

# SC7 Series Ultrasonic Water Meters

PRODUCT DATA



## Features

- Residential potable water consumption metering
- Temperature compensation for cold water as well as hot water up to 50°C
- No moving parts. Wear-free ultrasonic technology
- Durable, proven BRASS sensor body. Solves the challenges in harsh environments
- Excellent long-term stability with consistent performance  
Accuracy does not degrade over time
- Leakage detection can be customized
- Temperature inspection and low temperature alarm
- Does not measure entrained air in pipe
- Bi-directional flow
- Low pressure drop
- Free positioning for installation
- Large LCD display
- More than 10 year battery life
- IP 68 water-proof
- MID / ISO 4064:2014
- Data Logger with 480 daily totals, 36 monthly totals and 16 years totals
- Wide communication possibilities
- Variety of alarm functions for low battery and system error

## Application

- Revenue metering
- Residential submetering
- Commercial buildings
- Leakage detection
- AMR and billing
- Walk-by/Drive-by metering



## Technical Specifications

Table 1. Dimensions

Nominal diameter	15mm	20mm	25mm	32mm	40mm
L(mm)	165/110 *	190/130/195 *	260/225 *	260/230 *	300/245 *
L1(mm)	97	97	97	97	97
L2(mm)	259/204	294/234/299	380/345	380/350	428/373
H(mm)	91	91	91	128	139
H1(mm)	31	28	25	29	36
W(mm)	90	90	90	90	90
Threads meter	G <sup>3</sup> / <sub>4</sub> B	G1B	G1 <sup>1</sup> / <sub>4</sub> B	G1 <sup>1</sup> / <sub>2</sub> B	G2B
Threaded tailpiece	R <sup>1</sup> / <sub>2</sub>	R <sup>3</sup> / <sub>4</sub>	R1	R1 <sup>1</sup> / <sub>4</sub>	R1 <sup>1</sup> / <sub>2</sub>

Note: \* for the default length

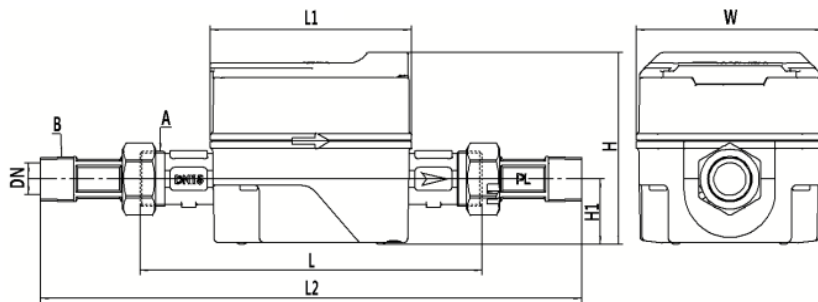


Table 2. Flow rate

Nominal diameter	15mm	20mm	25mm	32mm	40mm
Overload flow rate (Q4) m <sup>3</sup> /h	3.125	5	7.875	12.5	20
Nominal flow rate (Q3) m <sup>3</sup> /h	2.5	4	6.3	10	16
Transitional flow rate (Q2) m <sup>3</sup> /h	0.016	0.026	0.04	0.064	0.102
Minimum flow rate (Q1) m <sup>3</sup> /h	0.01	0.016	0.025	0.04	0.064
Q3/Q1 (R)	250 (R500 in MID is optional)				
Q2/Q1	1.6				
Q4/Q3	1.25				

### Approvals

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ISO4064: 2014, MID B+D

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### Electrical Data

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Power Supply: Battery, 3.6V, Lithium (24VDC option)

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Communication Interface: Infra-red, M-Bus, RS485, BACnet

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Wireless Interface: Wireless M-bus (T1 868MHz), LoRa, NB-IoT

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Output: Pulse

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Electromagnetic Class: Class E1(class E2 optional)

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Volume Display Options: Net (Forward less reverse), Forward only, Forward & reverse alternating

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Max.Flow Reading (m<sup>3</sup>): Forward: 99999.99999, Reverse:-99999.99999

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Alarm: Low battery, Empty pipe, Low water temp, Transducer fault

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### Accuracy / MPE (Maximum Permissible Error)

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MPE according to ISO 4064: 2014 and OIML R49: 2013

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±2% in the range  $Q_2 \leq Q \leq Q_4$  [ $T \leq 30^\circ\text{C}$ ]

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±3% in the range  $Q_2 \leq Q \leq Q_4$  [ $T > 30^\circ\text{C}$ ]

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±5% in the range  $Q_1 \leq Q < Q_2$  [regardless of the temperature range]

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Dynamic Range: 250 (For others please contact Ploumeter)

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### Mechanical Data

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Metrological Class: 2 (according to ISO 4064: 2014 / OIML R49: 2013)

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Environmental Class: C (B optional)

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Environmental Temp: -25 ~ 55°C

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Permissible Flow Temp: 0.1 ~ 50°C (T50, T30)

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Enclosure Protection: IP68

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Integrator Detachable: No

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Pressure: PN16

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### Pressure Loss

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Pressure Loss:  $\Delta p_{40}$  Kpa

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### Installation

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Installation Method: Arbitrary angle

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Straight pipe requirement: U0, D0 (No requirement for the straight pipe upstream and downstream)

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Others: During measurement meter must be completely filled with water

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## Order Specifications

### Base Unit

SC7- DN□ - □ - □

Meter Size	
DN15 / 1/2"	15
DN20 / 3/4"	20
DN25 / 1"	25
DN32 / 1 1/4"	32
DN40 / 1 1/2"	40

### Process Connection

A	Threads meter
B	With threaded tailpiece

### Output Interface Module

MB	M-Bus Module (wired)
485	RS485 / Modbus Module
wMB	M-Bus Module (wireless)
NB	NB-IoT
LR	LoRa
BAC	BACnet

### Example

- SC7-DN15-MB-A stands for the SC7 Series Residential Water Meter base unit of R250 for pipe DN15mm G<sup>3</sup>/<sub>4</sub>B screw.
- M-Bus module (wired) is standard output interface module.

## SC7 Series Bulk Ultrasonic Water Meters

### PRODUCT DATA



### Application

- Any application that requires high accuracy across all flow rates for revenue billing
- Municipal water and water distribution network
- Waste water, irrigation water, reclaim water and storm water
- Commercial buildings: Malls, campus, hospitals, industrial parks, airports, facilities
- Industrial water: Steel, heavy manufacturing plants, power plants, food & beverage
- Leak and tamper detection, DMA (District Metered Area) leakage detection system
- AMR projects which require flow accuracy with low life cycle costs

### Features

- Excellent long-term stability and reliability
- Rugged mechanical design - Submersible (IP68)
- Bi-directional
- Flexible data formats including flow directions, flow rates and volumes
- Temperature inspection and low temperature alarm
- Pressure inspection
- Large LCD, 8 digits display
- 10 years battery lifetime with battery life indication (6 years for meter size above DN300)
- Special body design with Patent to improve R value
- Data Logger with 480 Daily data, 36 Monthly data, and 16 Yearly data
- MID / ISO 4064:2014
- Wide communication possibilities
- Variety of alarm functions for low battery and system error

### Overview

Ploumeter SC7 series Ultrasonic Water Meter is specially designed for municipal, commercial and industrial water metering applications where the demand is challenging and traditional mechanical water meters fail.

Ploumeter SC7 series Ultrasonic Water Meter stands out among the competition due to its rugged design, multi-path technology, wide dynamic range, long last battery with field replaceable feature and extensive AMR functions. The SC7 series is even able to perform reliably when the water has high particulate or the environment is harsh. Both commercial and industrial installations can profit from the advantages of precision, wear-free water flow measurement, operational security and long service life.

## Technical Specifications

**Table 1. Flow rate**

Nominal Size	DN50	DN65	DN80
Body Material	Ductile iron body and Ductile iron flanges		
Overload flow rate Q4 (m <sup>3</sup> /h)	31.25/50	50	78.25
Nominal flow rate Q3 (m <sup>3</sup> /h)	25/40	40	63
Transitional flow rate Q2 (m <sup>3</sup> /h)	0.1/0.16	0.16	0.252
Min flow rate Q1 (m <sup>3</sup> /h)	0.0625/0.1	0.1	0.1575

**Table 2. Flow rate**

Nominal Size	DN100	DN125	DN150	
Body Material	Ductile iron body & flanges	SS body + CS flanges	Ductile iron body & flanges	SS body + CS flanges
Overload flow rate Q4 (m <sup>3</sup> /h)	125	200	312.5	312.5
Nominal flow rate Q3 (m <sup>3</sup> /h)	100	160	250	250
Transitional flow rate Q2 (m <sup>3</sup> /h)	0.4	0.64	1	1
Min flow rate Q1 (m <sup>3</sup> /h)	0.25	0.4	0.625	0.625

**Table 3. Flow rate**

Nominal Size	DN200	DN250	DN300	DN350	DN400	DN500	DN600
Body Material	SS body + CS flanges						
Overload flow rate Q4 (m <sup>3</sup> /h)	500	787.5	1250	1250	2000	3125	5000
Nominal flow rate Q3 (m <sup>3</sup> /h)	400	630	1000	1000	1600	2500	4000
Transitional flow rate Q2 (m <sup>3</sup> /h)	1.6	2.52	4	4	6.4	10	16
Min flow rate Q1 (m <sup>3</sup> /h)	1	1.575	2.5	2.5	4	6.25	10

**Notes:**

SS: Stainless steel

CS: Carbon steel

Q3/Q1 (R): 400 (500/800 can be customized)

Q4/Q3: 1.25

Q2/Q1: 1.6

SC7 SERIES BULK ULTRASONIC WATER METER

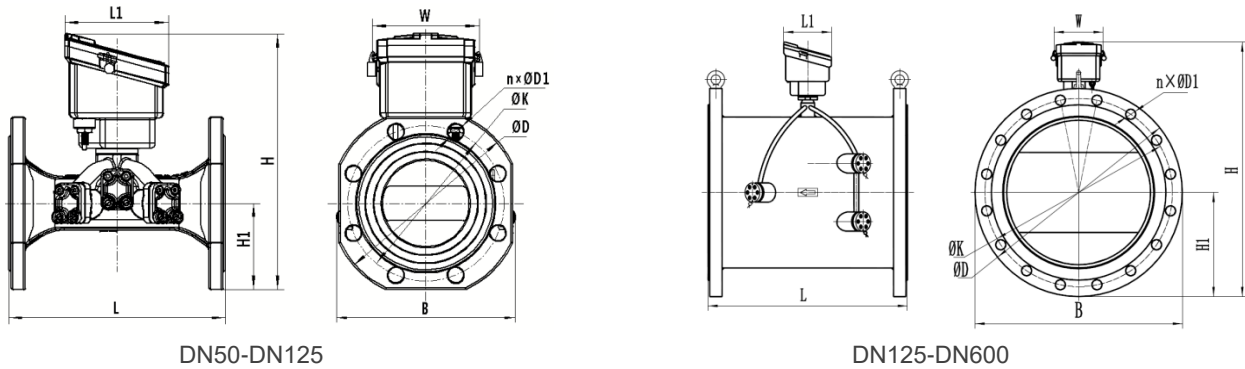


Table 4. Dimensions

Rated Pressure	DN (mm)	L	L1	H	H1	W	B	n×ØD1
PN10/PN16	50	200	120	240	60	123	172	4×Φ18
	65	200	120	260	70	123	190	4×Φ18
	80	225	120	280	90	123	205	8×Φ18
	100	250	120	300	100	123	230	8×Φ18
	125	250	120	380	125	123	250	8×Φ18
	150	300	120	400	130	123	285	8×Φ22
PN10	200	350	120	470	170	123	340	8×Φ22
	250	450	120	525	198	123	395	12×Φ22
	300	500	120	575	223	123	445	12×Φ22
	350	500	120	635	253	123	505	16×Φ22
	400	600	120	690	283	123	565	16×Φ26
	500	600	120	790	335	123	670	20×Φ26
	600	800	120	895	390	123	780	20×Φ30

Notes:

Dimension for reference only, please contact us for exact measure.

PN16/PN25 can be customized

### Approvals

ISO4064, MID B

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### Electrical Data

Power Supply: Battery, 3.6V Lithium (230VAC, 24VDC optional)

Communication Interface: Infra-red, M-Bus, RS485, BACnet

Wireless Interface: Wireless M-bus (T1 868MHz), LoRa, NB-IoT

Output: Pulse, 4-20mA

Electromagnetic Class: Class E1(class E2 optional)

Volume Display Options: Net (Forward less reverse), Forward only, Forward & reverse alternating

Max.Flow Reading (m<sup>3</sup>): 99999999.99999

Alarm: Low battery, Empty pipe, Low water temp, Transducer fault

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### Accuracy / MPE (Maximum Permissible Error)

MPE according to ISO 4064: 2014 and OIML R49: 2013

±2% in the range  $Q2 \leq Q \leq Q4$  [ $T \leq 30^{\circ}\text{C}$ ]

±3% in the range  $Q2 \leq Q \leq Q4$  [ $T > 30^{\circ}\text{C}$ ]

±5% in the range  $Q1 \leq Q < Q2$  [regardless of the temperature range]

Dynamic Range: 400 (standard), 500 (option), (For others please contact Ploumeter)

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### Mechanical Data

Metrological Class: 2 (according to ISO 4064: 2014 / OIML R49: 2013)

Environmental Class: Class C (B optional)

Environmental Temp: -25 ~ 55°C

Permissible Flow Temp: 0.1 ~ 50°C (T50, T30)

Enclosure Protection: IP68

Integrator Detachable: No

Pressure: PN10/PN16 for DN50-DN150, PN10 for DN200-DN600

Channel: Double channels for DN50...DN300, Three channels for DN350...DN600

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### Pressure Loss

Pressure Loss: DN50-DN300:  $\Delta p \leq 25$  Kpa, DN350-DN600:  $\Delta p \leq 10$  Kpa

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### Installation

Installation Method: Arbitrary angle

Straight Pipe Requirement: U3, D0

Others: During measurement meter must be completely filled with water

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## Order Specifications

### Base Unit

SC7- DN□ - □ - □ - □

Meter Size	
DN50	50
DN65	65
DN80	80
DN100	100
DN125	125
DN150	150
DN200	200
DN250	250
DN300	300
DN350	350
DN400	400
DN500	500
DN600	600

### Process Connection

D	DIN Flange (default)
A	ANSI Flange
Z	Others

### Interface Module

MB	M-Bus Module (wired)
485	RS485 / Modbus Module
wMB	M-Bus Module (wireless)
NB	NB-IoT
LR	LoRa
BAC	BACnet

### Output

P	Pulse
A	4-20mA

### Example

- SC7-DN50-P-485-D stands for the SC7 Series Bulk Water Meter base unit of R400 for pipe DN50mm DIN Flange PN16, with pulse and RS485.
- M-Bus module (wired) is standard output interface module.