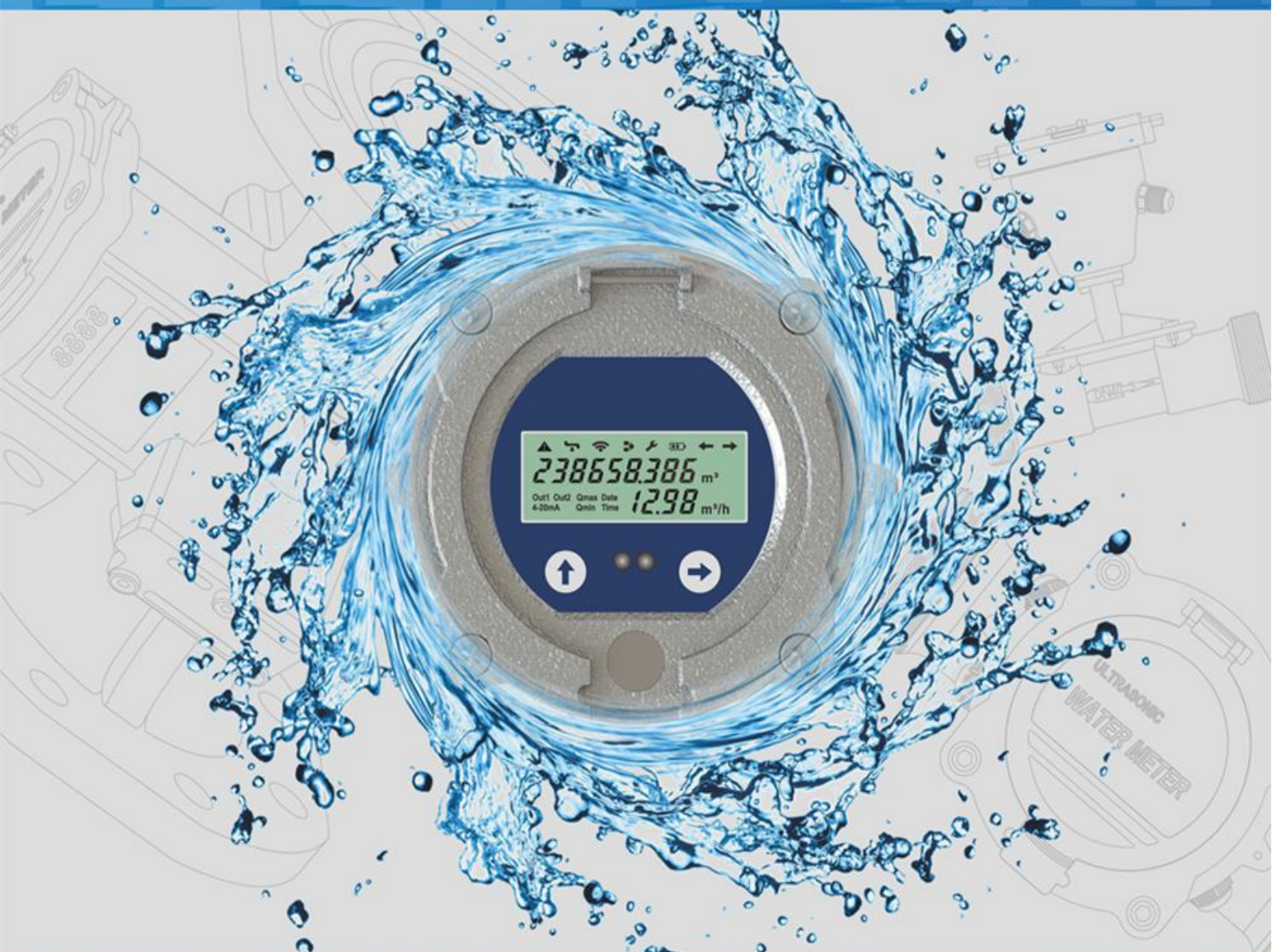


T3-1 Series



ULTRASONIC WATER METER



DaLian Taosonics Instrument Co.,Ltd

TSONIC[®] www.t3-1.com

Introduction

Dalian Taosonics Instrument Co.,Ltd is proud to introduce the new revolutionary, precise and super reliable ultrasonic water meter, Which is according to the ISO-4064 GBT 778 standard. The water meter adapt advanced transit-time measurement technology , with the remarkable features of low power consumption, wide measuring range ratio, stable and reliable measurement.

Each component reaches IP68 protection class, to ensure long term operation though water in the inside meter. Widely used in the urban water supply, water resources management, irrigation, landscape management, industrial production and automation industry

Features

Protection Class IP68

- Whole Machine Waterproof: whole machine sealed completely, reach IP 68 protection class.
- Parts waterproof: Circuit board, transducer and battery also can reach IP68 protection level, to ensure long term operation though water in the inside meter

Built-in Batch Controller Built-in Time Accumulator

- Set up the time controller by automatically or manually, so as to finish quantitative water supply or quantitative irrigation automatically.
- Set up the time- sharing flow accumulation at a set period time, to finish a gradient rate.

Heat Measurement

- With the two way PT1000 temperature transducer, which can finish the heat measurement, especially for the refrigeration and air-condition industry.

High Accuracy Measurement

- Double beam ultrasonic sensor for high accuracy.

Ultrasound Measurement, No Rotation, No Moving Parts

- Long term measurement with high accuracy, stable and reliable operation.
- Applicable to variety of water quality, including the gravel and weeds water quality.

Display and Operation

58X22mm LCD

Display the instantaneous flow, accumulative flow, time and various kinds of working status



Support Bi-directional Flow Measurement

Can measure instantaneous flow and accumulative flow under the forward and backward direction separately

Various of Units Selected

Accumulative flow:
m³, ft³, GAL, L
Instantaneous flow:
m³/h, GPM, L/m

Smart Touch Key

Easy for operation with finger

Infrared Communication Interface

Support CJ-188 communication, support the M-BUS and MODBUS communication, and support upgrade software

Communication and Signal Output



Standard Configuration:

1-2 485+,485-
3-4 V+,V-(DC8~30V)

External waterproof junction box, Can complete the wiring connection without opening the water meter cover

Provide below communication interface and output

Standard configuration:

1. RS485+ (A)
2. RS485- (B)
3. DC8~30V
4. GND

Optional:

1. GPRS module
2. RF module
3. OCT 1
4. OCT 2
5. C 1(TTL output 1)
6. C 2(TTL output 2)
7. 2-wired system 4~20mA output(Also can functionas DC24V EXT power supply)

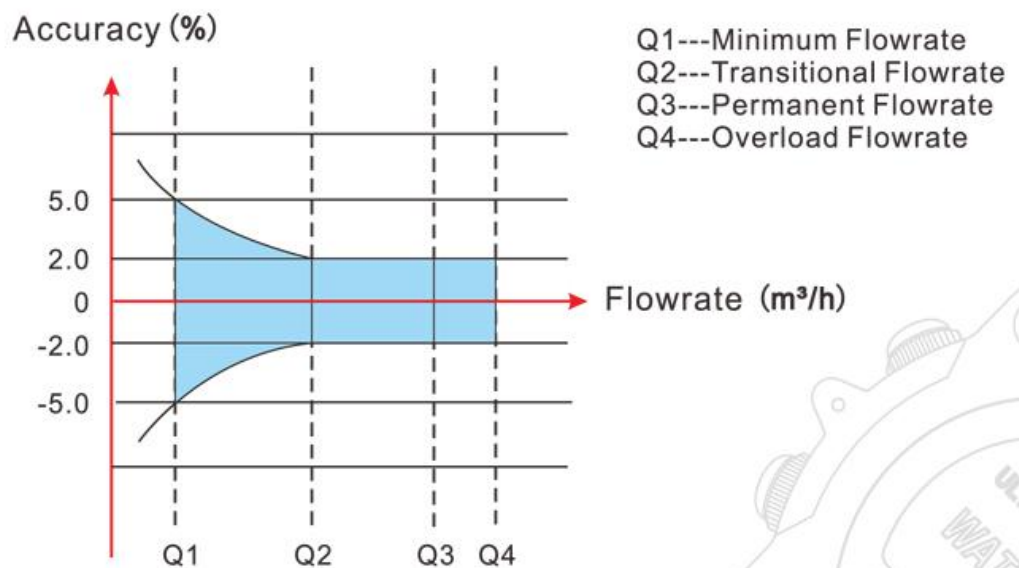
Ps: when ordering, you can choose any two of the above communication interface or output, lead to the external junction box



Data Sheet

Item	Specification
Standard	ISO 4064-2005, GBT 778-2007, JJG 162-2009
Measurement Liquid	Water, Sewage, Seawater(Other liquid need to customized), liquid should be full of the pipeline
Medium Temperature	0.1-30℃
Working Environment	Temperature; -10~45℃; Humidity≤100%(RH)
Working Pressure	1.6MPa (2.5Mpa optional)
The sensitivity of upstream	U3
The sensitivity of downstream	D0
Climatic and mechanical	C class
Electromagnetic compatibility class	E2 class
Communication Interface	RS485/USART/Infrared
Output Signal	Two Way OCT pulse output/TTL pulse output/One way 4-20mA output
Power supply	Built-in Lithium battery(3.6,19AhV)/DC8~36V power supply
Protection Class	IP68, can work 2 meters under water
Digital Display	Multi line 9 digital accumulative flow, 4 digital display for instantaneous flow, varies of state prompt and units
Data Storage	EEPROM/FLASH, automatically record the accumulative flow of last 512 days
Measurement Cycle	Measuring : 1 times/second ; Verification : 4 times/second
Power Consumption	≤ 2.7AH/Year, 6 years battery life

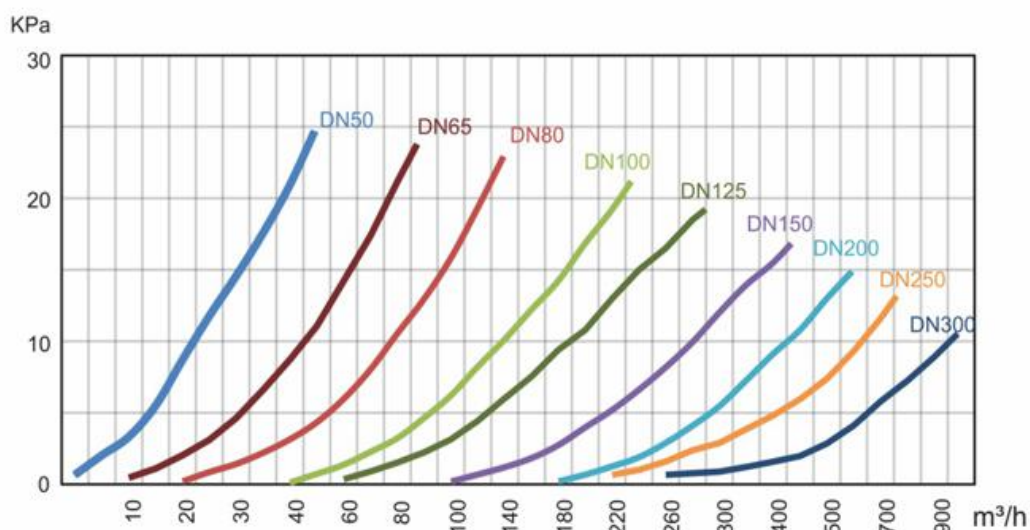
Performance Error Curve



Flow Range

Nominal Diameter (mm)	R	Flow (m ³ /h)				
		Starting Flowrate	Minimum Flowrate Q1	Transitional Flowrate Q2	Permanent Flowrate Q3	Overload Flowrate Q4
DN15	200	0.003	0.0125	0.020	2.500	3.125
DN20	200	0.0035	0.016	0.026	3.200	4.000
DN25	200	0.007	0.020	0.032	4.000	5.000
DN32	200	0.010	0.032	0.050	6.300	7.875
DN40	200	0.015	0.100	0.160	20.000	25.000
DN50	100	0.030	0.400	0.640	40.000	50.000
DN65	100	0.059	0.630	1.008	63.000	78.750
DN80	100	0.064	1.000	1.600	100.000	125.000
DN100	100	0.094	1.600	2.560	160.000	200.000
DN125	100	0.120	2.000	3.200	200.000	250.000
DN150	100	0.270	2.500	4.000	250.000	312.500
DN200	100	0.315	4.000	6.400	400.000	500.000
DN250	100	0.508	4.000	6.400	400.000	500.000
DN300	100	0.770	6.300	10.080	630.000	787.500

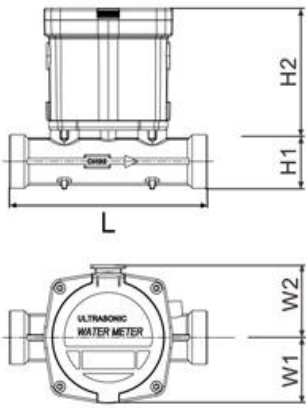
Pressure Loss Curve



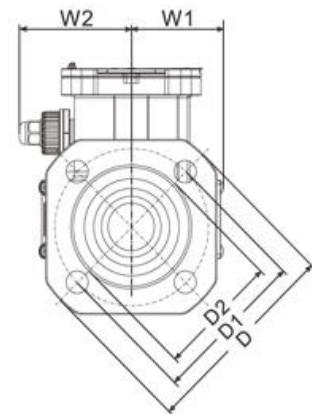
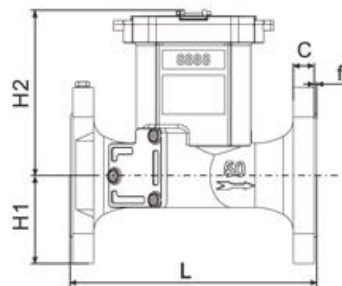
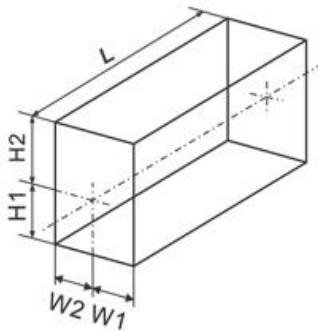
Dimension & Weight

DN15-DN40

Unite: mm



Nominal Size DN(mm)	Dimension					Thread Connection A	Thread Length	Weight kg	Pressure MPa
	L	H1	H2	W1	W2				
DN15	165	14	129.5	58.5	64.5	G3/4B	12	1.31	1.6
DN20	190	17.5	131.5	58.5	64.5	G1B	13	1.44	1.6
DN25	160	22	134	58.5	64.5	G1 1/4B	13	1.54	1.6
DN32	180	25	136.5	58.5	64.5	G1 1/2B	14.5	1.75	1.6
DN40	200	33	141	58.5	64.5	G2B	6	2.18	1.6



Unite: mm

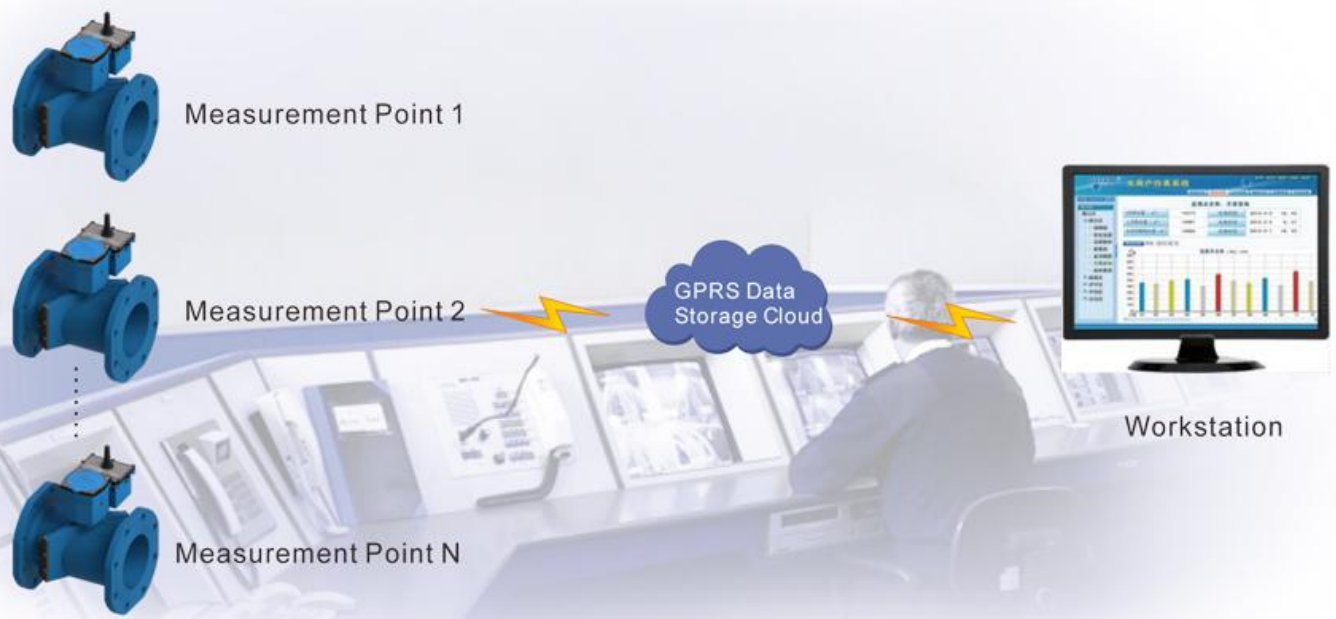
DN50-DN300

Nominal Size DN(mm)	Dimension					Flange Dimension						Weight kg	Pressure MPa
	L	H1	H2	W1	W2	Flange Diameter D	Bolt Hole Center D1	Bolt hole x Quantity $\Phi \times n$	Sealing surface		Flange thickness C		
									D2	f			
DN50	200	70	131	76	95	165	125	18×4	102	2	19	10.0	1.6
DN65	200	75	135	79	95	185	145	18×4	122	2	20	11.5	1.6
DN80	225	94	132	94	95	200	160	18×8	138	2	20	13.6	1.6
DN100	250	104	140	104	104	220	180	18×8	158	2	22	18.6	1.6
DN125	275	117	148	117	117	250	210	18×8	188	2	22	23.5	1.6
DN150	300	134	155	114	114	285	240	22×8	212	2	24	30.0	1.6
DN200	350	165	254	165	165	340	295	22×12	268	2	26	35.5	1.6
DN250	450	197	269	197	197	405	355	26×12	320	2	29	58.0	1.6
DN300	500	223	287	223	223	460	410	26×12	370	2	32	76.0	1.6

Wireless meter reading

IOT Ultrasonic Water Meters

IOT ultrasonic water meters with GPRS module (Battery powered, external power supplied optional), can achieve automatic wireless meter reading via GPRS data storage cloud.



Artificial wireless meter reading

Ultrasonic water meters with RF module and handheld meter reading unit can achieve artificial wireless meter reading.



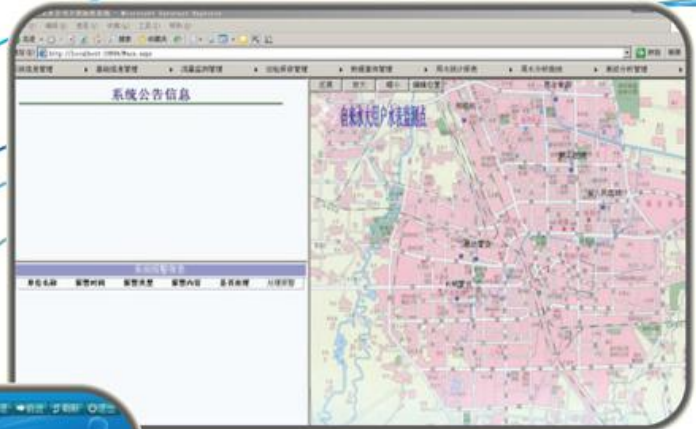


Typical Applications

Water Supply and Drainage

Branch line flow measurement—Scheduling and Management

- Convenient communication network, facilitate the management of computer networking.
- Various kinds of signal output, facilitate the implementation of remote monitoring.



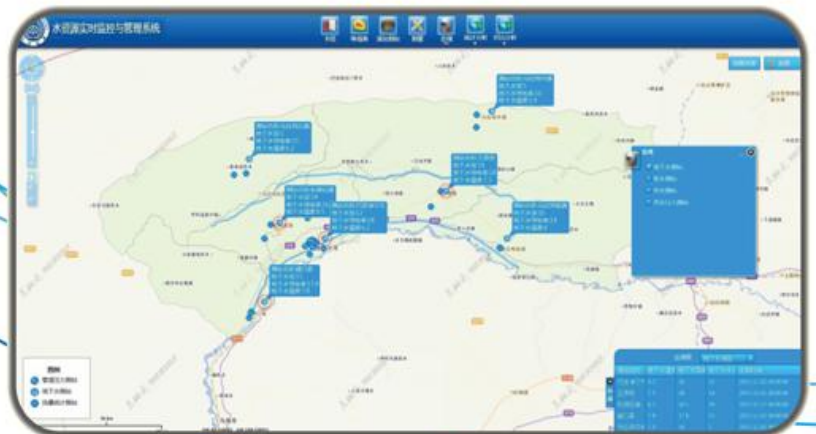
Household Measurement—Building, Factory and Industrial Park Water Settlement

- Low starting flowrate, measure smaller flowrate, increase water charge revenue.
- High accuracy measurement, reliable guarantee of the water charge.
- Wide measuring range ratio, suitable for large variable situation under the high and low peak flow
- With the built-in time accumulator, can finish the gradient rate.
- Convenient communication network, facilitate the management of computer networking, improve the management efficiency, save running costs.

Water Resources Management

Water Resources Settlement, Remote Monitoring and Computer Management

- Low starting flowrate, measure smaller flowrate, increase water charge revenue.
- High accuracy measurement, reliable guarantee of the water charge.
- Wide measuring range ratio, suitable for large variable situation under the high and low peak flow.
- No rotation and moving parts, long life expectancy, suitable for variety of water quality, including the gravel and weeds water quality.
- Convenient communication network, facilitate the management of computer networking, improve the management efficiency, save running costs.



● **Agricultural Irrigation and Landscaping**



Time control and quantitative control irrigation system

T3 water meter with built-in batch controller function, can set 5 scheduled times per day for the program control according to local weather conditions, crop or plant growth habit, in order to achieve water-saving irrigation, scientific irrigation.

Also through the computer networking, to achieve the time and quantitative management irrigation



● **Industrial Water Measurement**

Production Water Supply

- Settlement of external water supply
- Settlement of internal water usage
- Two-wired system 4-20mA power supply, can be used to the plant control system conveniently.





Complete Specifications



DN15 - DN40



DN 50 -DN150



DN 200 - DN300

DN15-DN40	Single channel small ultrasonic water meter (Copper)
DN50-DN150	Dual channel bulk ultrasonic water meter (Casted ductile iron)
DN200-DN300	Dual channel bulk ultrasonic water meter (welded carbon steel)

Ordering Code

A B C D E
T3-1- □ - □ - □ - □ - □

Letter	Parameter	Description	Remarks
A	Diameter	DN15~DN40 (Signal Channel) DN50~DN300(Dual Channel)	Choose the pipe diameter
B	Pipe Material	1 Casted ductile iron 2 Carbon steel 3 Copper 4 Stainless Steel	According to the pipe diameter
C	Communication Interface	0 None 1 RS 485 2 M-BUS(in development)	Standard configuration 1
D	Output Signal/ External Power Supply	0 None 1 DC 8-30V 2 Two-wired system 4-20mA 3 OCT1 (open-collector output 1) 4 OCT1 (open-collector output 1) 5 OCT2 (open-collector output 2) 6 C1 (TTL pulse output 1) 7 C2 (TTL pulse output 2)	Standard Configuration 1
E	Wireless Meter Reading	0 None 1 RF communication module(Optional) 2 GPRS module(Optional)	

Ps: you can choose any two of the above communication interface or output signal, lead to the external junction box
 Example : T3-1 – DN100 – 1 – 1 – 1 – 0

Description: DN50 Ultrasonic water meter , Casted ductile iron material , the communication interface t is RS485, external power supply is DC 8-30V, without the wireless meter reading function.

Sandwich Ultrasonic Water Meter

Taosonics will launch the patented products in 2015 ----

- 1 inch thickness(25.4mm), save installation space.
- Low cost, facilitate for large numbers of installation and usage.
- Built-in batch controller, can achieve the time control and quantitative control irrigation.
- Currently, can provide DN80, DN100, DN125, DN150 .

● Flow Range

Nominal Diameter (mm)	R	Flow (m ³ /h)				
		Starting Flowrate	Minimum Flowrate Q1	Transitional Flowrate Q2	Permanent Flowrate Q3	Overload Flowrate Q4
DN80	40	0.625	2.500	4.000	100.000	125.000
DN100	40	1.000	4.000	6.400	160.000	200.000
DN125	40	1.250	5.000	8.000	200.000	125.000
DN150	40	1.563	6.250	10.000	250.000	312.500



Transducer status before installation

Transducer status after installation

Operation Status

TSONIC[®]
TUF-2000



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