AquaSens

Ultrasonic Water Meter

Battery operated ultrasonic water meter embedded LoRaWAN® technology.

Product Overview

AquaSonic is a compact wireless and battery-operated Ultrasonic Water meter for water management. Harnessing the power of ultrasonic precision and LoRaWAN connectivity, this innovative meter offers unparalleled accuracy and efficiency in water measurement.

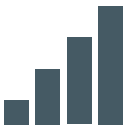
Designed to revolutionize how you manage water consumption, **AquaSonic** utilizes advanced ultrasonic technology to provide precise readings without the need for mechanical parts, ensuring longevity and reliability.

With LoRaWAN connectivity, you can effortlessly monitor water usage remotely, enabling real-time insights and enhanced control.

Say goodbye to manual meter readings and hello to seamless automation. **AquaSonic** simplifies water management, offering anti-clogging and anti-interference capabilities for consistent performance. Trust in our meter to deliver accurate readings and streamline your water management processes with ease.

Product Features

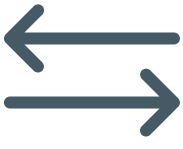
Wireless Communication through LoRaWAN ® technology



High Range link: Strong signal penetration (even with urban area or inside buildings)

Secure operation with top-down encryption

Battery Powered



Bi-directional communication for remote operation and remote valve control

Industrial grade construction for durability and longevity

Centralized Control & Monitoring through Web App

Integration with Existing Building Management System

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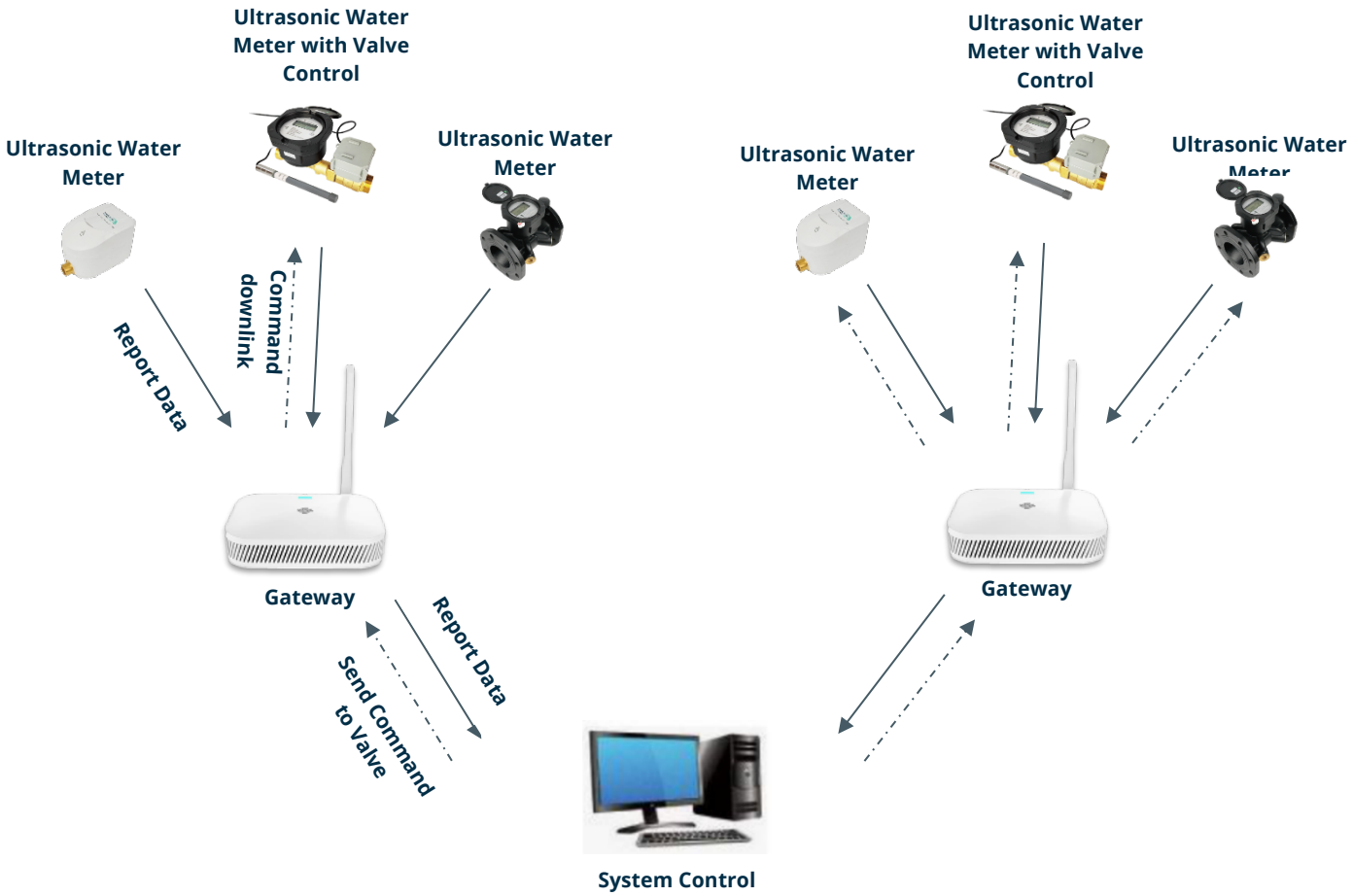
Communication Technology

The **AquaSonic** Water Meter employs cutting-edge communication technology, LoRaWAN which provides low power consumption as well as long range signal propagation to enable real-time control and monitoring. This technology supports both Class A and Class B operation, offering flexibility and precision in fluid flow measurement and control.

Notably, the Class B mode facilitates instantaneous communication between the LoRaWAN Smart valve and the remote controller, allowing for adjustments and optimal performance. This sophisticated communication approach guarantees that the valves consistently operate at peak efficiency, delivering a dependable and cost-effective solution for fluid flow control.



Our smart gateway receives near real-time data from all the valves within range, converts the raw data into an easy-to-use JSON format, and then publishes it using MQTT protocol. Data can be sent to any local or cloud MQTT broker via Ethernet, LTE (4G), or WIFI.

Specifications

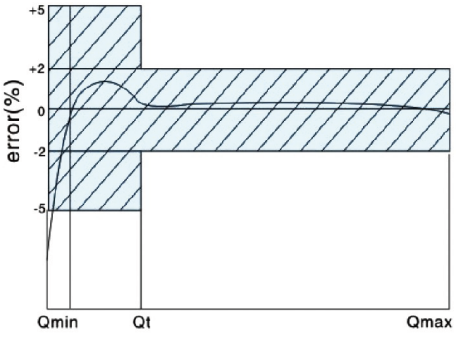
Technical	
Standard	ISO 4064
Body Material	Brass/Ductile Iron/Plastic Nylon etc.
Connection Method	Thread/Flange
Display	LCD screen
R(Q3/Q1)	R200/R250/R400/R500
Power Supply	Battery 3.6V
Lifespan of the Battery	8 years above
Protection Class	IP68
Working Temperature	Cold water T30/T50; Hot water T90
Pressure Loss	ΔP≤0 .63bar
Device Class	Class A
Working temperature	-20℃～+70℃
Working voltage	+2.5V～+3.8V
Valve Electrical Parameter	+2.5V +3.8V
Sleep current	=15uA
Dimension	42.1mm*24.8mm*3.2mm
Wireless Communication	
Technology	LoRaWAN®
Frequency	EU868 (868 Mhz) license free
Range	Max line of sight communication distance between the gateway and meter module is 15km
Security	128 AES Encryption
Antenna	Internal
Maximum output power	+21 dBm
Receiving Current	≤10mA
Receiving Sensitivity	<-136dBm
Transmitting Power	≤130mA
Data Rate	290 bps – 50Kbps
Data Format	JSON
Activation Method	OTTA (Over-The-Air-Activation)

Certifications	
Regulatory	CE
Environmental	RoHS

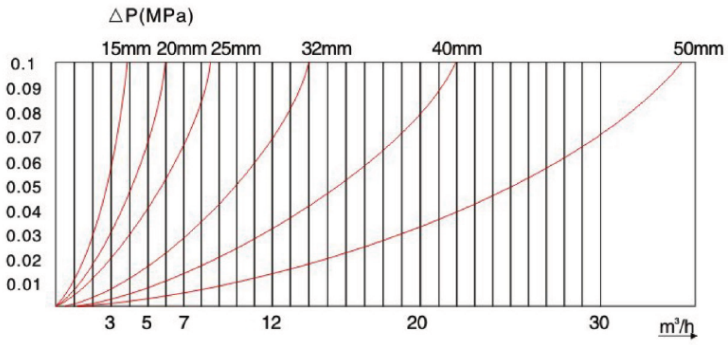
Metrology Parameters

DN	Ratio	Q1(m3/h)	Q2(m3/h)	Q3(m3/h)	Q4(m3/h)
15	R250	0.01	0.016	2.5	3.125
20	R250	0.016	0.0256	4	5
25	R250	0.0252	0.04032	6.3	7.875
30	R250	0.04	0.064	10	12.5
40	R250	0.064	0.1024	16	20
50	R250	0.16	0.256	40	48.75
65	R250	0.252	0.4032	63	76.781
80	R250	0.4	0.64	100	121.875
100	R250	0.64	1.024	160	195
125	R250	1	1.6	250	304.688
150	R250	1.6	2.56	400	487.5
200	R250	2.52	4.032	630	767.813
250	R250	4	6.4	1000	1218.75
300	R250	6.4	10.24	1600	19505

Flow error curve



Data error curve



A. Slow flow（Q1≤Q＜Q2）, Max permissible errors: ±5%

B. Water temperature≤30℃, Fast flow（Q2≤Q≤Q4,

Max permissible errors: ±2.

Water temperature＞30℃, Fast flow（Q2≤Q≤Q4,

Max permissible errors: ±3%.

Product Images