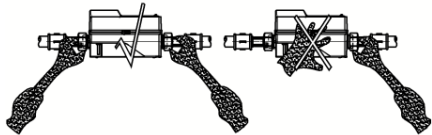
R ≤ 250 upstream 0 and downstream 0
- When install water meter in vertical position, water should flow from bottom to up.

Straight pipe requirement in vertical position: R ≤ 500 upstream 10 and downstream 5,

R ≤ 250 upstream 0 and downstream 0
- The device is designed for use under the specified specifications. Improper use involves risk and the possibility of damage. Failure to comply with the specified parameters will void the warranty.
- For installations in rooms with flammable and / or explosive substances, the applicable protective measures must be followed.
- Since sharp edges signify a risk of injury, work gloves must be worn.
- Do not install the device in places where it is exposed to toxic, irritating or corrosive gases as well as liquids and dust.
- Make sure that the device is not installed in hazardous locations.
- Installation and removal of the device may be performed only by qualified personnel.
- Installation and removal of the device may only be carried out without pressure
- The required lightning protection measures must be taken into account.
- The bus must adopt multi strand shielded twisted pair wire, diameter is not less than 0.75 mm².
- It is prohibited to install signal lines and power lines in the same slot, in order to avoid signal interference.

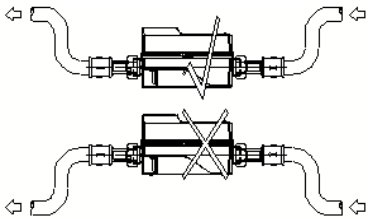
3.3 Several common error installation methods

- When installation, please screw the pipe nut with a wrench. Do not use hand holding the plastic box body of calculator and then use the wrench to tighten the nut, because it may cause damage.

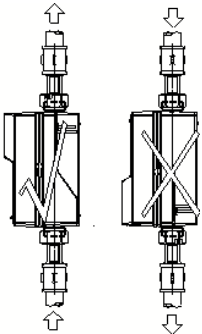


- At a vertical installation scenario the heat meter needs to be installed on the flow

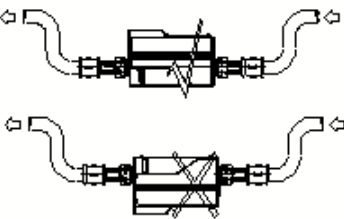
upward straight pipe. It will affect the measurement accuracy, even lead to immeasurability, if installed on the flow downward pipeline. Because the water cannot fill the pipe completely



- Please install the flow meter in the lowest position while installed in the "U" type. Because it is likely to gather the air in the pipe at the highest point, causing immeasurability or inaccurate measurement

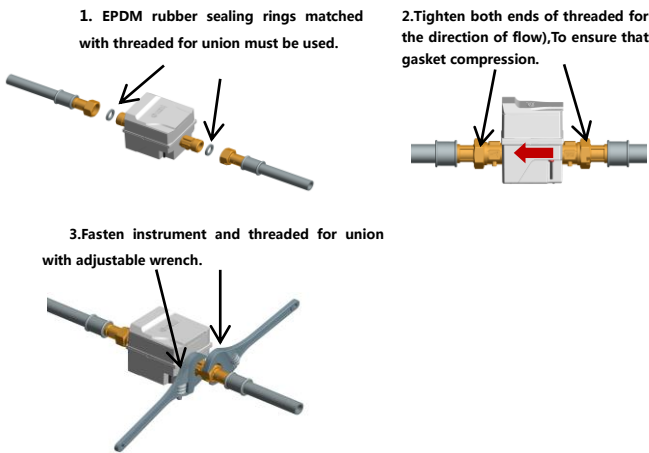


- When the water meter is horizontally installed, Because LCD face down installation will affect the battery life



3.4 Installation steps

- To cut off the installation instrument place of water supply pipe, Set aside installation position of meter and threaded for union.
- Keep the threaded for union screwed to the water supply pipe opening.
- Align the instrument with the connection accessories ; use Matching seal ring between instrument and threaded for union , As shown in figure:



4 Descriptions of the state of hazardous substances content 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	○	○	○	○	○
<div>○ : 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.</div> <div>× : 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.</div> <div>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</div> <div></div>					

5 Warranty commitment

- (1) Free warranty: If the product broke down or didn’ t work normally, we are in charge of the gratis repair or replacement in the premise of intact seal, from the date of your purchase (the formal purchase invoice date). But we won’ t undertake related charges of the door to door service.
 - (2) Exempt from warranty obligations: in order to protect your legitimate rights and interests, and avoid unnecessary losses, please notice that our company does not assume warranty obligations to the failure, abnormal operation or damage caused by the following conditions. It needs to pay maintenance cost.
 - a. When the product is beyond the warranty period ;
 - b. Product damage due to the error use, self dismounting, improper maintenance and other reasons ;
 - c. Open the product seal privately ;
 - d. Accident factors (transport, collision, etc.) or man-made damage ;
 - e. Other damage caused by force majeure such as natural disasters (earthquake, fire etc.) and so on.
 - (3) After sales service: if the product goes wrong when normal use , please contact the supplier or the sales department, in order to provide you with immediate services.
 - (4) About battery: the normal depletion cycle of the battery is 10 years, it is recommended to purchase and replace it before the expiration, in order to avoid inaccurate measurement due to battery under voltage.
- Important statement: We have tried our best to guarantee the product data reliability in design, but we can’ t guarantee that there is no problem in all products. We will try to recover the loss data for the customers, which caused by the product breakdown and other reasons. But we won’ t undertake the losses caused by the measurement data loss. Please read and save measurement data regularly.

Packing list

Name	Model	Number	Remarks
Ultrasonic water meter		1	*
Instructions		1	

*Expressed as the main component