

VSAN

Ultrasonic water meter



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1. General Description

The ultrasonic water meter used the advanced ultrasonic measurement technology with high accuracy. It combined the most advanced communication technology to help Water Utilities in revenue protection. Integrated AMR function offers the benefits of easy way to catch the meters reading data within a mobile or fixed collection system. It's has below feature:

- It's measurement is accurate and reliable with no moving parts;
- Wide range ratio and low starting flow;
- With electronic lead sealing function;
- With intelligent power-saving design, the meter will turn on the power-saving mode in the static state of fluid or empty pipe;
- Storage of 24-month data;
- Optional IrDA, RS485, MBUS, NB-OT, LORAWAN, MODBUS, Pulse output, easy to connect with other equipment;
- According to different customer needs ,There are a variety of unit systems, including m³, GAL, ft³;
- Built-in lithium battery, more than 6 years battery life;
- optional external 5-24V power supply;

2. Technical Specification

2.1 Flow Sensor

The flow sensor used to measure the velocity of the pipe flow by using the principle of ultrasound. It can measure the TOF time of the up direction path and down direction path, then calculate the velocity of the pipe flow. It's used two transducers.

Manufacturer	VSAN
Accuracy Class	Class 2
Standard Compliance	GB/T778-2007, CJ-T188-2018, ISO4064B, EN1434, MODBUS
Communication interface	Infrared, RS485(optional), M-BUS(optional), NB-IOT(optional), LORA-WAN(optional), Pulse output(optional), GPRS(optional)
Temperature	T/30/50
Power supply	Battery DC 3.6V lithium(6years), 10years lifetime(optional), DC9-24V(optional)

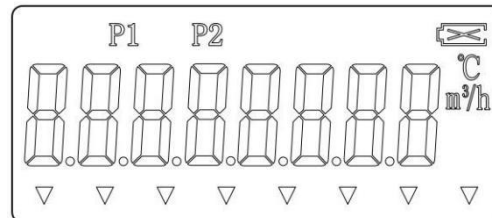
Protection Class	IP68
Max Working Pressure	1.6 Mpa
Working Environmental temperature	-15°C ~ + 70°C
Humidity	<100% (RH)
EMC Class	E1
Power Consumption	Static < 15μA, Average < 50μA
Data Storage	24 Month
Body	Brass
Cover	PC

Manufacturer		VSAN							
Flow Parameter									
Meter Type	DN (mm)	Flow rate(m3/h)				Dimensions(mm)			Thread
VSAN-UWM		Q1	Q2	Q3	Q4	L	W	H	
	15	0.006	0.010	2.50	3.12	165	89	102	G3/4’
	20	0.010	0.016	4.00	5.00	195	89	105	G1’
	25	0.016	0.025	6.30	7.87	225	89	108	G1 1/4’
	32	0.025	0.040	10.0	12.5	180	89	108	G1 1/2’
	40	0.040	0.064	16.0	20.0	200	89	108	G2’
Q3/Q1				R250/R400(optional)					
Accuracy				+/- 2%					
Error Q2≤Q≤Q4				±2%(T30), ±3%(T50)					
Error Q1≤Q≤Q2				±5%					
Minimum unit				0.001m3					
Maxim capacity				999999.99m3					
Type of liquid				Water(4-50℃)					
Installation requirement				U10D5					
Mount requirement				Horizontal / Vertical					

2.2 Flow Specification

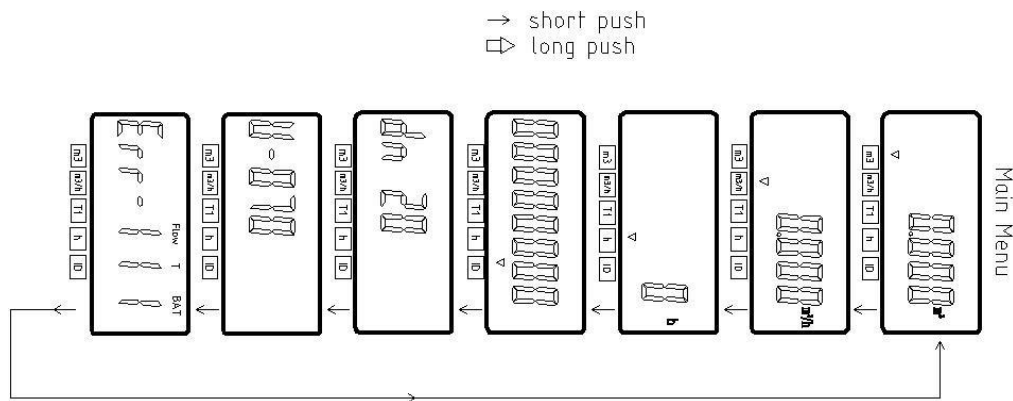
3. Menu & Display

The ultrasonic water meter equipped with a 8 digital LCD, units and information flag.

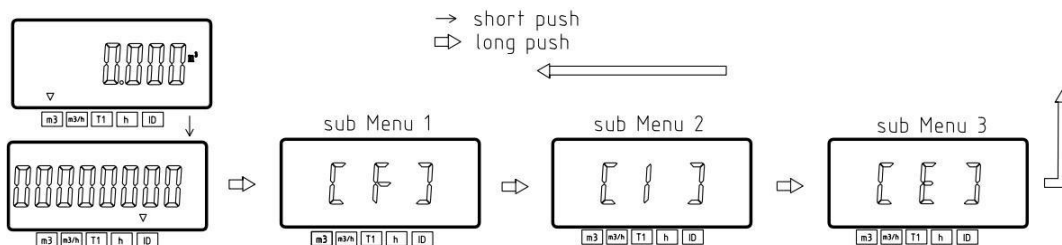


The Meter has main menu and sub menu. There are two key operation, short push and long push. When need enter sub menu, long push more than 5 seconds. When need exit from sub menu, also long push. This push operation need magnetic parts.

3.1 main menu

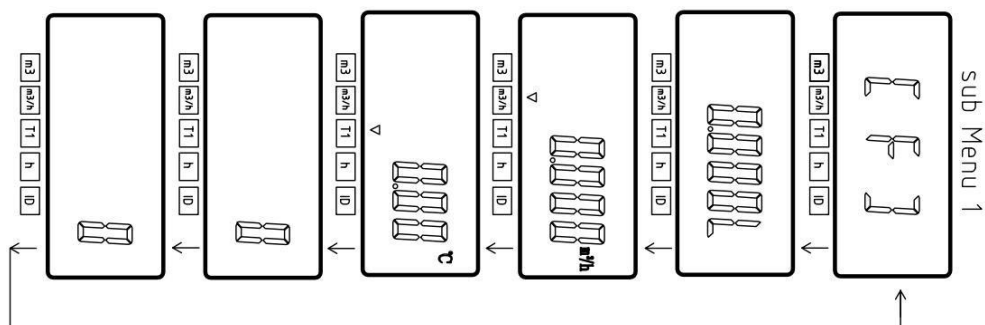


3.2 Menu loop



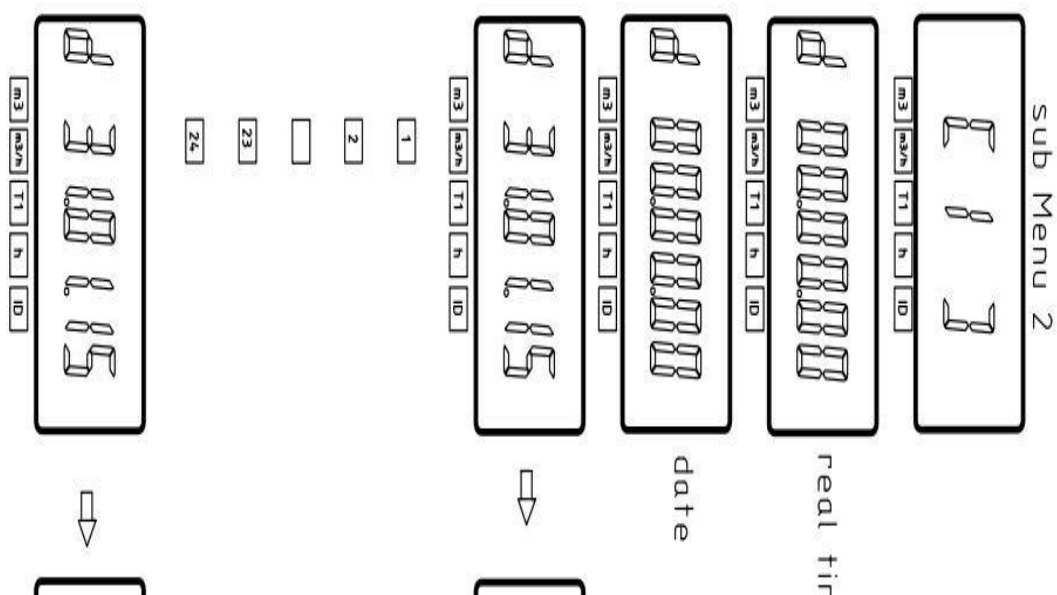
3.3 sub menu 1

This sub menu is high resolution menu.



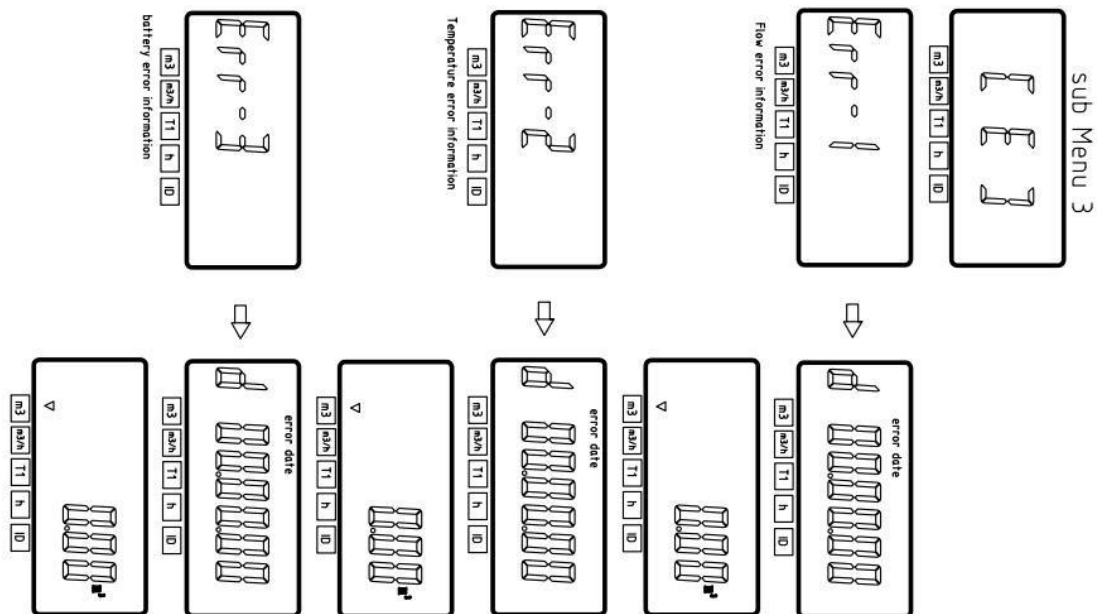
3.4 sub menu 2

This menu contained information of time and 24 month data.



3.5 sub menu 3

This sub menu contains error information. When error occurred, the accumulated volume and the date will be saved.



4. Interface & Communication

4.1 IrDA

The water meter equipped with an optical interface IrDA according to IEC62056.

4.2 M-BUS(Optional)

Voltage: 40V max.

Current: 2mA.

Addressing: primary or secondary.

Note: Cannot reading frequently! It's may use out battery power

4.3 RS485(Optional)

Cable: connected with four cable.

Voltage:5-24V.

4.4 Pulse Output (Optional)

Pulse value: 1 pulse per litre.The value of every pulse can be set.

Pulse length: 2 ms (Programmable).

Voltage: max. 24 V

Current: max. 10 mA

Pulse gap: min. 20ms

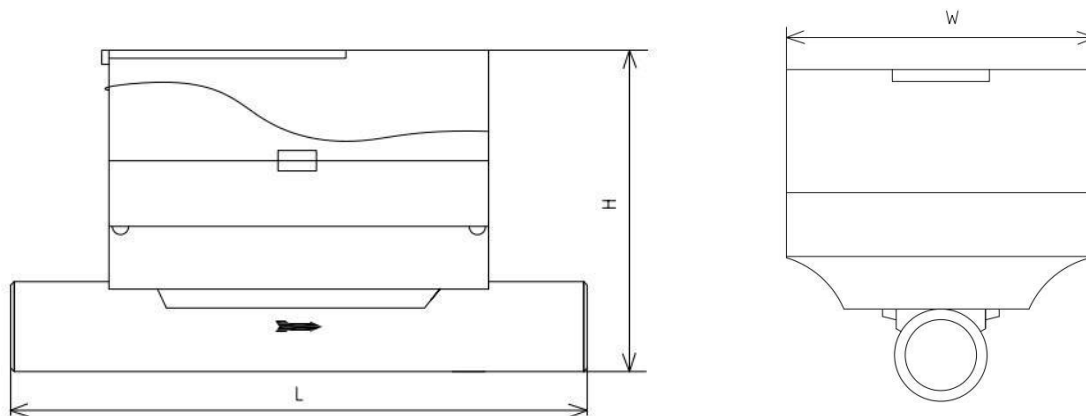
Classification OC (EN 1434-2).

4.5 LoRaWan(Optional)

Frequency Band	433MHz	868 MHz	865 MHz	915 MHz
LoRa MAC	Class A or Class C			
Net work Access Mode	OTAA or ABP			
TX Power	17dBm(max)			
Data transmission	12h			

5. Dimensions & Installation

5.1 Dimensions



Manufacturer	VSAN				
Type	L(mm)	W(mm)	H(mm)	Thread	Weight(kg)
DN15	165	89	102	G3/4'	0.65
DN20	195	89	105	G1'	0.70
DN25	225	89	108	G1 1/4'	0.82
DN32	180	89	108	G1 1/2'	0.85
DN40	200	89	108	G2'	0.91

5.2 Installation requirements

Prior to installation of the meter, the system should be flushed while a fitting piece replaces the meter. Remove the adhesive wafers from the meter inlet and outlet, and mount the meter with couplings. You must always use new gaskets in original quality. Place the meter as required. The meter can be mounted at all angles, however the display ought to be easy to read, and must be properly oriented, with regard to the flow direction, which is indicated by an arrow on the side of the meter body.

The pipe should mounted at the same level.

