DN 15 – DN 3000 Whole Series Ultrasonic Water Meters

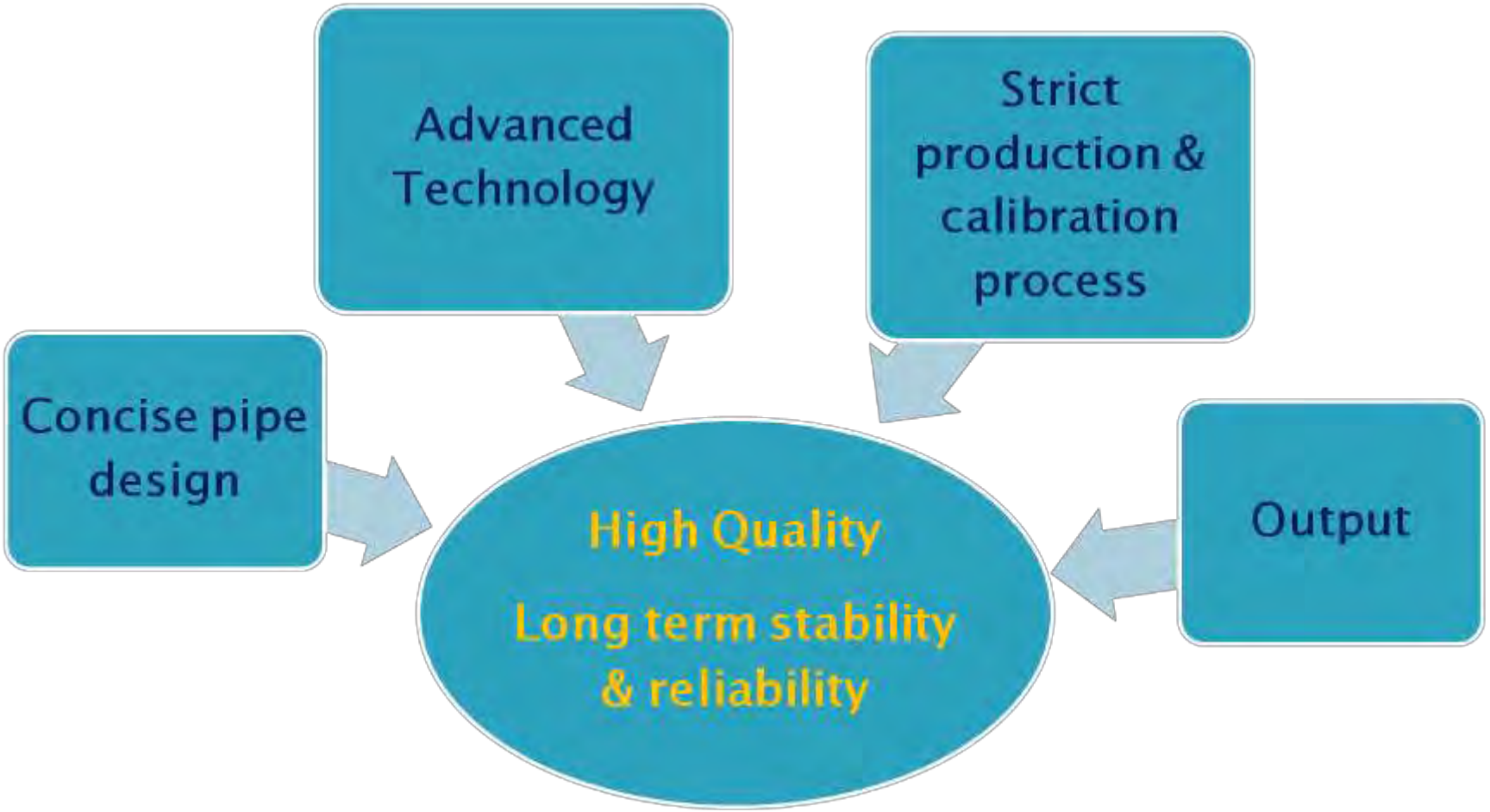
The Leading Ultrasonic Water Meters Manufacturer

Dynaflox New Factory Buildings

LISTED IN SHANGHAI EQUITY EXCHANGE. CODE: 100029

Assembling & Calibration

Features of Dynaflox Ultrasonic Water Meters

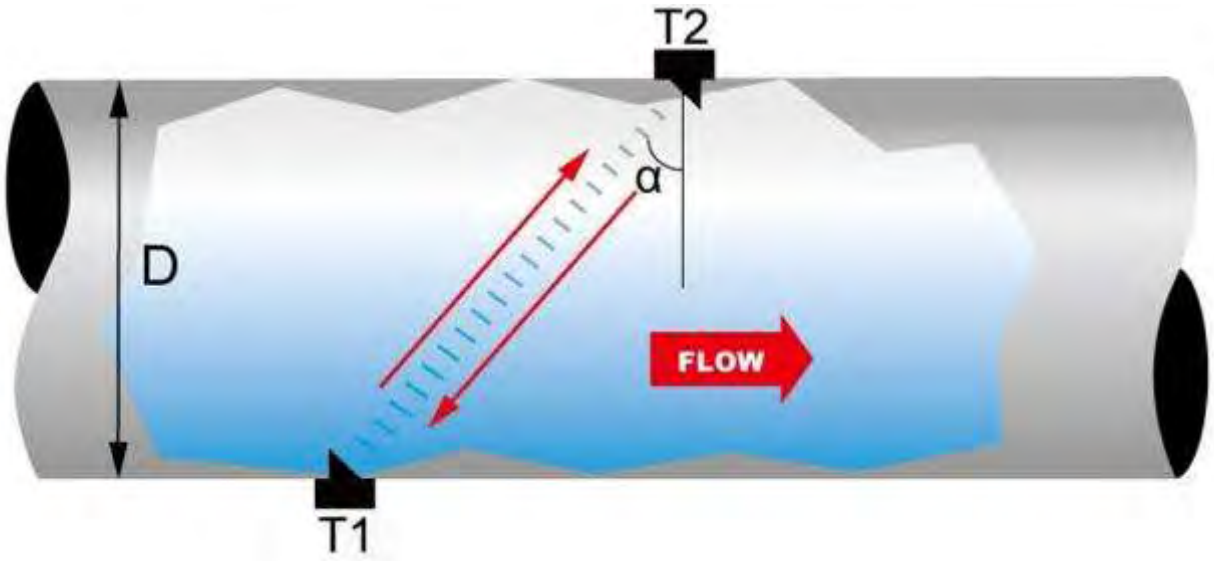


Concise Pipe Design

- Dual Beam Ultrasonic Technology
- No moving parts
- Superior hydraulic design

Dual path ultrasonic technology

— Precise and reliable metering



$V = K^{*}\Delta t$ ， $Q = S^{*}V_m$

V: water velocity

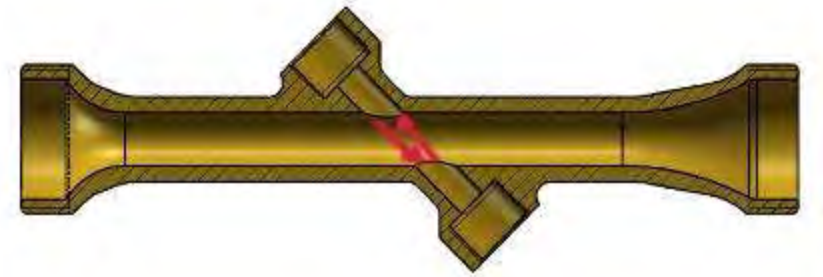
S: cross section area of the pipe

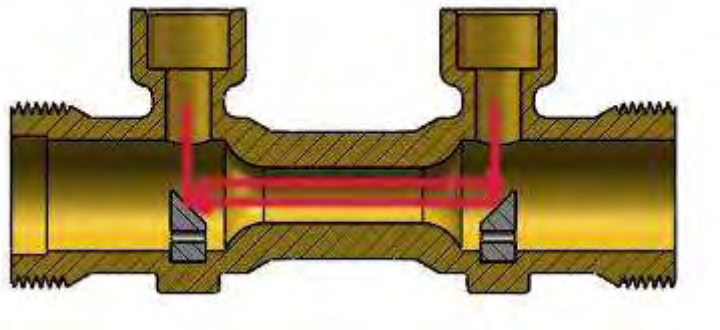
K: constant

$\Delta t = t_2 - t_1$

Superior hydraulic design
— Long term stability and reliability

- Directly reflecting technology





Dynaflox: Directly reflecting without choking flow component

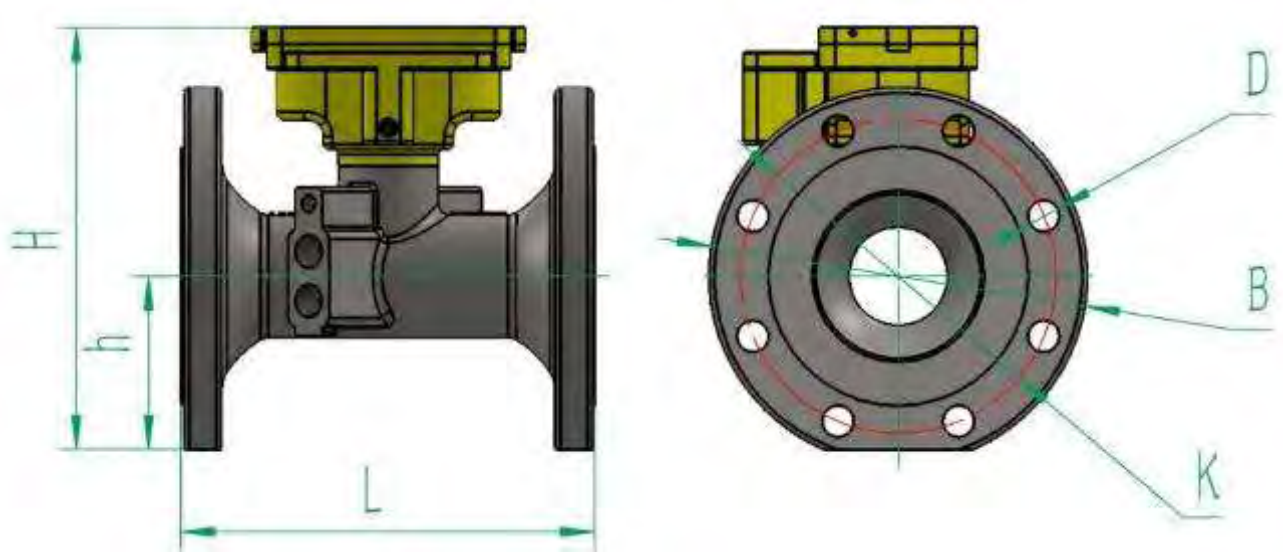
Others: Bronze mirror reflecting with choking flow component

Dynaflox: More stable, more reliable, longer life time, lower power consumption

Advanced Technology

- Extremely Wide Turndown Ratio R = 250-500
- Extremely Low Starting Flow
- Super Low Pressure Loss
- Battery powered – 10 years or 20 years life time
- Fully submersible design IP68

Standards



Flanges according to EN1092-1,
ASME/ANSI B16.5 Class 150

Standards

ISO CQM ATEX CE SGS

CN-00207Q11439R0S SHEM009060060701

MID APPROVED

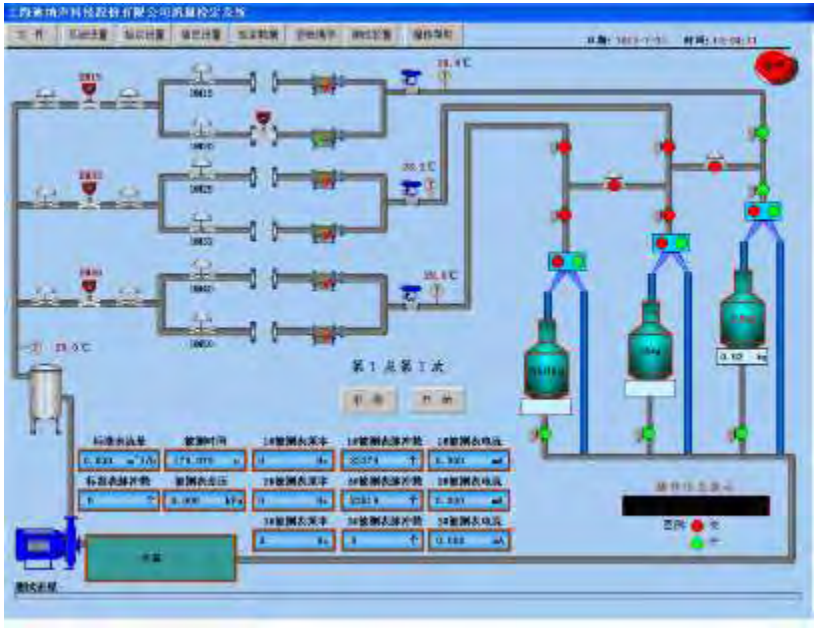
OIML

Strict production & calibration process

- Weighing system
- Standard meter system
- Calibration data

Calibration

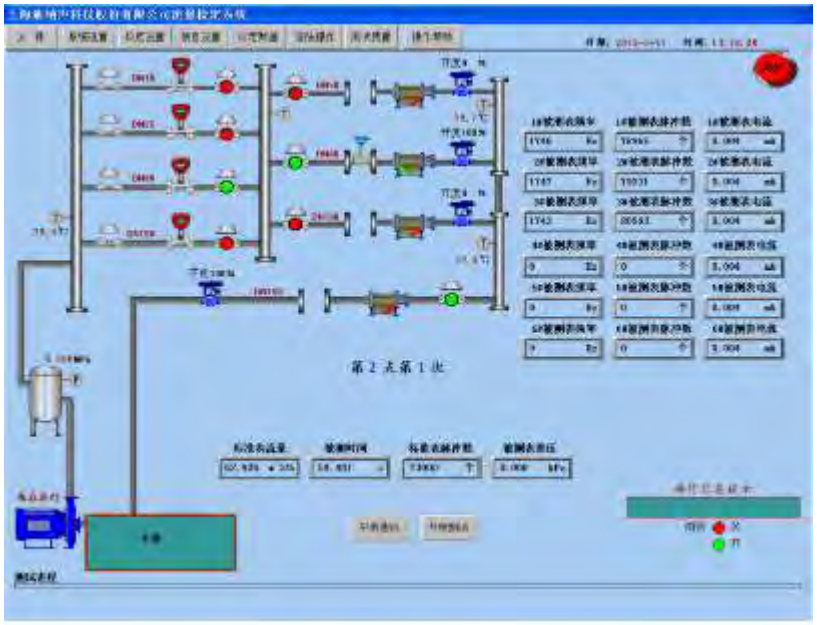
Weighing system



Control Center

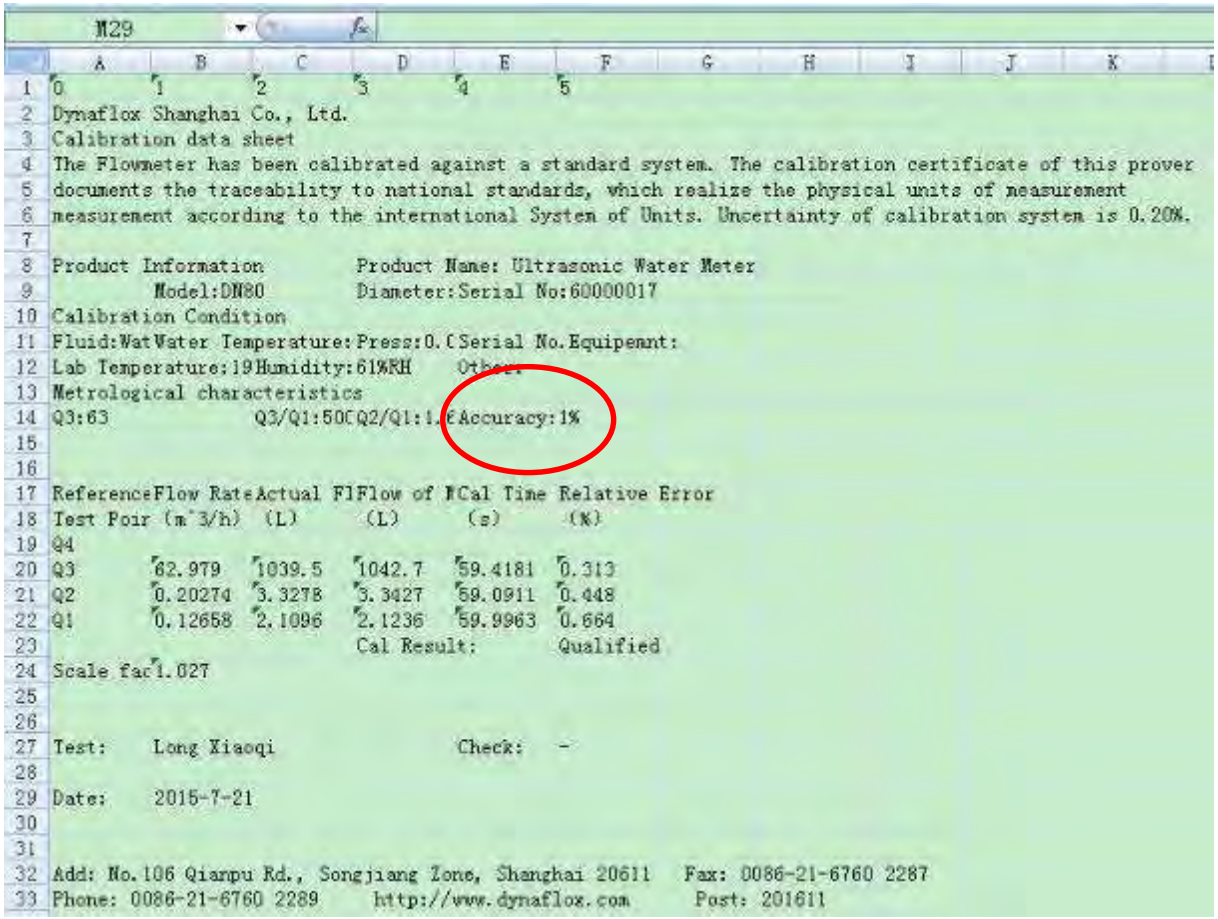
Calibration

Standard meter systems



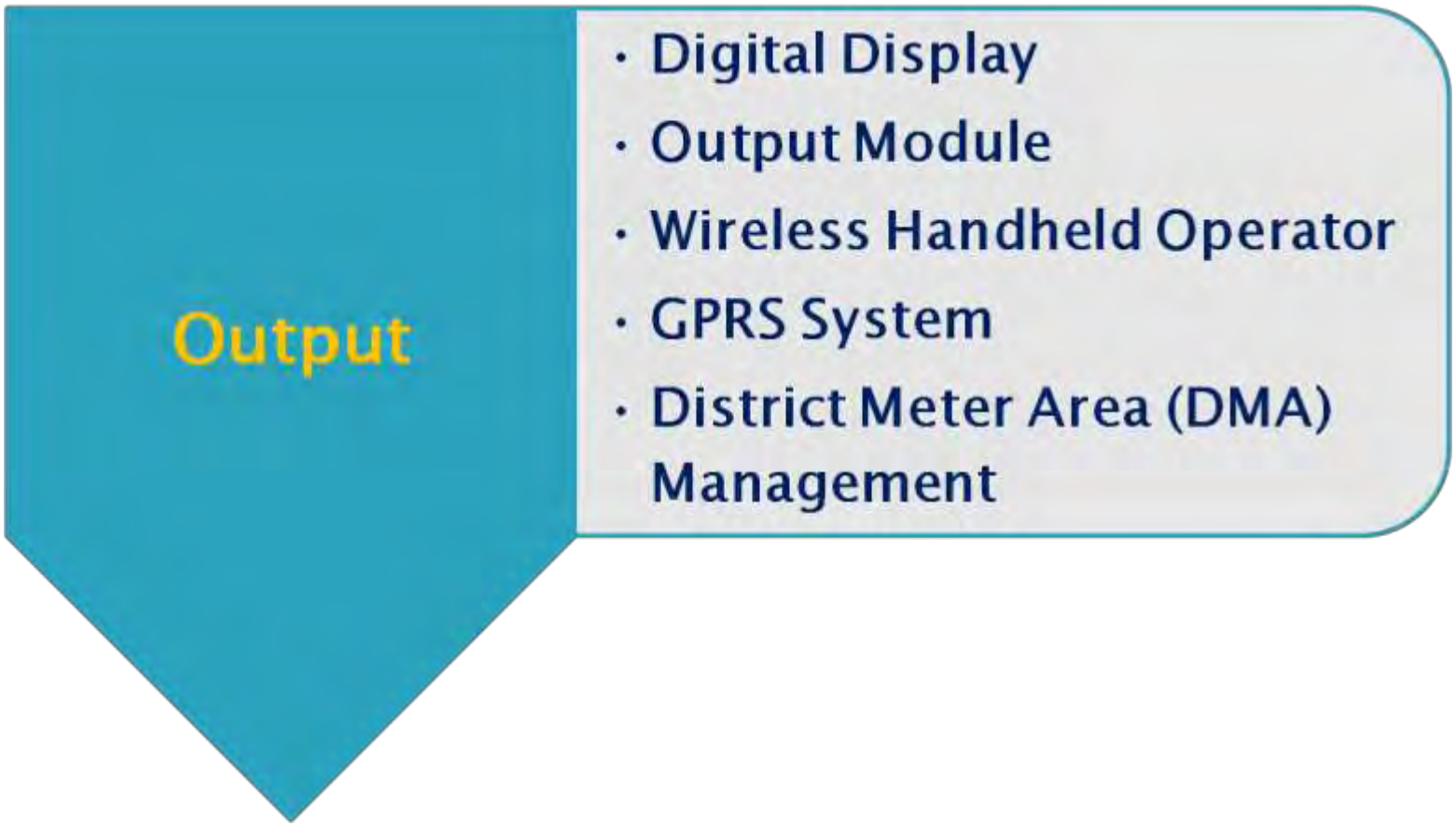
Control Center

Calibration Data



0	1	2	3	4	5	
Dynaflox Shanghai Co., Ltd.						
Calibration data sheet						
The Flowmeter has been calibrated against a standard system. The calibration certificate of this prover						
documents the traceability to national standards, which realize the physical units of measurement						
measurement according to the international System of Units. Uncertainty of calibration system is 0.20%.						
Product Information			Product Name: Ultrasonic Water Meter			
Model:DN80			Diameter:Serial No:60000017			
Calibration Condition						
Fluid:WatWater Temperature:Press:0.(Serial No.Equipemnt:						
Lab Temperature:19Humidity:61%RH			Other:			
Metrological characteristics						
Q3:63		Q3/Q1:50(Q2/Q1:1.(		Accuracy:1%		
Reference Flow Rate	Actual Fl	Flow of M	Cal Time	Relative Error		
Test Poir (m^3/h)	(L)	(L)	(s)	(%)		
Q4						
Q3	62.979	1039.5	1042.7	59.4181	0.313	
Q2	0.20274	3.3278	3.3427	59.0911	0.448	
Q1	0.12658	2.1096	2.1236	59.9963	0.664	
			Cal Result:		Qualified	
Scale fac	1.027					
Test:	Long Xiaoqi		Check:	-		
Date:	2015-7-21					
Add: No.106 Qianpu Rd., Songjiang Zone, Shanghai 20611				Fax: 0086-21-6760 2287		
Phone: 0086-21-6760 2289		http://www.dynaflox.com		Post: 201611		

Accuracy equals to Class 1


Output
· Digital Display
· Output Module
· Wireless Handheld Operator
· GPRS System
· District Meter Area (DMA) Management

Digital Display

- **Volume units**
- **Flowrate units**
- **Leak detect**
- **IR Communication**
- **Flow direction**
- **Low battery alert**
- **Pulse output**
- **Alarm**

Output Module

RS485 (ModBus)

M-Bus

OCT pulse

Two wire 4-20mA

Pressure Measuring Function (Optional)

Dynaflox ultrasonic water meter's built-in pressure transducer is integrated with high performance Silicon piezoresistive pressure oil filling core. The internal ASIC converts the millivolt signal of the transducer to standard long distance transmission voltage signal, and then connected to the water meters MCU directly.

Built-in Pressure Transducer

LCD Pressure Display

Technical Specifications

Working Temperature	-10℃～70℃
Accuracy	±1% F.S
Temperature Drift	2% F.S（0℃～60℃）
Insulation Resistance	50MΩ/250V
Power Supply	3.3VDC from internal battery
Output	0.5～2.5VDC to MCU
Measuring Range	0.1 ～ 1.6MPa

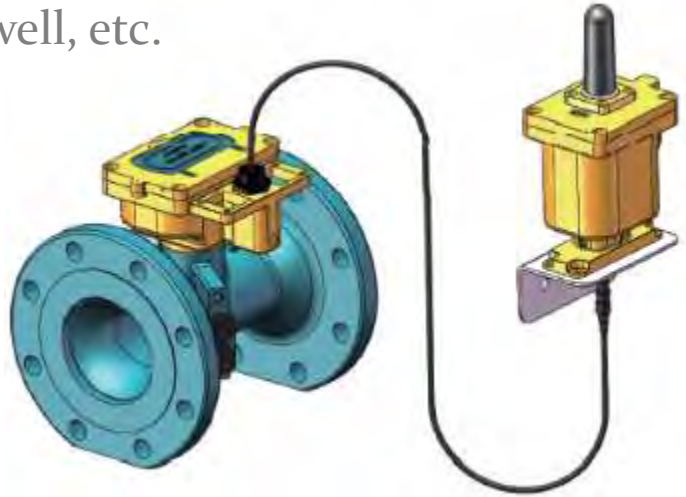
Wireless Handheld Operator

- Applied Infrared Communication, Active distance: 0.5m, Common distance: 2-3m;
- Read various of Current data and history data, data was stored in the operator with excel format, it will not loss data in power failure situation. The excel sheet could be read and modified by computer.
- Data will be calibrated by CRC, to ensure good accuracy and stability.

GPRS / Multifunction Water Meters

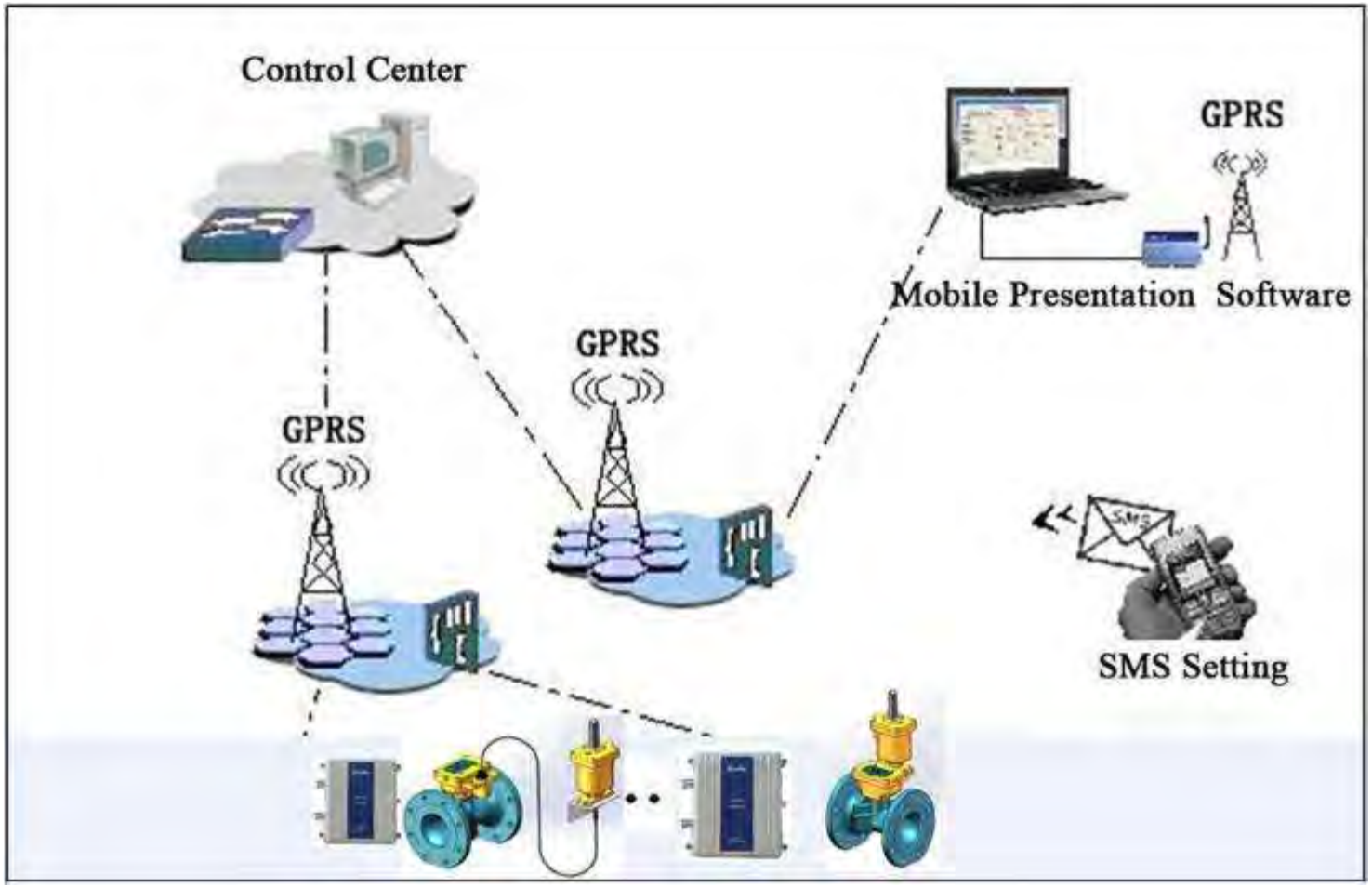
Dynaflox built-in GPRS ultrasonic water meters can be used in non-submergence, GPRS signal free environment.

While our split units with cable connection (max 1km) can suit any working conditions such as under water, drain well, etc.

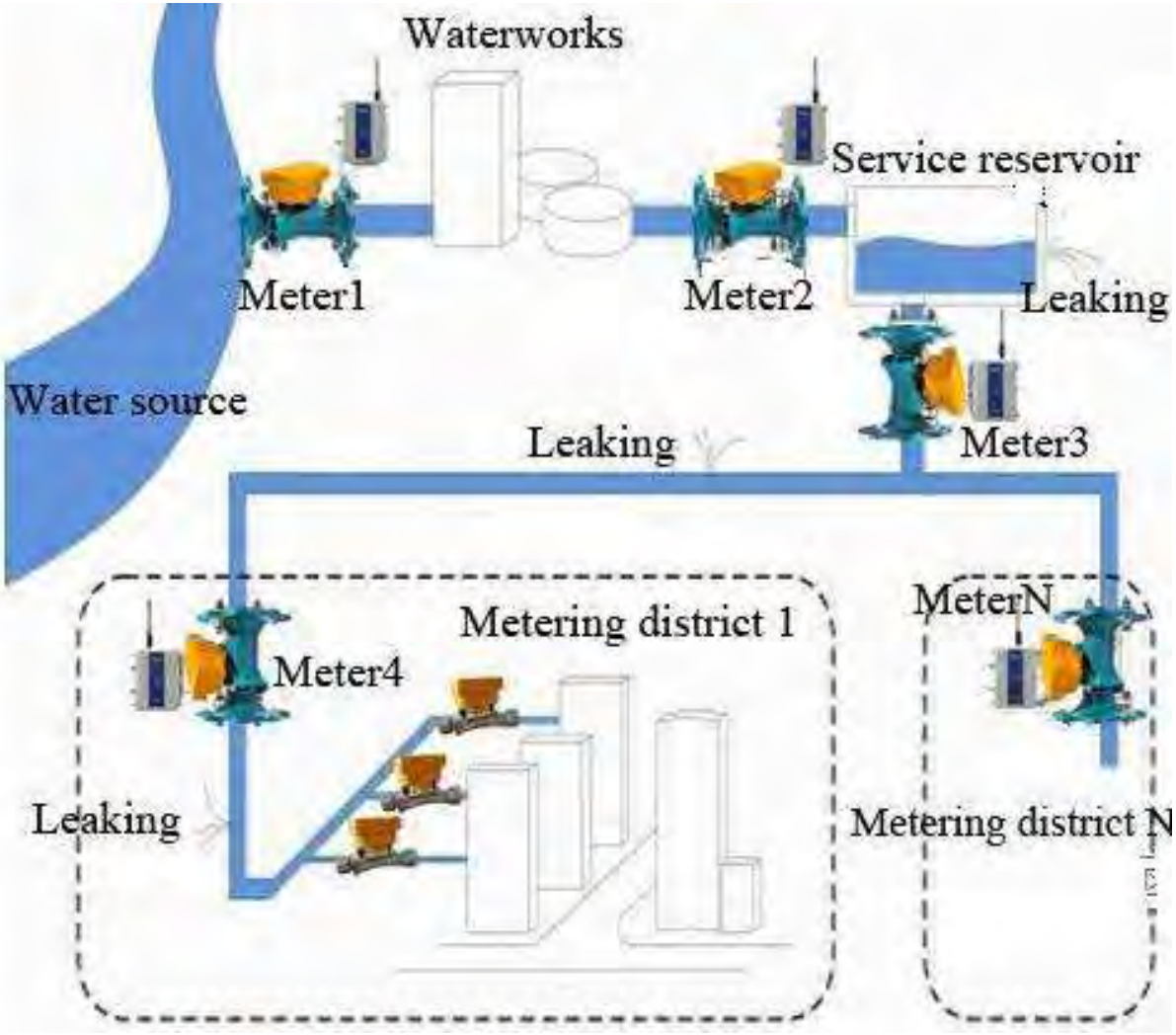


We also build the pressure transducer into the unit to make it as a 3-in-1 multifunction ultrasonic water meter.

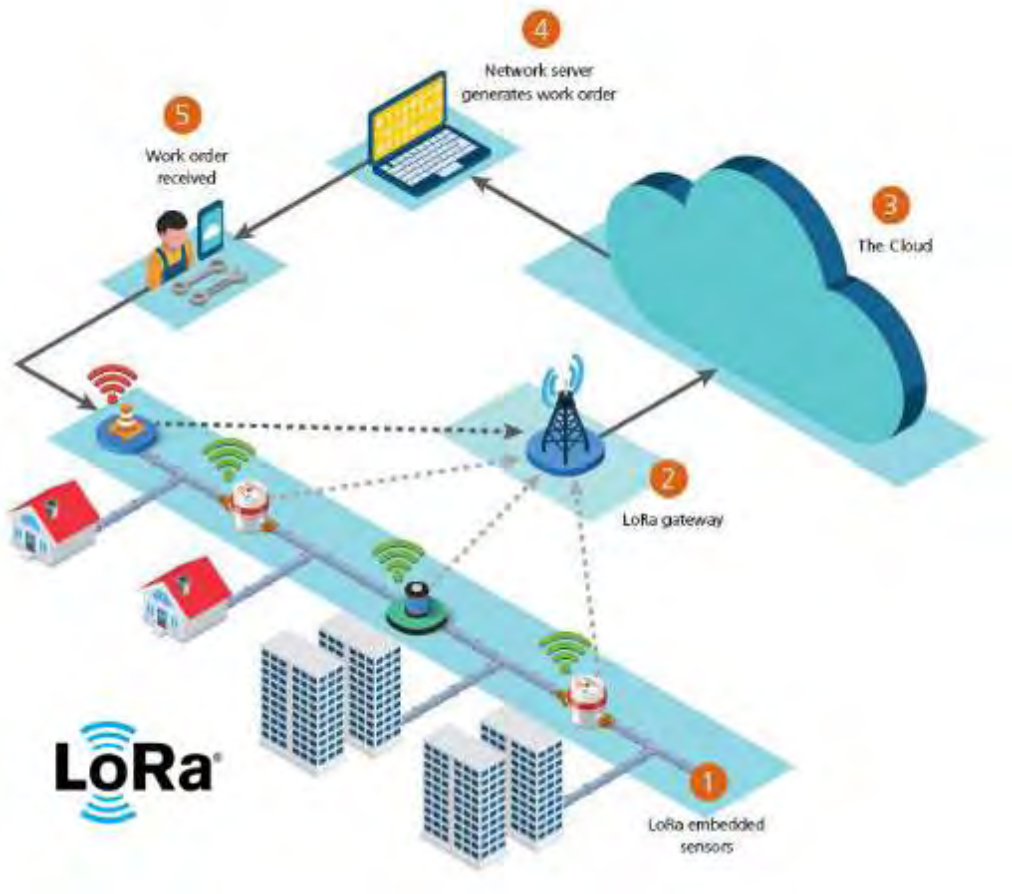
GPRS System


Control Center
GPRS
Mobile Presentation Software
GPRS
GPRS
SMS Setting

District Meter Area (DMA) Management



Smart Water Measurement



Dynaflox is applying LoRa Technology in most areas in China now and we will develop this to our customers worldwide.

LoRa: Long range, low power wireless platform is the prevailing technology choice for building IoT networks.

By implementing this smart water system, we help utility companies dramatically reduce their operational costs

Dynaflox Whole Series Ultrasonic Water Meters

(DN 15 – DN 3000)

A. Ultrasonic Small Size Water Meters (DN 15 – DN 40)

A.1 Ultrasonic Residential Water Meters (DN 15 / 20 / 25)

A.2 Ultrasonic Water Meters for Constructions & Buildings (DN 32 / 40)

B. Ultrasonic Bulk Water Meters (DN 50 – DN 600)

B.1 ultraD R500 Series (DN 50 – DN 300)

B.2 ultraF R250 Series (DN 250 – DN 600)

C. Ultrasonic Water Meters For Agricultural Irrigation (DN 80 – DN 150)

D. Hot-Tapped Insertion Ultrasonic Water Meters (DN 200 – DN 3000)

A. Dynaflox Ultrasonic Small Size Water Meters
(DN 15 – DN 40)

Features

- √ Ultrasonic transit-time measuring principle for precise metering
- √ Small size direct reflection technology, no moving parts and exposed parts
- √ Excellent long-term stability and reliability
- √ Battery powered - above 10 years lifetime
- √ Superior hydraulic design, **U0/D0**, no installation requirement of straight pipe
- √ Extremely sensitive and accurate in low flows
- √ Fully submersible design (IP68)
- √ Wireless data transmission and GPRS remote meter reading

Technical Specifications

Maximum Working Pressure	1.6MPa
Temperature Class	T30(default), T50, T70
Accuracy Class	Class 2
Materials	Brass, Stainless Steel
Battery Powered	10 years lifetime
Ingress Protection	IP68
Environment Temperature	-20~70°C, ≤100%RH
Pressure Loss	Δp25
Climatic and Mechanical Environment	Class C
Display	9 digit LCD Display + prompts Cumulative flow (m^3, L, GAL), Instantaneous flow (m^3/h, L/min, GPM), Flow direction, Low battery alarm, Output mode, Leak detection, etc.
Connections	Threads
Electromagnetic Environment Class	E2
Flow Profile Sensitivity	**U0/D0**
Date Storage	Store the data in last 7×24h, 365 days and 72 months
Output (optional)	RS485 (ModBus), M-Bus, OCT pulse, 4-20mA
Accessories	Wireless GPRS/GSM, Wireless handheld operator
Related Patents	ZL 2012 3 0466985.9, ZL 2011 2 0033304.X and ZL 2015 2 0007268.8

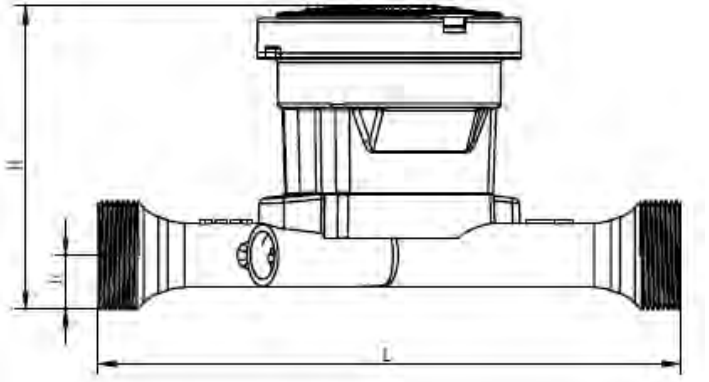
A.1 Ultrasonic Residential Water Meters
(DN 15 / 20 / 25)

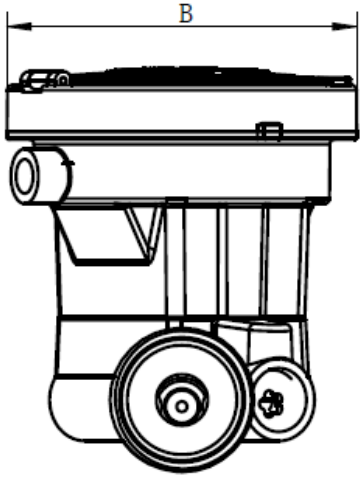
Materials: Brass
– Food Grade Safety

Measuring Range

Meter Size		R Q3/Q1	Starting Flow (m^3/h)	Q1 (m^3/h)	Q2 (m^3/h)	Q3 (m^3/h)	Q4 (m^3/h)
(mm)	(inch)						
15	1/2	250	0.001	0.01	0.016	2.50	3.13
20	3/4	250	0.001	0.016	0.025	4.00	5.00
25	1	250	0.002	0.04	0.064	10.00	12.50

Patented Design





Dimensions

Meter Size	(mm)	15	20	25
	(inch)	1/2	3/4	1
L- Length (mm)		165	195	225
B - Width (mm)		105	105	105
H - Height (mm)		110	113.5	118
h - Height (mm)		13	16.5	21
Weight (kg)	Brass	0.94	1.02	1.28

A.2 Ultrasonic Water Meters for Constructions & Buildings
(DN 32 / 40)

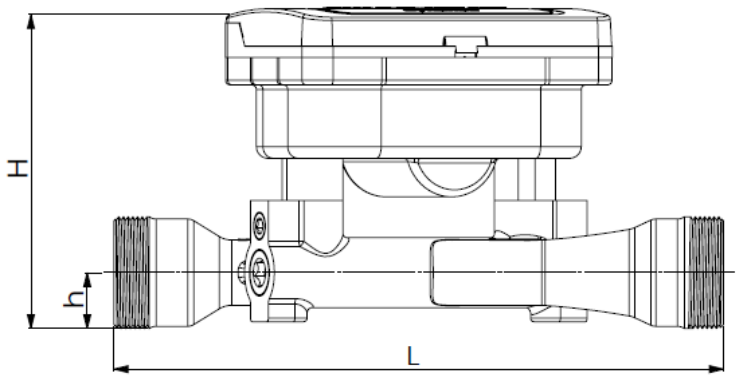
Materials:
Brass

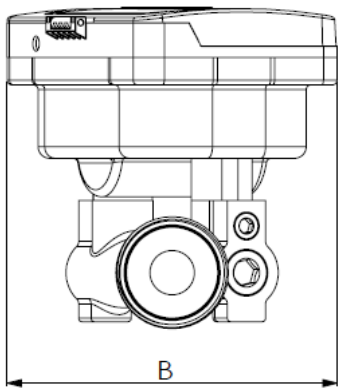
Materials:
Stainless Steel

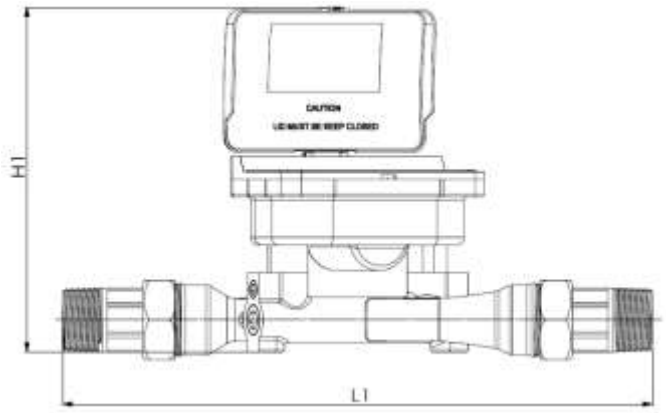
Measuring Range

Meter Size		R Q3/Q1	Starting Flow (m^3/h)	Q1 (m^3/h)	Q2 (m^3/h)	Q3 (m^3/h)	Q4 (m^3/h)
(mm)	(inch)						
32	1 1/4	250	0.002	0.06	0.10	16	20
40	1 1/2	500	0.003	0.08	0.13	40	50

Patented Design







Dimensions

Meter Size	(mm)	32	40
	(inch)	1 1/4	1 1/2
L- Length (mm)		260	300
B - Width (mm)		90	130
H - Height (mm)		130	132
H1 - Height (mm)		226	225
h - Height (mm)		19	30
L1-Length (mm)		385	430
Weight (kg)	Stainless Steel	2.3	3.7
	Brass	2.4	3.9

B. Dynaflox Ultrasonic Bulk Water Meters
(DN 50 – DN 600)

ultraD Series
Shrinking Pipe
Turndown Ratio (R) = 500
U0/D0*
Pressure Loss △p16

ultraF Series
Straight Pipe
Turndown Ratio (R) = 250
U5/D3*
No Pressure Loss

* Flow profile sensitivity or straight pipe installation requirements

Materials:
Ductile iron with epoxy coating / Stainless steel / Carbon steel

Connections:
Flanges according to DIN (EN1092-1) / ANSI/ASME16.5-150. (Other standards customizable)

B.1 ultraD Series
(DN 50 – DN 300)

Features

- √ Superior hydraulic design, no moving parts, zero wear, eliminate maintenance
- √ Advanced ultrasonic technology for precise and ultra reliable metering
- √ Extremely wide turndown ratio (R=500)
- √ Excellent long-term stability and reliability
- √ Extremely sensitive and accurate in low flow
- √ Battery powered - above 10 years lifetime
- √ Body materials - choices of epoxy coated cast iron / carbon steel / stainless steel suitable for utilities, waterworks, commercial, industrial, agricultural as well as ultrapure water, sea water and other corrosive fluid metering application
- √ Fully submersible design (IP68)

B.1 ultraD Series
(DN 50 – DN 300)

Technical Specifications

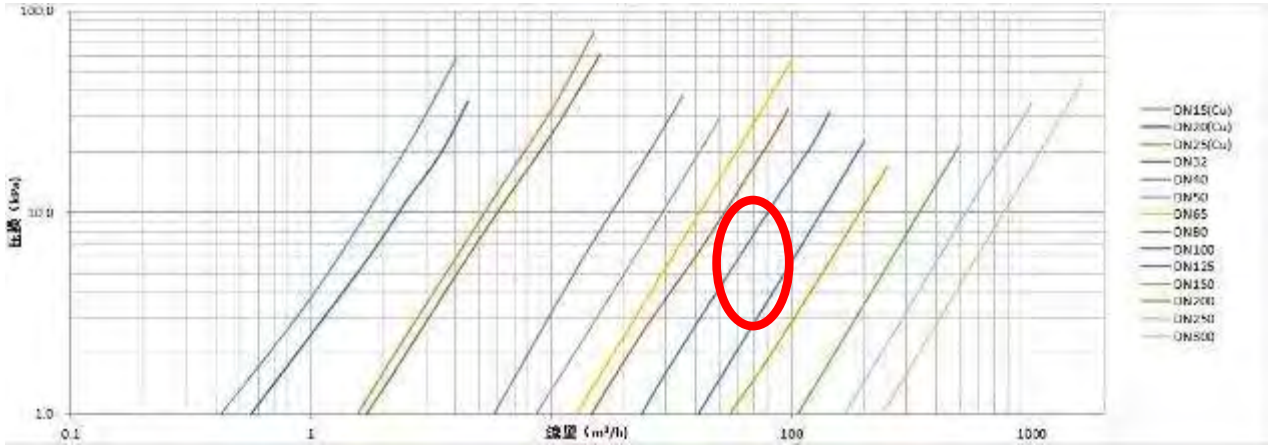
Maximum Working Pressure	1.6MPa
Temperature Class	T30, T50 (Higher temperature customizable)
Accuracy Class	Class 2
Battery Powered	10 years lifetime
Ingress Protection	IP68
Environment Temperature	-20~55oC, ≤100%RH
Pressure Loss	△p16
Climatic and Mechanical Environment	Class C
Display	9 digit LCD Display + prompts Cumulative flow (m3, L, GAL), Instantaneous flow (m3/h, L/min, GPM), Flow direction, Low battery alarm, Output mode, Leak detection, etc.
Connections	Flanges according to EN1092-1 / ASME B16.5-150 (Other standards customizable)
Electromagnetic Environment Class	E2
Flow Profile Sensitivity	**U0/D0**
Date Storage	Store the data in last 7×24h, 365 days and 72 months
Output (optional)	RS485 (ModBus), M-Bus, OCT pulse, 4-20mA, RS485+Pulse, M-Bus+Pulse
Accessories	Pressure measuring function, Wireless GPRS/GSM module, Wireless handheld operator
Related Patents	ZL 2012 2 0007226.2, ZL 2015 2 0007267.3 and ZL 2015 2 0007268.8

B.1 ultraD Series
(DN 50 – DN 300)

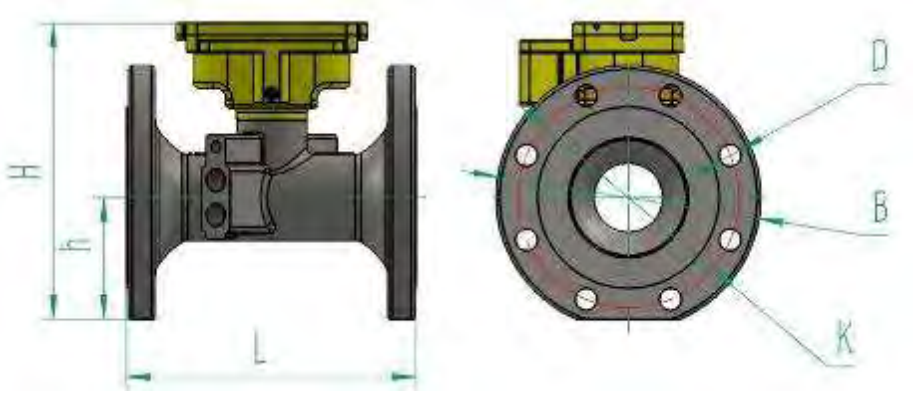
Measuring Range

Meter Size	(mm)	50	65	80	100	125	150	200	250	300
	(inch)	2	2 1/2	3	4	5	6	8	10	12
Starting Flow (m^3/h)		0.01	0.013	0.02	0.031	0.048	0.069	0.122	0.191	0.275
Q1 (m^3/h)		0.08	0.125	0.125	0.2	0.2	0.5	0.8	2	2.5
Q2 (m^3/h)		0.125	0.2	0.2	0.32	0.32	0.8	1.28	3.2	4
Q3 (m^3/h)		40	63	63	100	100	250	400	1000	1250
Q4 (m^3/h)		50	80	80	125	125	313	500	1250	1563
R - Q3/Q1		500								

Pressure Loss



B.1 ultraD Series
(DN 50 – DN 300)



Dimensions

Meter Size	(mm)	50	65	80	100	125	150	200	250	300
	(inch)	2	2 1/2	3	4	5	6	8	10	12
L- Length (mm)		200	200	225	250	250	300	350	450	500
B - Width (mm)		152.4	177.8	190.5	228.6	254	279.4	340	395	445
H - Height (mm)		204	213	236	256	276	300	342	397	448
h - Height (mm)		65	68	90	105	117	130	155	194	230
d x n		18x4	18x4	18x8	18x8	18x8	22x8	22x8	22x12	22x12
K (mm)		125	145	160	180	210	240	295	350	400
Pressure (MPa)		1.6	1.6	1.6	1.6	1.6	1.6	1	1	1
Weight (kg)	SS	7.3	7.8	11.6	16.5	18.9	23.4	40	60.4	85.8
	Cast Iron	6.7	7.0	10.6	15	17.2	21.3	36	55	78

Remarks:
d: diameter of bolt holes, n: numbers of bolt holes, K: central circle diameter of bolt holes

B.2 ultraF Series
(DN 250 – DN 600)

Features

- √ Superior hydraulic design, no moving parts, zero wear, eliminate maintenance
- √ Advanced ultrasonic technology for precise and ultra reliable metering
- √ No pressure loss
- √ Excellent long-term stability and reliability
- √ Extremely sensitive and accurate in low flow
- √ Battery powered - above 10 years lifetime
- √ Body materials - choices of epoxy coated cast iron / carbon steel / stainless steel suitable for utilities, waterworks, commercial, industrial, agricultural as well as ultrapure water, sea water and other corrosive fluid metering application
- √ Fully submersible design (IP68)

B.2 ultraF Series
(DN 250 – DN 600)

Technical Specifications

Maximum Working Pressure	1.6MPa
Temperature Class	T30, T50 (Higher temperature customizable)
Accuracy Class	Class 2
Battery Powered	10 years lifetime
Ingress Protection	IP68
Environment Temperature	-20~70oC, ≤100%RH
Pressure Loss	**No pressure loss**
Climatic and Mechanical Environment	Class C
Display	9 digit LCD Display + prompts Cumulative flow (m3, L, GAL), Instantaneous flow (m3/h, L/min, GPM), Flow direction, Low battery alarm, Output mode, Leak detection, etc.
Connections	Flanges according to EN1092-1 / ASME B16.5-150 (Other standards customizable)
Electromagnetic Environment Class	E2
Flow Profile Sensitivity	U5/D3
Date Storage	Store the data in last 7×24h, 365 days and 72 months
Output (optional)	RS485 (ModBus), M-Bus, OCT pulse, 4-20mA, RS485+Pulse, M-Bus+Pulse
Accessories	Pressure measuring function, Wireless GPRS/GSM module, Wireless handheld operator
Related Patents	ZL 2012 2 0007226.2, ZL 2015 2 0007267.3 and ZL 2015 2 0007268.8

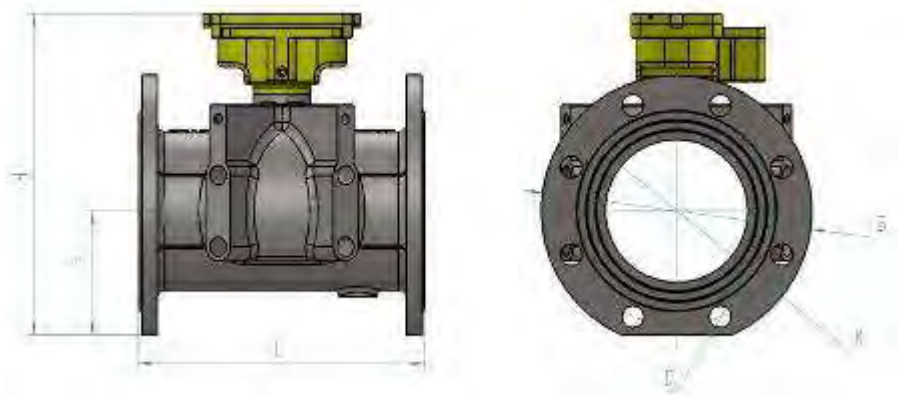
B.2 ultraF Series
(DN 250 – DN 600)

Measuring Range

Meter Size	(mm)	250	300	350	400	450	500	600
	(inch)	10	12	14	16	18	20	24
Starting Flow (m^3/h)		0.336	0.483	0.682	0.859	1.012	1.343	2.147
Q1 (m^3/h)		4.00	6.40	8.00	10.00	14.00	16.00	20.00
Q2 (m^3/h)		6.40	10.24	13.20	16.00	21.30	25.60	36.88
Q3 (m^3/h)		1000	1600	2000	2500	3500	4000	5000
Q4 (m^3/h)		1250	2000	2500	3125	4000	5000	7000
R - Q3/Q1		250						

B.2 ultraF Series

(DN 250 – DN 600)



Dimensions

Meter Size		(mm) / (inch)	250 / 10	300 / 12	350 / 14	400 / 16	450 / 18	500 / 20	600 / 24
L- Length (mm)			450	500	500	600	600	600	800
B - Width (mm)			395	445	505	565	615	645	755
H - Height (mm)			457	499	552	584	680	724	800
h - Height (mm)			194	215	248	278	304	318	374
d x n			22x12	22x12	22x16	22x16	26x20	26x20	26x20
K (mm)			350	400	460	515	565	600	725
Pressure (MPa)			1.0	1.0	1.0	1.0	1.0	0.6	0.6
Weight (kg)	Stainless Steel		68.5	89.6	119	138	152	168.6	216
	Ductile Iron		64.3	84.2	99	126	135	152.8	197
	Carbon Steel		65	86	102	130	138	155	202

Remarks:

d: diameter of bolt holes, n: numbers of bolt holes, K: central circle diameter of bolt holes

C. Ultrasonic Water Meters For Agricultural Irrigation
(DN 80 – DN 150)

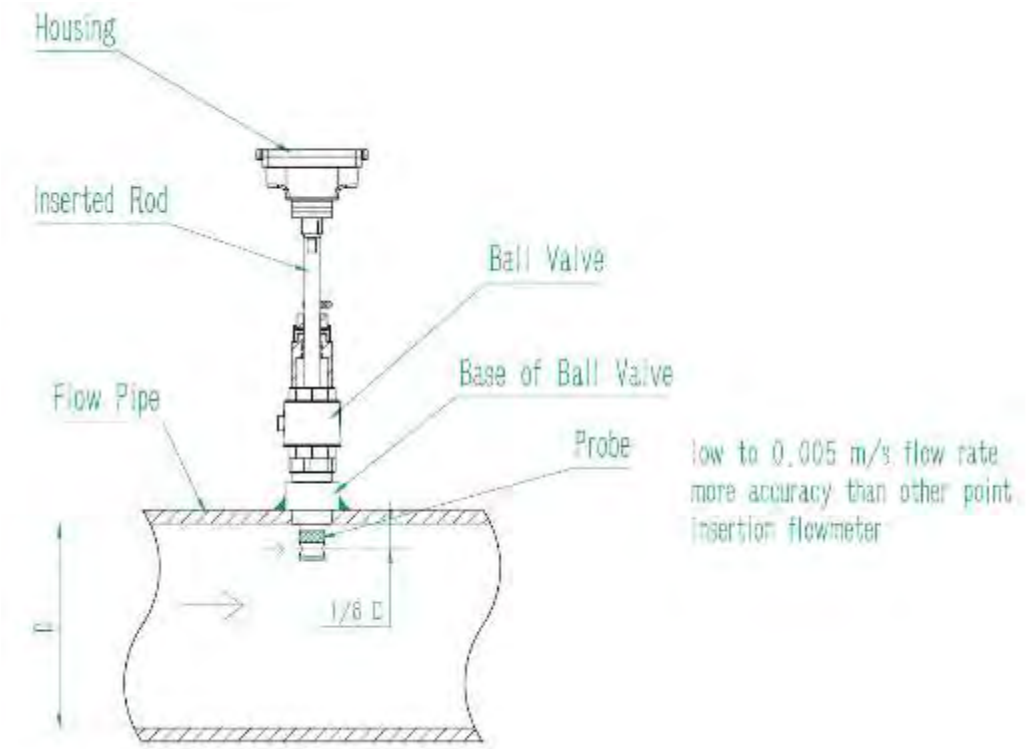
Prepaid IC Card

New

D. Hot-Tapped Insertion Ultrasonic Water Meters

(DN 200 – DN 3000)

Battery Powered



D. Hot-Tapped Insertion Ultrasonic Water Meters

(DN 200 – DN 3000)

Features

- √ Online install and maintain, use a normal hand-driller to open hole online and install, easy and convenient operation
- √ IP68 protection design, capable of working under water
- √ Plug-in and work immediately if there is water flow, no need water cut-off/on test
- √ Test extremely low flow, as low as 0.005m/s, bid-direction measurement, stable and reliable
- √ Long time Li battery supply, work more than 10 years
- √ Error self-detect, data storage function, store latest 7x24 Hour totalizer,12 month x day totalizer,72x month totalizer
- √ Display totalizer, instant flow rate, flow direction, low-voltage mark, meter's working condition, etc, convenient for users to read directly
- √ Output selection: OTC pulse totalizer (can be connected with dry contact input data logger/GPRS) or instant flow rate output, 4-20mA instant flow rate output, RS-485 (Modbus-RTU) or M-bus
- √ Economical & practical, it's the ideal meterage for huge pipe lines. Compare to other insertion flow meters, it's more accurate, more reliable, more capability of measuring low flow rate.

D. Hot-Tapped Insertion Ultrasonic Water Meters
(DN 200 – DN 3000)

Technical Specifications

Maximum Working Pressure	0.6MPa
Temperature Class	T30, T50 (Higher temperature customizable)
Velocity range	0.01-12m/s
Accuracy Class	Class 2
Battery Powered	above 10 years lifetime
Ingress Protection	IP68
Environment Temperature	-25~55°C, ≤100%RH
Power consumption	< 0.5mW
Climatic and Mechanical Environment	Class C
Display	9 digit LCD Display + prompts Cumulative flow (m^3, L, GAL), Instantaneous flow (m^3/h, L/min, GPM), Flow direction, Low battery alarm, Output mode, Leak detection, etc.
Pipe diameters range	DN200~DN3000
Electromagnetic Environment Class	E2
Date Storage	Store the data in last 7×24h, 365 days and 72 months
Output (optional)	RS485 (ModBus), M-Bus, 4-20mA OCT pulse (can be connected with dry contact input data logger/GPRS)

GPRS Module (integrated or separated) is optional

D. Hot-Tapped Insertion Ultrasonic Water Meters
(DN 200 – DN 3000)

On Site Applications

Dynaflox Applications

- Grid/Utility
- Residential
- Construction & Buildings
- Industrial
- Agricultural Irrigation

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Are Being Recruited

Thank You!

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