FDE FUJIDHARMA ELECTRIC
Connecting to smart world

FCWM - P2 series
Ultrasonic Water

The **FCWM-P2** ultrasonic water measurement is based on the transit time method, and all measurements, references, readings, calculation and data communication is controlled by an advanced specially designed electronic circuit.

The **FCWM-P2** present an IP68 whole plastic casing, and with big and full information LCD, easy to read the data and see alarms. the round shape is easy fo installation, sealing and maintenance. all information is laser printed on plastic nameplate which can't be removed forever.

The ultrasonic water meter can be remote reading via wireless technology, such as wireless LoRa, LoRaWAN, and NB-IoT. And it can be connected with a LoRa wireless valve-controlled electric valve also to be realized by remote controlled of valve switches through master station.

Features :

* Multi-flow caliber, small starting flow and high measurement accuracy;
* Built-in LoRaWAN module, low power design, measurement process is completed in meter;
* Installation without wiring, no external power supply required;
* Stable and reliable: Provides carrier-class reliability acces, effectively supporting applications for Internet of Thing and smart city solutions;
* Based on LoRa wireless spread spectrum technology, it support multi-band communication, 920~923 MHz;
* Long distance transmission, non-complex environment, transmission distance > 1000m;
* Low power comsumption, large capacity lithium battery is used, and the service life is 8~10 years;
* IP68 waterproof design, three waterproof technology, to ensure that the water meterworks properly in hars environments;
* Working temperature 0~50 ℃
* The water meter has built-in alarm output, reverse flow and other alarms, which is convenient for remote maintenance for the water company, the alarm for overload, small flow, and low voltage are available also;
* Reserved valve control interface, can be used as a prepaid water meter.

Product standard
ISO4064.1/2/3:2014 Standard for Drinking Cold Water Meters and Hot Water Meters

Data Sheet for ultrasonic water meter---Flow parameter

Size	Range (Q3/Q1)	Permanent $Q_3(m^3/h)$	Demarcation $Q_2(m^3/h)$	Minimum $Q_1(m^3/h)$	Overload $Q_4(m^3/h)$
DN15	250	2.5	0.016	0.010	3.125

Diameter (mm)	DN15
Thread	G3/4B
L1(mm)	110mm
H(mm)	93mm
W(mm)	105mm
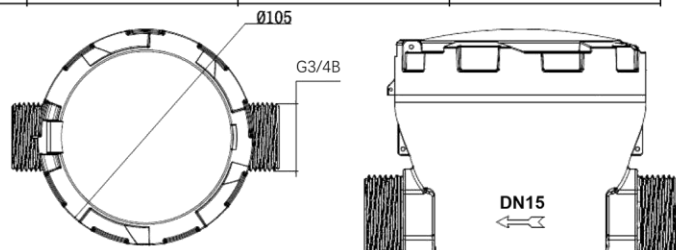
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Other technical data

Item		Parameter
Size		**DN15**
Length		**110**
$Q_3 (m^3/h)$		**2.5**
Range (R=Q3/Q1)		**R250**
Q start(L/h)		3
Pressure Loss		ΔP63
Accuracy		Class 2
Max working pressure		1.6MPa
Working Environment		+5℃ ~ +55℃, ≤100%RH
Temp. class		T30/T50, default T30
Sensitivity to irregularity in the upstream velocity field classes		U5 (>5D)
Sensitivity to irregularity in the downstream velocity field classes		D3(>3D)
Electromagnetic Compatibility		E1
Display		LCD 8 digitals + symbols
Content		Instantaneous flow rate (m³/h), Accumulated flow quantity (m³)
Range		Accumulated flow quantity：0m³ ~ ＋99999.999m³
Data Communication	Optical (IR)	Baud rate 2400bps,based on CJ/T 188 self-defined protocol
	LoRa wireless	920~923 MHz , distance>300m, Baud rate 9600bps
Power supply		Battery DC3.6V (continuous working above 6 years)
Power consumption		< 0.2mW
Protection level		IP68
Storage		-25℃ ~ +55℃
Installation position		In-pipe

Key parameter of LoRa/LoRaWAN wireless module for meter

Performance	Technical data
Quiescent dissipation	< 25uA
Transmitting power	< 50mW
Frequency	920~923 MHz
Transmission distance (Maximum in open environment)	> 300m
Baud rate	9600bps
Emission current	< 100mA
Receiving current	< 14mA
Wireless working mode	Timed wake-up