

## Quotation and Technical Parameter for LoRaWAN Ultrasonic Water Meter



### PART 1, Quotation for Ultrasonic Water Meter

Product Name	Type	Material	Diameter	Unit	Qty.	Unit Price(\$)	Total Price(\$)
LoraWan Ultrasonic Water Meter	With valve	Brass	DN15	pcs	1	61.8	<b>61.8</b>
Delivery cost	to Georgia						<b>76</b>
Amount							<b>137.8</b>

## PART 2, Parameters for Ultrasonic Water Meter

### Technical Parameter

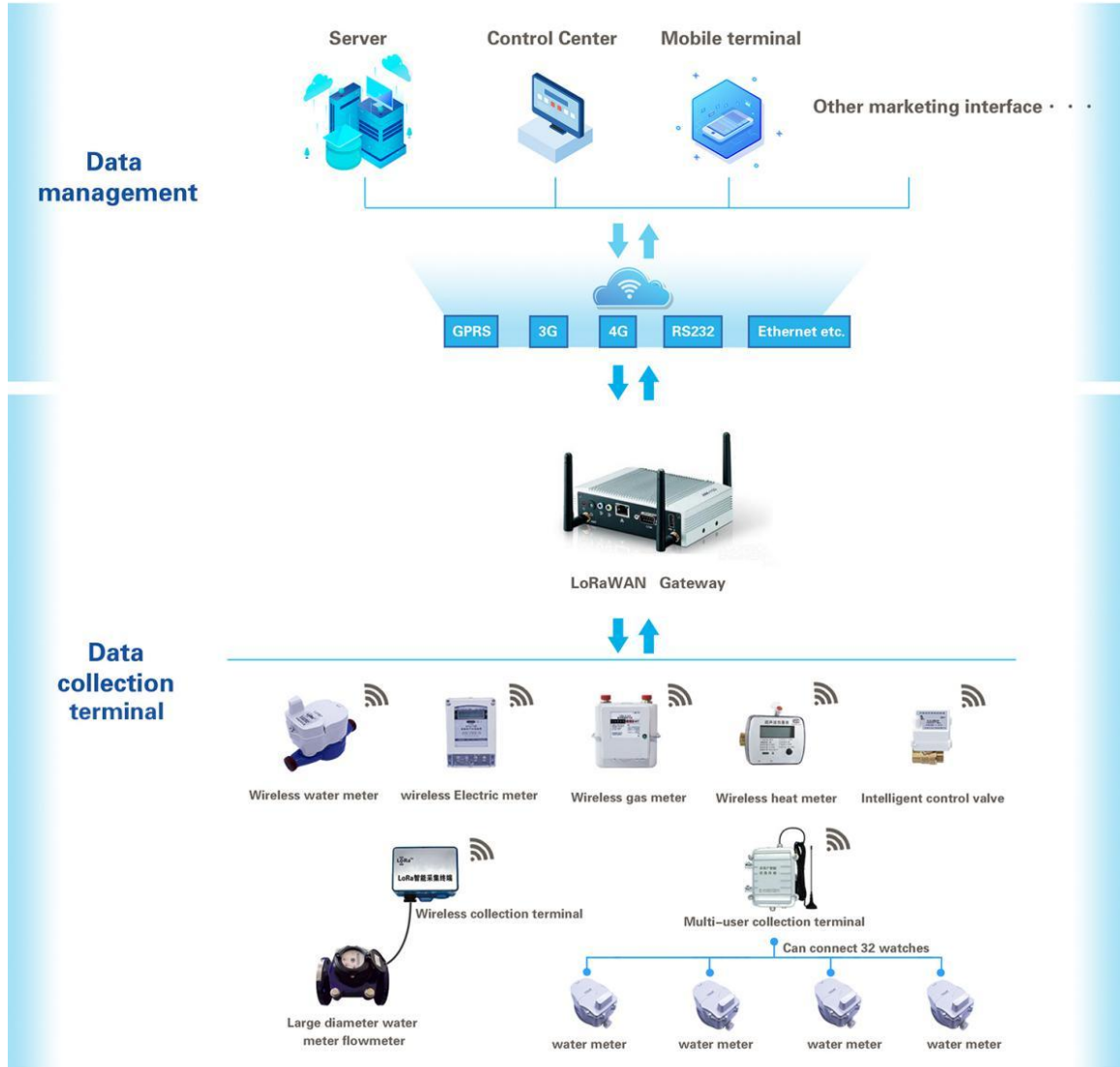
Nominal Caliber	15
Mm	
Common Flow Q3	2.5
(m <sup>3</sup> /h)	
Range Ratio (Q3/Q1)	250
Q2/Q1	1.6
Pressure rating	MAP10
Pressure loss level	△p63
Current flow resolution	0.001m3/h
Material of case	Brass
Flow Profile Sensitivity	U10/D5
Environmental Severity Rating	B grade
Electromagnetic Environmental Conditions	E1
Accuracy level	Class 2
LCD Display number	8 th
Working Temperature	-20 ~ 75 °C
Protection Class	Maximum IP68
Installation Method	Horizontal or vertical
Communication	LoraWan
Working Voltage	2.7~3.6V
Working Frequency	EU868

Transmitting Power	$\leq 23\text{dBm}$
Receiving Sensitivity	$-136 \pm 1\text{dBm}$
Communication Distance	Open area 2-5km
Quiescent Current	$5 \mu\text{A}$
Transmitting Current	$< 110\text{mA}$
Receiving Current	$< 15\text{mA}$



## PART 3, PARAMETERS FOR LoRaWAN Water Meter

### LORA WAN TRANSMISSION APPLICATION SOLUTION



### LoRaWAN Technology Introduction

LoRaWAN has the characteristics of multi-channel access, frequency switching, adaptive rate, channel management, regular sending and receiving, node access authentication and data encryption, roaming, etc. Thus it has following advantages:

**1. Good Compatibility.** The protocol on LoRaWAN and the interface of the data cloud platform are unified, different sensor nodes of different manufacturers can access the same LoRaWAN network. It is not necessary for application developers to customize all sensors, which can shorten

the development cycle and reduce the development cost.

**2. Large Network Capacity.** The LoRaWAN network has bigger data capacity and more access nodes, and strong scalability. It is beneficial for application developers to develop larger-scale applications and upgrade applications continuously.

**3. Excellent Security.** The LoRaWAN network has designed security mechanisms such as node access authentication and data encryption. These mechanisms have been reviewed by industry experts and verified by a variety of applications from various technology companies around the world. Compared with the temporary agreements of application developers, its security grade will be much more higher. It can guarantee the continued security of the application.

**4. Sustainable Expansibility.** With the evolution of the LoRaWAN network standard, it can continuously add features such as positioning, roaming, broadcasting, and multicast. That's to say, it can benefit from a common technical platform continuously.

## Functions

### 1. Sampling Measurement

It can realize a variety of sampling methods, such as reed switch, Hall and other pulse sampling methods, and also photoelectric sampling methods;

### 2. Control Valve (option)

The upstream computer can perform valve control operation on the meter through preset commands;

### 3. Close Valve When Attacked (option)

When the meter is under magnetic attack, it can upload the data frame and close the valve. After the attack disappears, it can upload the data frame and open the valve;

### 3. In Place Detection

With switch in place detection function, when the normally open contact is closed in place, the valve operation can be stopped immediately;

#### **4.Upload Regularly**

The module automatically uploads a frame of meter data every 6 hours;

#### **5.Trigger Upload**

The module is usually in the standby state, and the module can upload the real-time data for one time by triggering switch;

#### **6.Valve Failure Detection (option)**

Automatically determine whether the valve limit switch is working properly. When the limit switch fails, the backstage will be reminded of alarming.

#### **7.Infrared Communication**

Various parameters such as meter address, table data and LoRaWAN key can be set by infrared communication.

#### **8. Alarm**

The meter will upload alarm when low power ( $<2.7V$ ), pipe leakage, pipe burst, installation inverse.