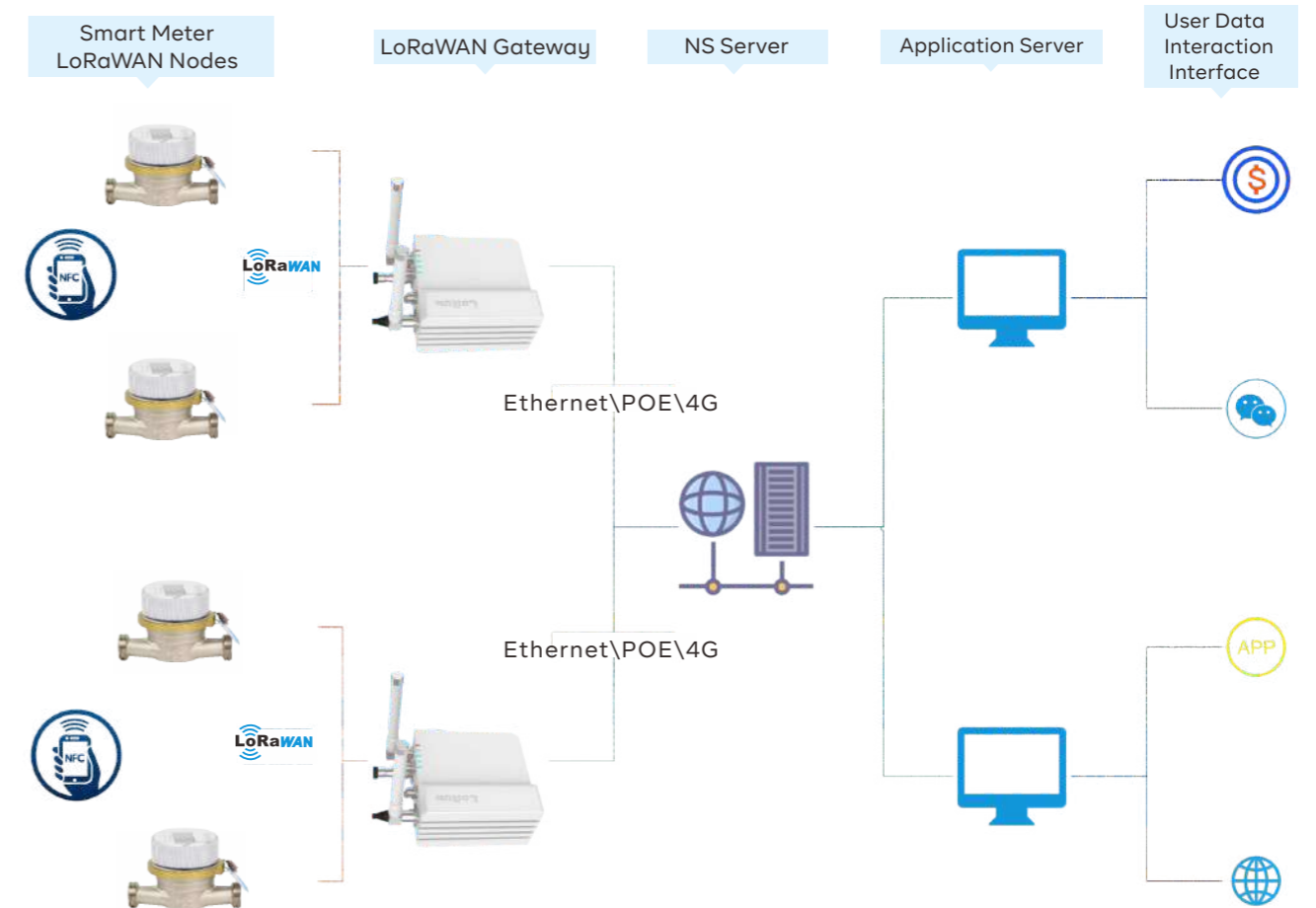# SINGLE-JET SMART WATER METER

OVERVIEW

Single jet smart water meter is based on LoRaWAN protocol network architecture, which has the advantages of low cost, long distance, strong anti-interference ability, high sensitivity and low power consumption.

With the Internet of Things, cloud computing, big data and other technologies, the massive water information will be collected, analysed and processed in a timely manner to help water supply enterprises to improve operation and management efficiency, to manage the entire production, management and service processes of the water system in a more refined and dynamic way, to achieve the internal management of the water enterprise and the external service innovation, so as to achieve intelligent management and decision-making.

Cloud computing and other new technologies are widely used, based on the LoRaWAN protocol network architecture technology of smart water will become one of the signs of the level of information technology of smart city management.

SYSTEM STRUCTURE DIAGRAM

The overall system consists of smart meter nodes, LoRaWAN gateway, NS server, application server, and user data interaction interface.

Smart Meter LoRaWAN Nodes — LoRaWAN Gateway — NS Server — Application Server — User Data Interaction Interface

Ethernet\POE\4G

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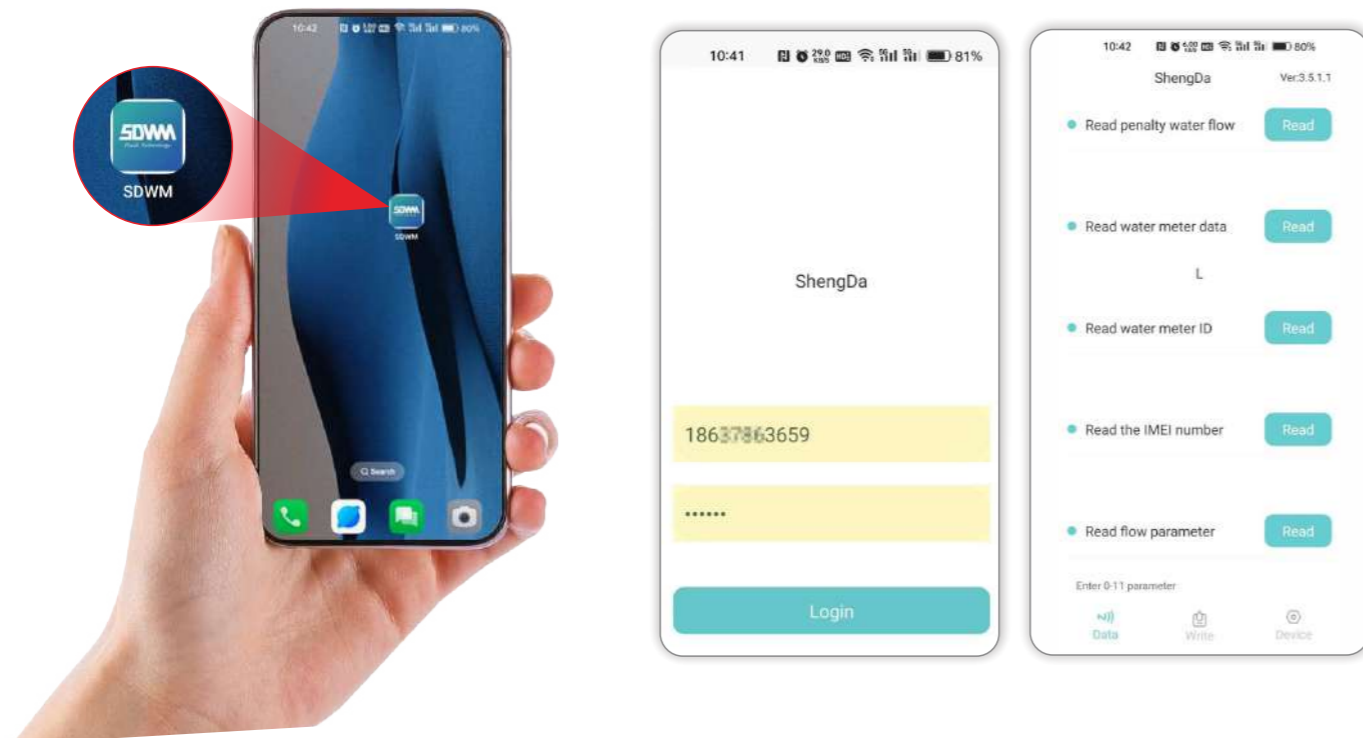
Smart Water Meter

OVERVIEW

Single-jet smart water meter is designed according to the latest scientific and technological standards, with full dry function.

MAIN PARAMETERS AND TECHNICAL REQUIREMENTS

- Electromagnetic Environment: level E1
- Environmental Class: Class B
- Shell Protection Class: IP54
- Ambient Temperature: 5℃～55℃
- Ambient Humidity: (0-93)%RH
- Water Temperature Cold Water: 0.1℃-30℃
- Pressure Class: 1.6MPa
- Pressure Loss: ≤ΔP63
- Unit: m³
- Maximum Value: 99999.9999
- Supply Voltage: 3.0V
- Display Type: LCD Display, 10 digital characters

Through the mobile phone APP with NFC function, the administrator can read, write and report data and configuration functions.

LoRaWAN Gateway

OVERVIEW

The low-power, low-cost, long-distance, wireless transmission IoT gateway based on the LoRaWAN protocol is specially designed for terminal equipment with high communication requirements, strong anti-interference ability, high sensitivity, low power consumption, and a large and scattered number of access nodes.

FEATURES

1. Large node capacity: a single gateway can support up to 100,000 node access.
2. Multi-gateway network standby: when a gateway in a multi-gateway network is abnormal, nodes can enter the network through neighbouring gateways to ensure stability.
3. Node roaming: legitimate nodes can move freely within the coverage area of the gateway.
4. Full duplex uplink and downlink support: 8 uplink access channels and 1 downlink transmit channel.
5. Wide coverage radius: it can realise wide coverage of 5Km in city and 15Km in suburb.
6. PoE power supply: support standard Ethernet port power supply and DC12V dual power supply.
7. Power-down alarm: support power-down alarm function.
8. WiFi-based configuration management: provides a convenient and reliable low-cost operation path for base station system management and maintenance.
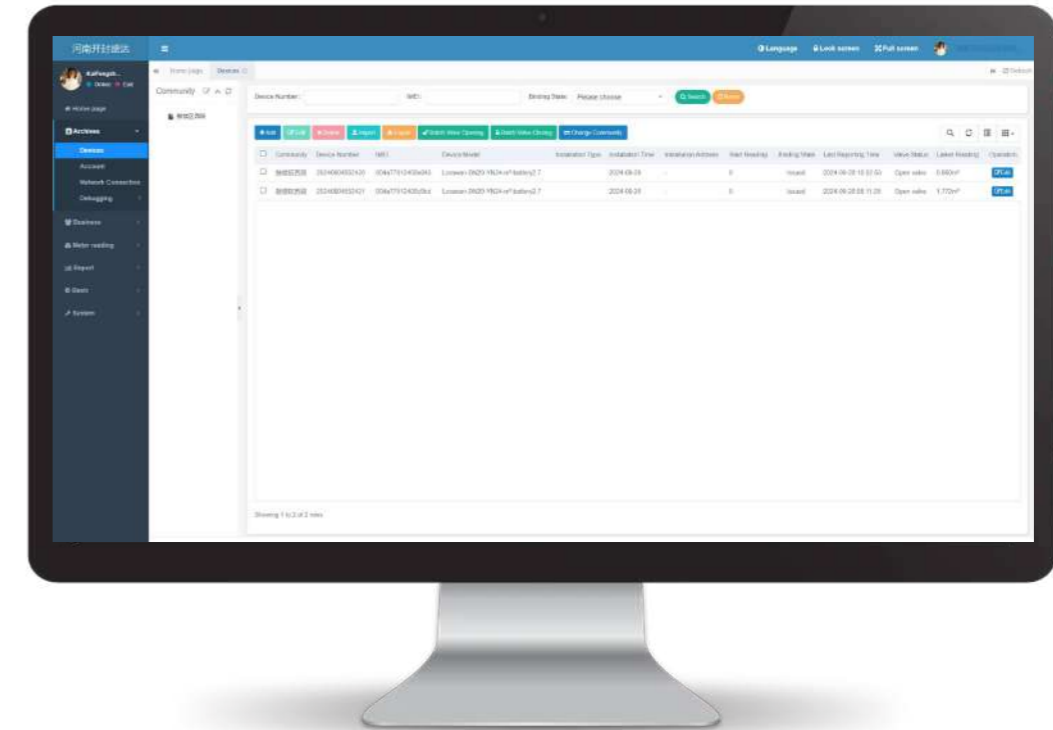
TECHNICAL PARAMETERS

Specification	Parameter
Working Frequency Band	433MHz\470MHz\868MHz\915MHz\923MHz
Operating Mode	Half-duplex, full-duplex optional
Channel and Bandwidth	8 uplink channels (bandwidth 125KHz), 1 downlink channel (bandwidth 250KHz)
Receiving Sensitivity	-140dBm @ SF12/BW 125KHz
RF Power	24dBm@ 250mW(Typical)
Power supply	
Voltage Input	DC-In 12VDC (12.5V-14.0V). PoE IEEE 802.3af/at (max 30W)
Power Management	Power down alarm
Ground Management	Grounding copper nose terminal
GPS	
Location Timing	Built-in GPS chip
Positioning authorisation	GPS, Beidou
Operating System	
Firmware	Based on Linux
Protocol	
Communication Protocol	LoRaWAN protocol
Security System	
Secure Encryption	AES128

Meter Cloud Platform System

Meter cloud platform system is a comprehensive management platform integrating system management, equipment management, production management, marketing and charging, data copying, energy consumption analysis, intelligent warning and other functions.

The platform adopts SaaS architecture, supports all mainstream browsers, and allows multi-users to collaborate on management operations, which greatly improves work efficiency. All data are saved in the cloud to avoid customer data loss and other problems.

Integration of data transcription and revenue collection

Data collection and marketing charges are integrated, eliminating the need to use two systems. Support step electricity and water billing, and support various marketing strategies such as discounts and reductions.

Kaifeng Shengda Water Meter Co., ltd was founded in 1995, is a high-tech enterprise specializing in the research and development, production, sales, management, and maintenance of big data for automated flow meters, Has obtained certificates and patents of 107 items. The annual production capacity exceeds 3 million units per year. So far, it has been exported to more than 130 countries and regions including the United States, Russia, Indonesia, Angola, Canada, Australia, Brazil, the Netherlands, Thailand, Vietnam, etc.

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