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Ultrasonic Metering

Product Brochure

HUIZHONG INSTRUMENTATION CO., LTD.



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Company Profile

HUIZHONG INSTRUMENTATION CO., LTD.

Huizhong Instrumentation Co., Ltd. was founded in 1994 and ever since, the company has grown steadily to its official listing on the Shenzhen Stock Exchange (ChiNext) in 2014 (300371.SZ) with registered capital of CNY120 million.

As the first company to develop ultrasonic flow measurement in China, Huizhong has always been committed to the research and development, manufacturing, and service of ultrasonic flow measurement products, as well as software and supporting solutions. Through more than 20 years of continual efforts, Huizhong has become one of the leading R&D and manufacturing companies in China specializing in Ultrasonic Heat Meters, Ultrasonic Water Meters, Ultrasonic Flowmeters, and Ultrasonic Metering Systems, which offers the largest product range (DN15-DN15000). The ultrasonic metering products address a variety of applications and use cases from industrial to civil, flow to heat, and are taking Huizhong from China to the world.

Huizhong owns nearly 100 patents and all the intellectual property rights of all products, including sensing technology, data acquisition, R&D, and system integration. In addition, Huizhong has also participated in the formulation of industry and national standards, such as "Ultrasonic flowmeter for potable water and drain water (Transmission speed difference method)", "Heat Meter", and "Verification Regulation of Ultrasonic Flowmeters".

Huizhong constantly work to improve the ultrasonic flow measurement technology and their capabilities within water and energy management and end-to-end services. Huizhong strive to satisfy the needs of their customers with world leading products and services, and advance the development of global water and energy saving initiatives to ensure economic improvements for operations and a sustainable future.



Huizhong Ultrasonic Metering R & D Base Aerial View



Technology R & D Center



DN15~DN2000 Real Flow Calibration Center



Smart Processing Line



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SCL-6 I H Residential Ultrasonic Water Meter

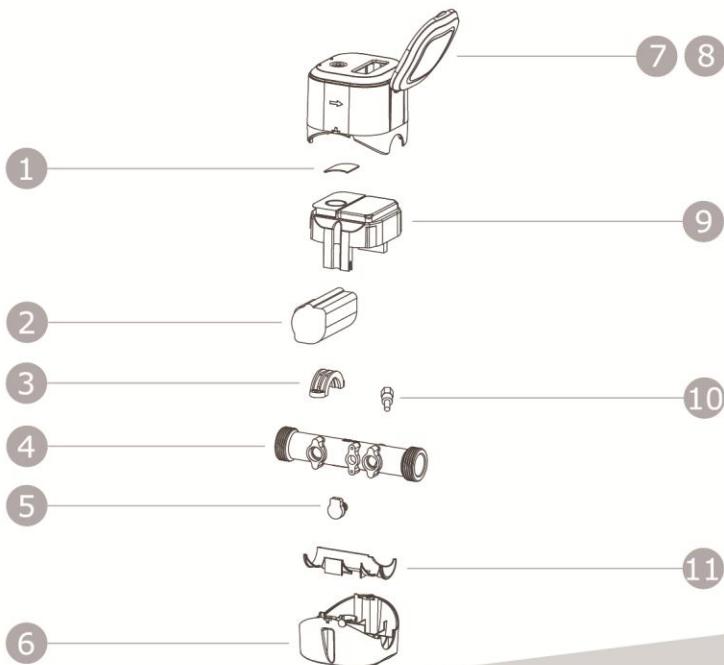
Scope of Application

Designed for residential area with household metering and billing system, reached the demand of precise measurement and settlement on End-User for water utilities.

Features:

- Large dynamic range to 400:1.
- Integrated mechanical design with protection class of IP68, able to work in long-term water immersion.
- Ultrasonic measuring technology with no mechanical moving parts and pressure loss, improves device serving time.
- Micro power consumption technology, battery-powered with lifetime over 10 years.
- Low starting flowrate (as low as 0.0015m³/h) .
- Utilize Narrow Band Internet of Things (NB-IoT) to communicate between device side and platform side, which achieves lower consumption, stronger inter-linkage, wider coverage and more reliable usage.
- Utilize data analysis platform built with self-developed system comprehensively integrated with IoT platform, seamless connected, apply Big Data and Cloud computing technology to further discover water supply information and resources.

No.	Name
1	Patch Antenna
2	Battery
3	Pressing Piece
4	Pipe Section
5	Pressure Sensor
6	Water Meter Lower Case
7	Water Meter Cover
8	Water Meter Upper Case
9	Water Meter Mechanism
10	Temperature Sensor
11	Pad





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Technical Parameters:

Item	Parameter	
	SCL-61H residential Ultrasonic Water Meter (NB-IoT / Sigfox)	SCL-61H residential Ultrasonic Water Meter (RS-485 / M-Bus / LoRa)
Accuracy	Class 2	
Nominal Diameter	DN15~DN25	DN15~DN40
Dynamic Range	≥250	
Maximum Working Pressure	1.6MPa	
Working Environment	-25°C~+55°C, ≤100%RH	
Rating of Temp.	T30、T50, default T30	T30、T50、T70, default T30
Rating of Upstream Flow Field Sensitivity	U10	
Rating of Downstream Flow Field Sensitivity	D5	
Category of Climate & Mechanical Environment Conditions	Class C	
Class of Electromagnetic Compatibility	E1	
Operation	Photosensitive key	
Display Indication	LCD, 10-digital+prompting character	LCD, 8-digital+prompting character
Values Displayed	Accumulated flow rate (m³) , Instantaneous flow rate (m³/h) , Water temperature (°C) , Accumulated effective running time (h) , Date (YY/MM/DD) , Time (hh:mm:ss) , Software version, Screen test	
Display Resolution	Accumulated flow rate 0.00001m³ Instantaneous flow rate 0.00001m³/h Water temperature 0.01°C	Accumulated flow rate 0.001m³ Water temperature 0.01°C
Display Range	Accumulated flow rate : 0m³~ + 19999.99999 m³	Accumulated flow rate : 0m³~ + 99999.999 m³
Data Communication	Photoelectric Interface, NB-IoT, RS-485, M-Bus, LoRa Sigfox(Report 6 times per day with last 4 hours' data)	
Power Supply	Battery DC3.6V (one battery can work continuously over 10 years)	
Protection Class	IP68	
Storage Temp.	-25°C~+55°C, ≤100%RH	
Temperature Parameter	Range	0°C~50°C
	Accuracy	±1°C
Pressure sensor Parameter (Optional)	Range	0~1.6MPa
	Accuracy	±0.5%FS



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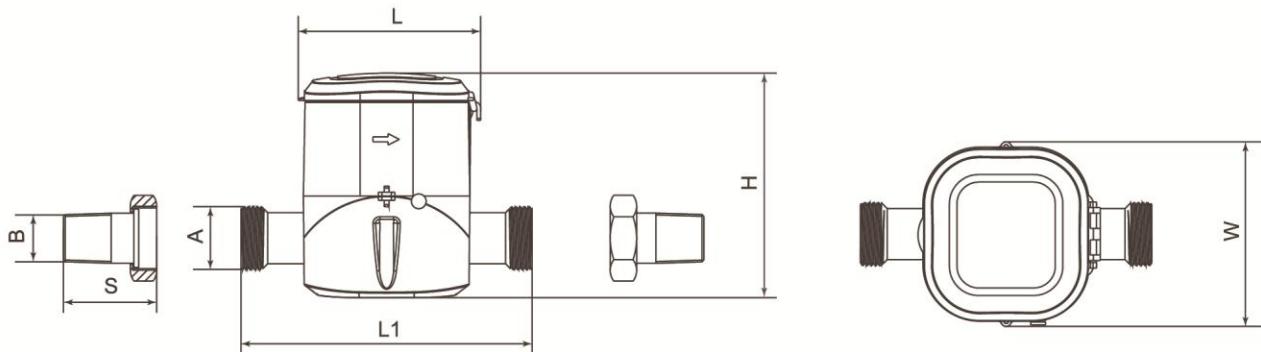
Flow Parameters (R250):

Nominal Diameter(mm)	DN15		DN20			DN25		DN32	DN40
Min.cutoff	0.0015	0.0015	0.0026	0.0026	0.0026	0.004	0.004	0.006	0.0085
Minimum Q ₁	0.006	0.010	0.006	0.010	0.016	0.016	0.025	0.040	0.040
Transitional Q ₂	0.010	0.016	0.010	0.016	0.025	0.025	0.040	0.064	0.100
Permanent Q ₃	1.6	2.5	1.6	2.5	4.0	4.0	6.3	10.0	16.0
Overload Q ₄	2.0	3.125	2.0	3.125	5.0	5.0	7.87	12.5	20
Pressure Loss	Δp25	Δp63	Δp10	Δp25	Δp63	Δp25	Δp63	Δp40	Δp40

Flow Parameters (R400):

Nominal Diameter(mm)	DN15		DN20		DN25	
Min.cutoff	0.002	0.0028	0.003	0.0035	0.0035	0.0035
Minimum Q ₁	0.00625	0.00625	0.010	0.010	0.010	0.01575
Transitional Q ₂	0.010	0.010	0.016	0.016	0.016	0.0252
Permanent Q ₃	2.5	2.5	4.0	4.0	4.0	6.3
Overload Q ₄	3.125	3.125	5.0	5.0	5.0	7.87
Pressure Loss	Δp63	Δp63	Δp63	Δp63	Δp63	Δp63

Dimension:

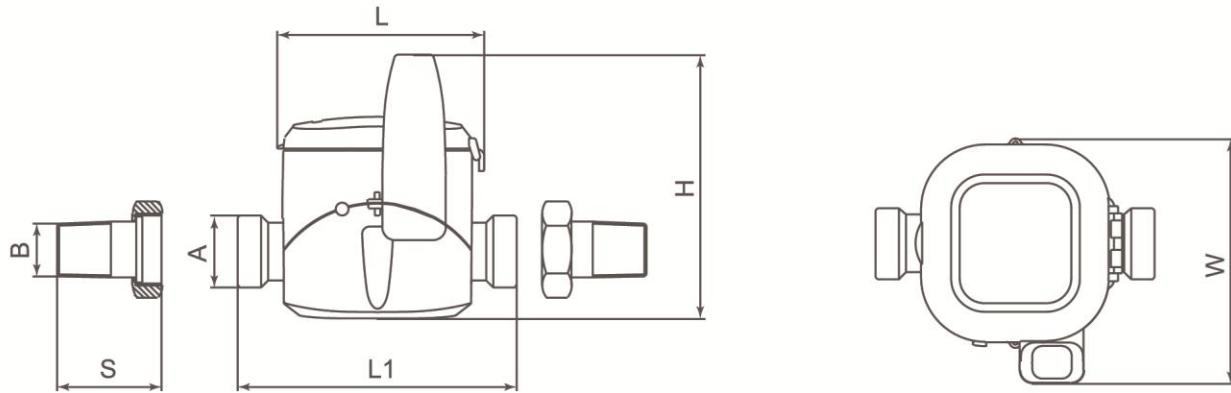


SCL-61H Residential Ultrasonic Water Meter (NB-IoT / Sigfox)

Nominal Diameter(mm)	DN15	DN20	DN25
A without Connections	G $\frac{3}{4}$ B	G1B	G1 $\frac{1}{4}$ B
B with Connections	R $\frac{1}{2}$	R $\frac{3}{4}$	R1
L(mm)	97	97	97
L1(mm)	110/165	130	160
H(mm)	119	119	119
W(mm)	98	98	98
S Connection Length(mm)	45	51	59

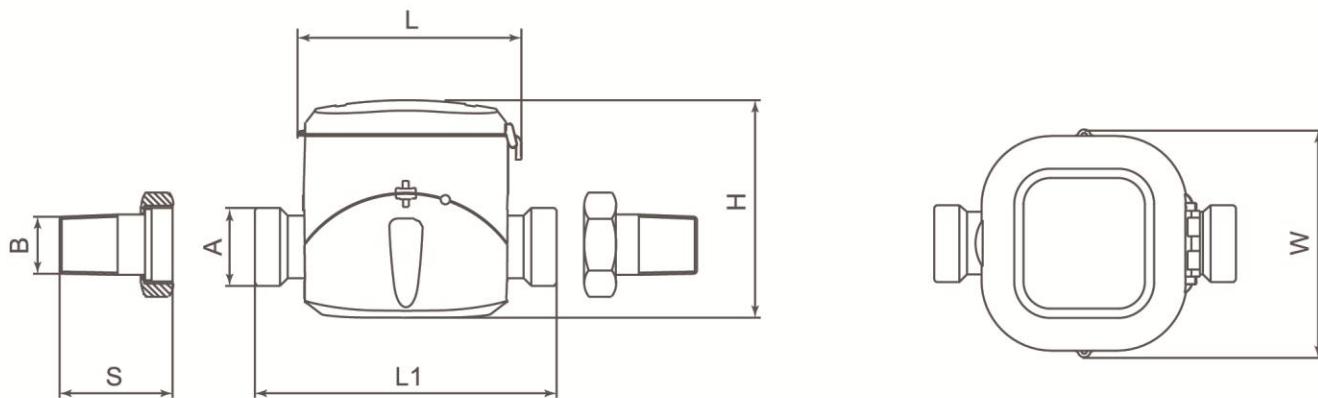


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SCL-61H Residential Ultrasonic Water Meter (LoRa)

Nominal Diameter(mm)	DN15	DN20	DN25	DN32	DN40
A without Connections	G $\frac{3}{4}$ B	G1B	G1 $\frac{1}{4}$ B	G1 $\frac{1}{2}$ B	G2B
B with Connections	R $\frac{1}{2}$	R $\frac{3}{4}$	R1	R1 $\frac{1}{4}$	R1 $\frac{1}{2}$
L(mm)	97	97	97	97	97
L1(mm)	110/165	130	160	180	200/245
H(mm)	123	123	123	146	153
W(mm)	115	115	115	115	115
S Connection Length(mm)	45	59	59	74	78



SCL-61H Residential Ultrasonic Water Meter (M-Bus / RS-485)

Nominal Diameter(mm)	DN15	DN20	DN25	DN32	DN40
A without Connections	G $\frac{3}{4}$ B	G1B	G1 $\frac{1}{4}$ B	G1 $\frac{1}{2}$ B	G2B
B with Connections	R $\frac{1}{2}$	R $\frac{3}{4}$	R1	R1 $\frac{1}{4}$	R1 $\frac{1}{2}$
L(mm)	97	97	97	97	97
L1(mm)	110/165	130	160	180	200/245
H(mm)	94	94	94	117	124
W(mm)	98	98	98	98	98
S Connection Length(mm)	45	51	59	74	78



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SCL-6 ID5 Reducing pipe Ultrasonic Water Meter

Scope of Application

Suitable for precise measurement of urban water supply pipeline and main meter on household metering, and also multiple no-power supply industrial fields.



Features:

- Online self-verification function.
- Large dynamic range R800, reached the precise measurement of minimum flowrate.
- 4-channel design for all series, dual-fracture surface, improve the accuracy under complex flow regime.
- Integrated flowrate and pressure measurement, able to reach the demand of DMA monitoring.
- Attached water temperature measurement function.
- Battery powered, micro power consumption, measurement cycle 1s, one battery can work continuously over 10 years.
- Low starting flowrate (corresponding velocity 0.002m/s) .
- Multiple transmission methods, RS-485, M-Bus, LoRa, Pulse output and NB-IoT.
- The stainless steel pipe can be recycled and reduce the user cost.
- Energy conservation and environmental protection, no casting, no pollution and also material saving.
- Quality seamless stainless steel cable, and precision machining by robot workshop.
- Smart manufacturing to satisfy flexible customization for customer.



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Technical Parameters:



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Flow Parameters (Accuracy: Class 1, Dynamic Range: R315)

Nominal Diameter (mm)	Min.cutoff	Q ₃ /Q ₁	Q ₂ /Q ₁	Minimum Q ₁ (m ³ /h)	Transitional Q ₂ (m ³ /h)	Permanent Q ₃ (m ³ /h)	Overload Q ₄ (m ³ /h)
100	0.037	R315	1.6	0.317	0.508	100	125
125	0.057	R315	1.6	0.508	0.813	160	200
150	0.089	R315	1.6	0.794	1.270	250	312.5
200	0.128	R315	1.6	1.270	2.032	400	500
250	0.227	R315	1.6	2.000	3.200	630	787.5
300	0.354	R315	1.6	3.174	5.079	1000	1250

Flow Parameters (Accuracy: Class 1, Dynamic Range: R500)

Nominal Diameter (mm)	Min.cutoff	Q ₃ /Q ₁	Q ₂ /Q ₁	Minimum Q ₁ (m ³ /h)	Transitional Q ₂ (m ³ /h)	Permanent Q ₃ (m ³ /h)	Overload Q ₄ (m ³ /h)
80	0.024	R500	1.6	0.200	0.320	100	125
100	0.037	R500	1.6	0.320	0.512	160	200
125	0.057	R500	1.6	0.500	0.800	250	312.5
150	0.089	R500	1.6	0.800	1.280	400	500
200	0.128	R500	1.6	1.260	2.016	630	787.5
250	0.227	R500	1.6	2.000	3.200	1000	1250
300	0.354	R500	1.6	3.200	5.120	1600	2000

Flow Parameters (Accuracy: Class 2, Dynamic Range: R400)

Nominal Diameter (mm)	Min.cutoff	Q ₃ /Q ₁	Q ₂ /Q ₁	Minimum Q ₁ (m ³ /h)	Transitional Q ₂ (m ³ /h)	Permanent Q ₃ (m ³ /h)	Overload Q ₄ (m ³ /h)
50	0.010	R400	1.6	0.0625	0.100	25	31.25
65	0.015	R400	1.6	0.100	0.160	40	50
80	0.024	R400	1.6	0.1575	0.2520	63	78.75
100	0.037	R400	1.6	0.250	0.400	100	125
125	0.057	R400	1.6	0.400	0.640	160	200
150	0.089	R400	1.6	0.625	1.000	250	312.5
200	0.128	R400	1.6	1.000	1.600	400	500
250	0.227	R400	1.6	1.575	2.520	630	787.5
300	0.354	R400	1.6	2.500	4.000	1000	1250

Flow Parameters (Accuracy: Class 2, Dynamic Range: R500)

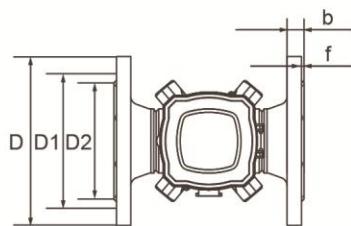
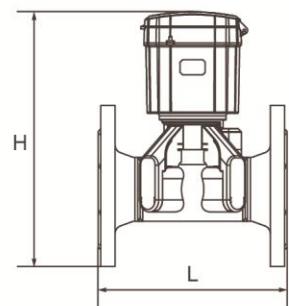
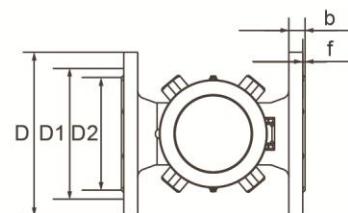
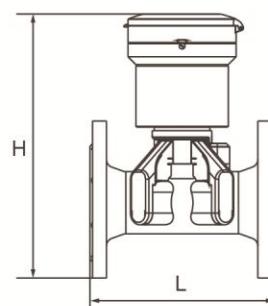
Nominal Diameter (mm)	Min.cutoff	Q ₃ /Q ₁	Q ₂ /Q ₁	Minimum Q ₁ (m ³ /h)	Transitional Q ₂ (m ³ /h)	Permanent Q ₃ (m ³ /h)	Overload Q ₄ (m ³ /h)
50	0.010	R500	1.6	0.050	0.080	25	31.25
65	0.015	R500	1.6	0.080	0.128	40	50
80	0.024	R500	1.6	0.126	0.2016	63	78.75
100	0.037	R500	1.6	0.200	0.320	100	125
125	0.057	R500	1.6	0.320	0.512	160	200
150	0.089	R500	1.6	0.500	0.800	250	312.5
200	0.128	R500	1.6	0.800	1.280	400	500
250	0.227	R500	1.6	1.260	2.016	630	787.5
300	0.354	R500	1.6	2.000	3.200	1000	1250

Flow Parameters (Accuracy: Class 2, Dynamic Range: R630)

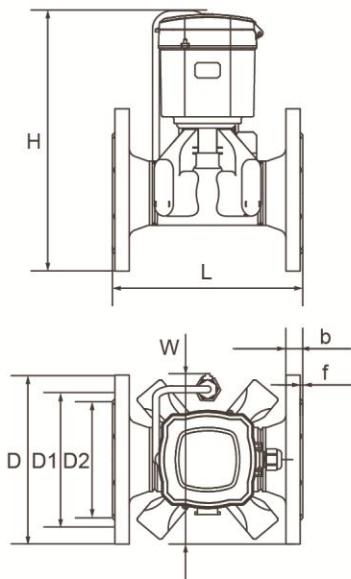
Nominal Diameter (mm)	Min.cutoff	Q ₃ /Q ₁	Q ₂ /Q ₁	Minimum Q ₁ (m ³ /h)	Transitional Q ₂ (m ³ /h)	Permanent Q ₃ (m ³ /h)	Overload Q ₄ (m ³ /h)
50	0.010	R630	1.6	0.064	0.102	40	50
65	0.015	R630	1.6	0.100	0.160	63	78.75
80	0.024	R630	1.6	0.159	0.254	100	125
100	0.037	R630	1.6	0.254	0.407	160	200
125	0.057	R630	1.6	0.397	0.635	250	312.5
150	0.089	R630	1.6	0.635	1.016	400	500
200	0.128	R630	1.6	1.000	1.600	630	787.5
250	0.227	R630	1.6	1.580	2.540	1000	1250
300	0.354	R630	1.6	2.540	4.070	1600	2000

Flow Parameters (Accuracy: Class 2, Dynamic Range: R800)

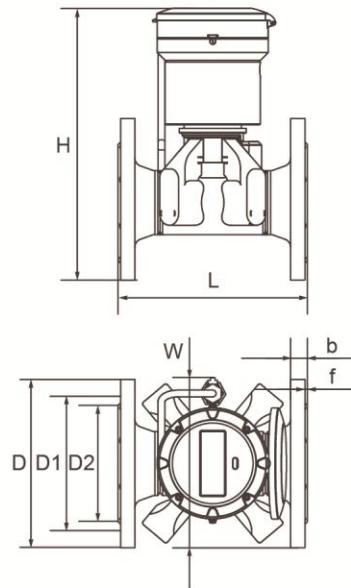
Nominal Diameter (mm)	Min.cutoff	Q ₃ /Q ₁	Q ₂ /Q ₁	Minimum Q ₁ (m ³ /h)	Transitional Q ₂ (m ³ /h)	Permanent Q ₃ (m ³ /h)	Overload Q ₄ (m ³ /h)
50	0.010	R800	1.6	0.050	0.080	40	50
65	0.015	R800	1.6	0.07875	0.126	63	78.75
80	0.024	R800	1.6	0.125	0.200	100	125
100	0.037	R800	1.6	0.200	0.320	160	200
125	0.057	R800	1.6	0.3125	0.500	250	312.5
150	0.089	R800	1.6	0.500	0.800	400	500
200	0.128	R800	1.6	0.7875	1.260	630	787.5
250	0.227	R800	1.6	1.250	2.000	1000	1250
300	0.354	R800	1.6	2.000	3.200	1600	2000

Dimension (mm):
Plastic Casing

Metal Casing


Plastic Casing (Meter with pressure sensor)



Metal Casing (Meter with pressure sensor)



Without NB-IoT Network Interface:



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NB-IoT Network Interface:

Nominal Diameter (mm)	Pressure (MPa)	Outside Diameter D	Flange Hole D1	Sealing Surface D2	Sealing Surface f	Flange Thickness b	No. of Flange Hole n	Diameter of Flange Hole d	Length L	Max. Width W	Height for Plastic Casing H	Height for Metal Casing H	Weight (kg)
50	1.0	φ 165	φ 125	φ 102	3	20	4	φ 18	200	186	316	310	9.9
	1.6												
	2.5												
65	1.0	φ 185	φ 145	φ 122	3	20	4	φ 18	200	196	302	306	12.0
	1.6												
	2.5												
80	1.0	φ 200	φ 160	φ 138	3	20	8	φ 18	225	203	319	323	13.5
	1.6												
	2.5												
100	1.0	φ 220	φ 180	φ 158	3	22	8	φ 18	250	220	335	339	16.2
	1.6												
	2.5												
125	1.0	φ 250	φ 210	φ 188	3	22	8	φ 18	250	250	361	365	19.5
	1.6												
	2.5												
150	1.0	φ 285	φ 240	φ 212	3	24	8	φ 22	300	285	390	394	26.7
	1.6												
	2.5												
200	1.0	φ 340	φ 295	φ 268	3	24	8	φ 22	350	340	433	437	35.6
	1.6												
	2.5												
250	1.0	φ 395	φ 350	φ 320	3	26	12	φ 22	450	395	491	495	57.4
	1.6	φ 405	φ 355										
	2.5	φ 425	φ 370										
300	1.0	φ 445	φ 400	φ 370	4	26	12	φ 22	500	445	552	561	81.8
	1.6	φ 460	φ 410	φ 378									
	2.5	φ 485	φ 430	φ 395									

- ※ 1. "Max. Width "in table refers to dimension of meter with pressure sensor.
- 2. Weight in table is for reference, which is under standard plastic case and 1.6MPa condition.
- 3. Length " L " could be customized.

Technical parameters of pressure transmitter in meter:

Performance	Technical parameters
Pressure measurement range	0~1.6MPa or 0~2.5MPa
Pressure overload ability	measurement range x 1.5
Pressure accuracy	±0.5%FS



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SCL-6 | D6 Standard Ultrasonic Water Meter

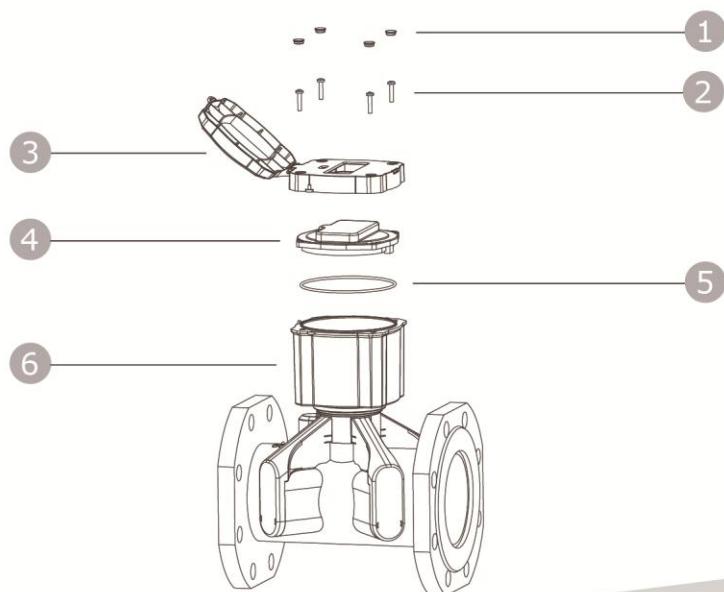
Scope of Application

Suitable for precise measurement of urban water supply pipeline and main meter on household metering, and also multiple no-power supply industrial fields.

Features:

- Online self-verification function.
- Large dynamic range R400, reached the precise measurement of minimum flowrate.
- 4-channel design for all series, dual-fracture surface, improve the accuracy under complex flow regime.
- Integrated flowrate and pressure measurement, able to reach the demand of DMA monitoring.
- Attached water temperature measurement function.
- Battery powered, micro power consumption, measurement cycle 1s, one battery can work continuously over 10 years.
- Low starting flowrate (corresponding velocity 0.002m/s) .
- Multiple transmission methods, RS-485, M-Bus, LoRa, Pulse output and NB-IoT.
- The stainless steel pipe can be recycled and reduce the user cost.
- Energy conservation and environmental protection, no casting, no pollution and also material saving.
- Quality seamless stainless steel cable, and precision machining by robot workshop.
- Smart manufacturing to satisfy flexible customization for customer.

No.	Name
1	Sealing
2	Connecting Screw
3	Upper Casing Parts
4	Measuring Mechanism Sets
5	Seal Ring
6	Pipe Section and Transducer Sets





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Technical Parameters:

Item	Parameter								
Medium	Water or other homogeneous fluids in full pipe flow								
Accuracy	Class 1		Class 2						
Dynamic Range	R250	R315	R250	R315	R400				
Nominal Diameter	DN65~DN300								
Maximum Working Pressure	1.0Mpa/1.6Mpa/2.5Mpa (Standard is 1.6Mpa, only DN200 is 1.0Mpa)								
Pressure Loss	Δp 10								
Climatic Environment	-25°C~+55°C, ≤100%RH								
Rating of Water Temp.	T30、T50、T70, default T30								
Rating of Upstream Flow Field Sensitivity	U5								
Rating of Downstream Flow Field Sensitivity	D3								
Category of Climate & Mechanical Environment Conditions	O								
Class of Electromagnetic Compatibility	E2								
Operation	Magnetic induction key								
Display Indication	LCD, 10-digital+prompting character (word height: 12mm)								
Values Displayed	Accumulated flow rate (m³), Instantaneous flow rate (m³/h), Water temperature (°C), Accumulated effective running time (h), Date (YY/MM/DD), Time (hh/mm/ss), Software version								
Display Range	Accumulated flowrate : -199999999.9m³ ~+199999999.9m³ Instantaneous flowrate: -9999.999m³/h ~+9999.999m³/h								
Data Communication	Photoelectric Interface	Baudrate: 2400bps, Protocol: EN13757							
	RS-485/M-Bus	Baudrate: 2400bps, 4800bps, 9600bps (selectable), default: 2400bps; Transmission distance: ≤1200m Protocol: EN13757, Huizhong, CJ/T-188, Modbus (selectable), default: Huizhong							
	Wireless Communication	Radio Frequency, transmission distance: 2000m(open space), frequency band: 470MHz~510MHz Narrow Band Internet of Things (NB-IoT)							
	Pulse output	Passive output. Voltage: Maximum DC24V; Current: Maximum 50mA							
Data Storage	Storage by EEPROM of cumulative flowrate and effective running time. (Data can be saved for a period of 100 years after power failure) Automatic storage of the data above for past 24 months								
Measuring Cycle	1 second								
Power Supply	Battery DC3.6V (One battery can work continuously over 10 years ^{Note})								
	DC10V~DC36V, ≥20mA (Specify while ordering)								
Power Consumption	Flow measurement	<0.4mW							
	Wireless Communication	Average power consumption <0.3mW, Maximum current <1A							
Protection Class	IP68								
For the non-integral meter version, the cable connecting the measuring unit and display is in a standard length of 1.5m. For cable length other than this, please specify on ordering.									

Note: All parameters are standard basis, products with NB-IoT do not support dual-power.
Weak signal strength, repeat of data transmission, high alarm frequency will shorten battery life.



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Flow Parameters (Accuracy: Class 1, Dynamic Range: R250)

Nominal Diameter (mm)	Min.cutoff	Q ₃ /Q ₁	Q ₂ /Q ₁	Minimum Q ₁ (m ³ /h)	Transitional Q ₂ (m ³ /h)	Permanent Q ₃ (m ³ /h)	Overload Q ₄ (m ³ /h)
65	0.024	R250	1.6	0.400	0.640	100	125
80	0.037	R250	1.6	0.640	1.024	160	200
100	0.057	R250	1.6	1.000	1.600	250	312.5
125	0.089	R250	1.6	1.000	1.600	250	312.5
150	0.128	R250	1.6	1.600	2.560	400	500
200	0.227	R250	1.6	2.520	4.032	630	787.5
250	0.354	R250	1.6	4.000	6.400	1000	1250
300	0.510	R250	1.6	6.400	10.240	1600	2000

Flow Parameters (Accuracy: Class 1, Dynamic Range: R315)

Nominal Diameter (mm)	Min.cutoff	Q ₃ /Q ₁	Q ₂ /Q ₁	Minimum Q ₁ (m ³ /h)	Transitional Q ₂ (m ³ /h)	Permanent Q ₃ (m ³ /h)	Overload Q ₄ (m ³ /h)
65	0.025	R315	1.6	0.318	0.508	100	125
80	0.037	R315	1.6	0.508	0.813	160	200
100	0.057	R315	1.6	0.794	1.270	250	312.5
125	0.089	R315	1.6	0.794	1.270	250	312.5
150	0.128	R315	1.6	1.270	2.032	400	500
200	0.227	R315	1.6	2.000	3.200	630	787.5
250	0.353	R315	1.6	3.175	5.080	1000	1250
300	0.510	R315	1.6	5.080	8.127	1600	2000

Flow Parameters (Accuracy: Class 2, Dynamic Range: R250)

Nominal Diameter (mm)	Min.cutoff	Q ₃ /Q ₁	Q ₂ /Q ₁	Minimum Q ₁ (m ³ /h)	Transitional Q ₂ (m ³ /h)	Permanent Q ₃ (m ³ /h)	Overload Q ₄ (m ³ /h)
50	0.015	R250	1.6	0.252	0.4032	63	78.75
65	0.025	R250	1.6	0.400	0.640	100	125
80	0.037	R250	1.6	0.640	1.024	160	200
100	0.057	R250	1.6	1.000	1.600	250	312.5
125	0.089	R250	1.6	1.000	1.600	250	312.5
150	0.128	R250	1.6	1.600	2.560	400	500
200	0.227	R250	1.6	2.520	4.032	630	787.5
250	0.353	R250	1.6	4.000	6.400	1000	1250
300	0.510	R250	1.6	6.400	10.240	1600	2000

Flow Parameters (Accuracy: Class 2, Dynamic Range: R315)

Nominal Diameter (mm)	Min.cutoff	Q ₃ /Q ₁	Q ₂ /Q ₁	Minimum Q ₁ (m ³ /h)	Transitional Q ₂ (m ³ /h)	Permanent Q ₃ (m ³ /h)	Overload Q ₄ (m ³ /h)
50	0.015	R315	1.6	0.200	0.320	63	78.75
65	0.025	R315	1.6	0.318	0.508	100	125
80	0.037	R315	1.6	0.508	0.813	160	200
100	0.057	R315	1.6	0.794	1.270	250	312.5
125	0.089	R315	1.6	0.794	1.270	250	312.5
150	0.128	R315	1.6	1.270	2.032	400	500
200	0.227	R315	1.6	2.000	3.200	630	787.5
250	0.353	R315	1.6	3.175	5.080	1000	1250
300	0.510	R315	1.6	5.080	8.127	1600	2000



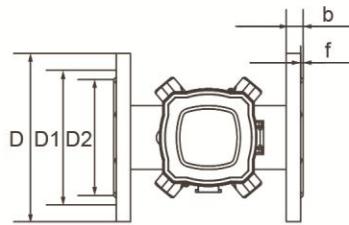
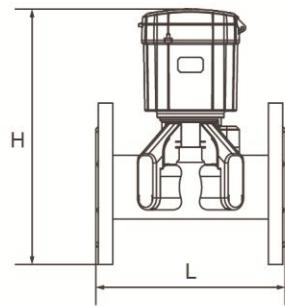
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Flow Parameters (Accuracy: Class 2, Dynamic Range: R400)

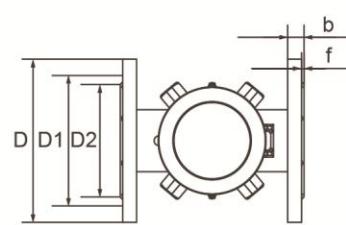
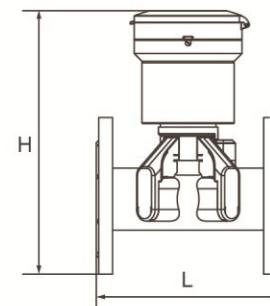
Nominal Diameter (mm)	Min.cutoff	Q ₃ /Q ₁	Q ₂ /Q ₁	Minimum Q ₁ (m ³ /h)	Transitional Q ₂ (m ³ /h)	Permanent Q ₃ (m ³ /h)	Overload Q ₄ (m ³ /h)
50	0.015	R400	1.6	0.1575	0.252	63	78.75
65	0.025	R400	1.6	0.250	0.400	100	125
80	0.037	R400	1.6	0.400	0.640	160	200
100	0.057	R400	1.6	0.625	1.000	250	312.5
125	0.089	R400	1.6	0.625	1.000	250	312.5
150	0.128	R400	1.6	1.000	1.600	400	500
200	0.227	R400	1.6	1.575	2.520	630	787.5
250	0.353	R400	1.6	2.500	4.000	1000	1250
300	0.510	R400	1.6	4.000	6.400	1600	2000

Dimension (mm):

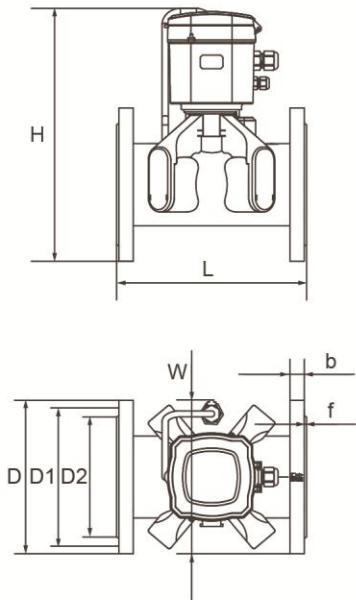
Plastic Casing



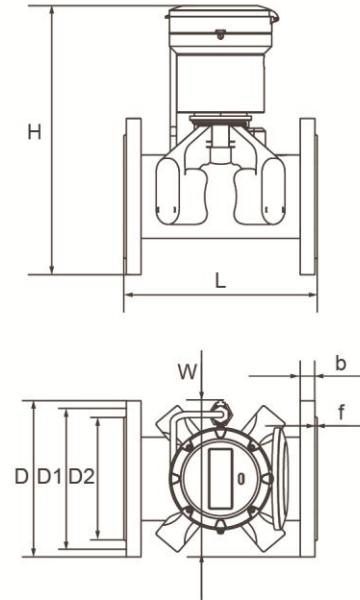
Metal Casing



Plastic Casing (Meter with pressure sensor)



Metal Casing (Meter with pressure sensor)



Without NB-IoT Network Interface:

Nominal Diameter (mm)	Pressure (MPa)	Outside Diameter D	Flange Hole D1	Sealing Surface D2	Sealing Surface f	Flange Thickness b	No. of Flange Hole n	Diameter of Flange Hole d	Length L	Max. Width W	Height for Plastic Casing H	Height for Metal Casing H	Weight (kg)
50	1.0	φ 165	φ 125	φ 102	3	20	4	φ 18	200	186	278	297	9.0
	1.6												
	2.5												
65	1.0	φ 185	φ 145	φ 122	3	20	4	φ 18	200	196	293	312	10.7
	1.6												
	2.5												
80	1.0	φ 200	φ 160	φ 138	3	20	8	φ 18	225	203	311	330	11.7
	1.6					24							
	2.5					24							
100	1.0	φ 220	φ 180	φ 158	3	22	8	φ 18	250	220	329	348	14.8
	1.6					26							
	2.5					26		φ 22		235	333	352	
125	1.0	φ 250	φ 210	φ 188	3	22	8	φ 18	250	250	358	377	17.6
	1.6					28							
	2.5					28		φ 26		270	364	383	
150	1.0	φ 285	φ 240	φ 212	3	24	8	φ 22	300	285	388	407	23.5
	1.6					30							
	2.5					30		φ 26		300	394	413	
200	1.0	φ 340	φ 295	φ 268	3	24	8	φ 22	350	340	448	467	39.2
	1.6					26							
	2.5					32		φ 26		360	455	474	
250	1.0	φ 395	φ 350	φ 320	3	26	12	φ 22	400	395	527	536	61.6
	1.6					29							
	2.5					35		φ 26		405	532	541	
300	1.0	φ 445	φ 400	φ 370	4	26	12	φ 22	450	425	542	551	84.1
	1.6					32							
	2.5					38		φ 30		485	598	607	



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NB-IoT Network Interface:

Nominal Diameter (mm)	Pressure (MPa)	Outside Diameter D	Flange Hole D1	Sealing Surface D2	Sealing Surface f	Flange Thickness b	No. of Flange Hole n	Diameter of Flange Hole d	Length L	Max. Width W	Height for Plastic Casing H	Height for Metal Casing H	Weight (kg)
50	1.0	$\phi 165$	$\phi 125$	$\phi 102$	3	20	4	$\phi 18$	200	186	293	297	9.2
	1.6												
	2.5												
65	1.0	$\phi 185$	$\phi 145$	$\phi 122$	3	20	4	$\phi 18$	200	196	308	312	10.9
	1.6												
	2.5					22	8						
80	1.0	$\phi 200$	$\phi 160$	$\phi 138$	3	20	8	$\phi 18$	225	203	326	330	11.9
	1.6												
	2.5					24							
100	1.0	$\phi 220$	$\phi 180$	$\phi 158$	3	22	8	$\phi 18$	250	220	344	348	15.0
	1.6												
	2.5					26							
125	1.0	$\phi 250$	$\phi 210$	$\phi 188$	3	22	8	$\phi 18$	250	250	373	377	17.8
	1.6												
	2.5					28							
150	1.0	$\phi 285$	$\phi 240$	$\phi 212$	3	24	8	$\phi 22$	300	285	403	407	23.7
	1.6												
	2.5					30							
200	1.0	$\phi 340$	$\phi 295$	$\phi 268$	3	24	8	$\phi 22$	350	340	463	467	39.4
	1.6												
	2.5					26							
250	1.0	$\phi 395$	$\phi 350$	$\phi 320$	3	26	12	$\phi 22$	400	395	542	536	61.8
	1.6												
	2.5					29							
300	1.0	$\phi 445$	$\phi 400$	$\phi 370$	4	26	12	$\phi 22$	450	445	593	587	84.3
	1.6												
	2.5					32							
						38	16	$\phi 30$					

- ※ 1. "Max. Width" in table refers to dimension of meter with pressure sensor.
 2. Weight in table is for reference, which is under standard plastic case and 1.6MPa condition.
 3. Length "L" could be customized.

Technical parameters of pressure transmitter in meter:

Performance	Technical parameters
Pressure measurement range	0~1.6MPa or 0~2.5MPa
Pressure overload ability	measurement range x 1.5
Pressure accuracy	±0.5%FS



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SCL-76 Insertion Ultrasonic Flowmeter

Scope of Application:

SCL-76 is widely used in petroleum industry, chemical industry, electric power station, and water supply /drainage facilities, especially for industrial field with no power supply environment.



Features:

- Nominal diameter: DN100~DN2000.
- Provides sustained accuracy within $\pm 0.5\%$.
- Integrated mechanical design with protection class of IP68.
- Mounting in any installation position without the flow stop.
- Battery powered, with lifetime over 10 years (measuring cycle: 1s).
- Ideal for difficult circumstances without power supply.
- Optional with single-channel or multi-channel transducer.
- Communication interface: Photoelectronic Interface, RS-485, (4-20)mA+HART.

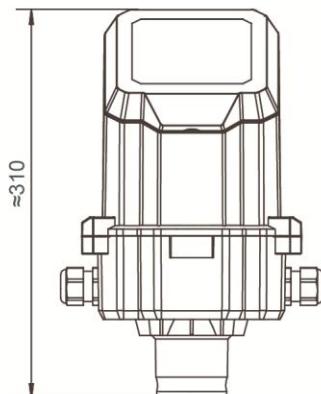
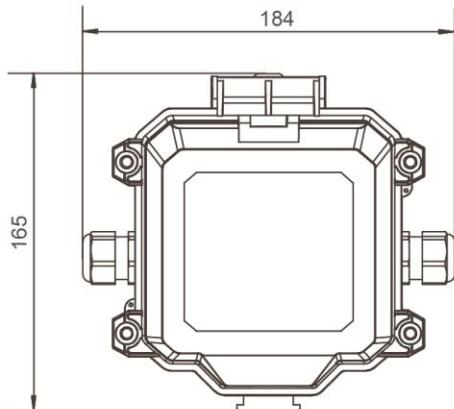


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Technical Parameters:

Item	Parameter						
Number of Sonic Channels	2/4-channels (Selectable)						
Nominal Diameter, mm	DN100~DN2000						
Accuracy	Class 0.5						
Medium	Water or other homogeneous fluids in full pipe flow						
Adaptable Pipe Material	Material like steel, cast iron, cement, PE, and PVC etc, which pipeline can be drilled for mounting						
Adaptable Flow rate	0m/s~12m/s						
Temperature of Liquid Measured	Normal-temperature version: 0°C~50°C, High-temperature version: 0°C~130°C						
Max.Pressure-bearing Capacity of the Transducer	≤2MPa						
Type of Transducer	Insertion-type						
Climatic Environment	Temperature: -10°C~+45°C; Relative humidity: ≤85% (For special environment, please specify on ordering)						
Operation	Magnetic induction key						
Display Indication	LCD, 9-digital+prompting character (word height: 8.5mm)						
Values Displayed	Instantaneous flowrate (m³/h), Accumulated flowrate (m³) Accumulated effective running time (h), Date (Year/Month/Date), Time (Hour/Minute/Second) Signal strength indication, Battery power, Flow direction, etc						
Range of Display	Accumulated flowrate: -199999999m³~+199999999m³, Instantaneous flowrate: -999999.9m³/h~+999999.9m³/h						
Data Communication	<table border="1"> <tr> <td>Photoelectronic Interface</td> <td>Baudrate: 2400bps, EN13757 protocol</td> </tr> <tr> <td>RS-485</td> <td>Baudrate: 2400bps、4800bps、9600bps selectable , default: 2400bps , Transmission distance≤1200m EN13757 protocol, Huizhong protocol, Modbus protocol selectable , default: Huizhong protocol</td> </tr> <tr> <td>(4-20)mA+HART</td> <td>Output: Passive output, supply voltage: DC (18~30) V, electrical load: (250~500)Ω</td> </tr> </table>	Photoelectronic Interface	Baudrate: 2400bps, EN13757 protocol	RS-485	Baudrate: 2400bps、4800bps、9600bps selectable , default: 2400bps , Transmission distance≤1200m EN13757 protocol, Huizhong protocol, Modbus protocol selectable , default: Huizhong protocol	(4-20)mA+HART	Output: Passive output, supply voltage: DC (18~30) V, electrical load: (250~500)Ω
Photoelectronic Interface	Baudrate: 2400bps, EN13757 protocol						
RS-485	Baudrate: 2400bps、4800bps、9600bps selectable , default: 2400bps , Transmission distance≤1200m EN13757 protocol, Huizhong protocol, Modbus protocol selectable , default: Huizhong protocol						
(4-20)mA+HART	Output: Passive output, supply voltage: DC (18~30) V, electrical load: (250~500)Ω						
Data storage(EEPROM)	Storage by EEPROM of cumulative flowrate and effective running time. (Data can be saved for a period of 100 years after power failure) Automatic storage of historic monthly accumulated flowrate and effectively effective running time of past 24 months						
Measuring Cycle	1 Second						
Power Supply	Battery DC3.6V (One battery can work continuously over 10 years)						
Power Consumption	<0.4mW						
Protection Class	IP68						

Dimension(mm):



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