Water



sonico® NANO

Ultrasonic Smart Water Meter

Your benefits

- Best in class accuracy and repeatability up to R1000
  Accurate low-flow measurements and on-demand leakage notification, reduces nonrevenue water and scarcity water
- Accurate measurements in all possible directions and installation conditions
  High installation flexibility reduces installation costs
- Integrated LoRaWAN over wMBus dual or parallel mode and seamless data integration
  Reduction of network initialization, maintenance, and meter reading costs
- Over-the-air software update to upgrade new features or radio settings
  Sustainable design and extendend product life time

Applications

- Cold water supply systems (water temperature up to 50 °C) requiring reliable and accurate water consumption metering
- Reliable data communication on site (NFC) and integrated radio technology (RF) for mobile or fixed network / smart metering collection systems (AMR)

Properties

- Measuring range up to R1000 and starting flow down to 1 l/h for DN15
- Precise in any type of installation and flow conditions U0/D0
- Extremely low-pressure loss (down to only 0,10 bar for DN15)
- Highly resistant to overload flow rates, resistance to hydraulic shock and unaffected by magnetic fields
- Firmware updates or protocol changes over-the-air or over the NFC interface
- Automatic radio connection via integrated dual mode for 868 MHz LoRaWAN and/or wMBus supporting either parallel or fallback communication modes
- Automated and fast wireless data collection (resolution intervals depends on demand) either by walk-by or drive-by operation
- infin.io back-end solution for data visualization and management
- Open standards and non-proprietary communication protocols
- GWF LIFE software app for local meter readings and configurations over NFC
- End-to-end AES-128 Bit data encryption
- Selectable simulation, standby or operation meter mode
- NFC pulse module for test bench measurements
- Robust and sustainable design mainly made of brass (measuring pipe), durable composite and glass (housing)
- Simple to recycle - no potted battery and electronics

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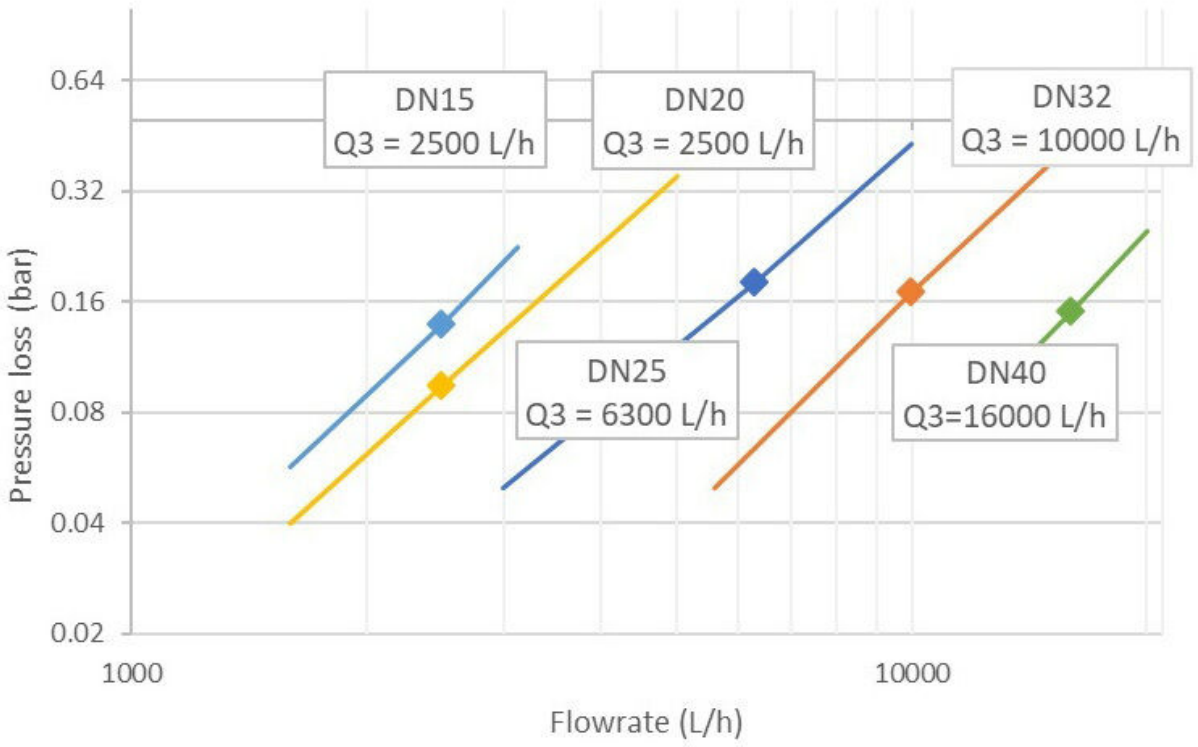
Metrology and radio data

Execution			Q_3 / 1.6	Q_3 / 2.5	Q_3 / 2.5	Q_3 / 4.0	Q_3 / 6.3	Q_3 / 10	Q_3 / 10	Q_3 / 16
Nominal diameter	DN	mm	15	15	20	20	25	25	32	40
Operating pressure (max. admissible pressure)	MAP	bar	16	16	16	16	16	16	16	16
Nominal flow rate	Q_3	m^3/h	1.6	2.5	2.5	4	6.3	10	10	16
Overload flow rate	Q_4	m^3/h	2	3.1	3.1	5	7.9	12.5	12.5	20
Transitional flow rate	Q_2	l/h	5.1	4.0	8.0	6.4	10.1	16	16	25.6
Minimum flow rate	Q_1	l/h	3.2	2.5	5	4	6.3	10	10	16
Starting flow rate		l/h	1	1	2	2	3	3	5	8
Measuring range	R	Q_3/Q_1	500	up to R1000 1]	500	up to R1000 1]	up to R1000 1]	up to R1000 1]	up to R1000 1]	up to R1000 1]
Pressure loss		bar	0.10	0.16	0.16	0.25	0.25	0.40	0.25	0.16
Installation orientation			H, V, H/V (any)							
Smallest readable volume		l	0.01 Test mode							
Maximum register reading		m^3/GAL	9-digits							
Flow disturbance class			U0/D0							
Batteries			1 x integrated 3.6-V-DC-lithium-C-battery							
Protection class / Condensation			IP68 (suitable for open and enclosed installation locations as well as for condensation conditions)							
Electromagnetic environment class			E2							
Mechanical environment class			M3							
Metrological class			Class 2							
Medium temperature range		°C	50 (T50: 0.1 - 50)							
Operating ambient temperature range		°C	-10 / +70							
Storage temperature range		°C	-25 / +70 (>35 max. 4 weeks)							
Battery life time			Up to 16 years (depending on environmental conditions and configuration settings)							
Integrated wMBus C1 /C2 / OMS / 868 MHz			Default transmission interval: 16 s or other intervals depending on configuration and required battery life time							
Integrated LoRaWAN 868 MHz			Class A, LoRaWAN specification V1.0.4 Default transmission interval: Up to 4 times per day at DR0 (SF12). Other intervals depending on configuration and required battery lifetime							
Transmission power			Max. 14 dBm (25 mW)							
Sampling frequency			Up to 4 Hz (1 Hz by default)							

1] Default production calibration R800

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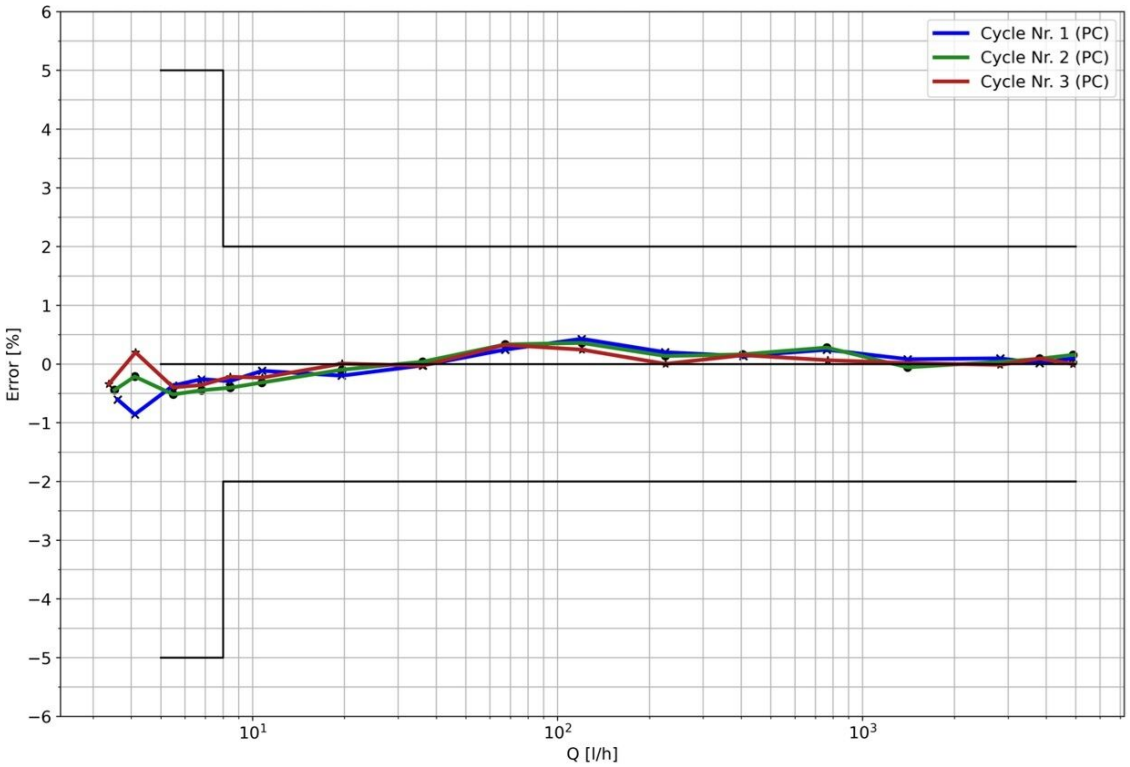
Pressure loss curve



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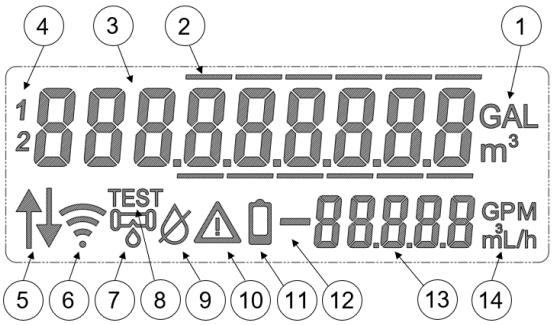
R1000 accuracy measurements

GWF 4D-Technology delivers best in class measuring range and repeatability.



Display information

The display shows beside the WELMEC information the following content:



1. Volume unit indicator (digital)	8. Test mode information
2. Non-billing relevant lines	9. Empty pipe icon
3. Volume	10. System alarm icon
4. Tariff zone	11. Battery level icon
5. Main flow direction (automatic set)	12. Actual flow direction arrow
6. Radio connection status	13. Flow rate
7. Leakage icon	14. Flow rate unit indicator (digital)

The display is updated every second.

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Configurable alerts

The following alerts are displayed on the meter LCD and transmitted over the integrated radio or NFC interface.

Metrology alerts:

- Water leak
- Water burst
- Air in pipe
- Empty pipe
- Reverse flow over configured time or volume
- No flow over configured time or volume
- Tampering
- Ambient temperature too high or low
- Water temperature too high or low
- Low battery

Communication alerts:

- NFC error
- Invalid configuration

Interal data backup and security

The meter has a permanent memory (datalogger). The data points as well as the storage interval are configurable. Example:

History log period	Data logging interval
16 days	1 hour
400 days	1 day
20 years	1 month

Each logging interval backup's the following data:

1. Cumulative, forward and reverse volume
2. All possible active alerts
3. Max. and min. flow rates incl. timestamp
4. Max. and min. temperatures incl. timestamp

Materials and Sustainability

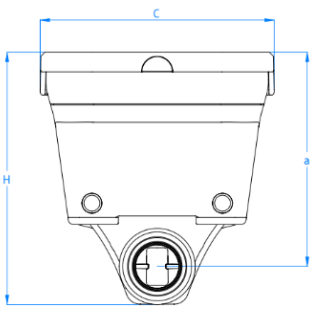
- Meter is made of fully recyclable materials for low CO_2 footprint.
- Meter body made of lead-free eco brass.
- Mineral glass for high hygenic standard.
- Battery is connected by plug to electronics and allows at end of live a proper component separation and recycling.
- Production, packaging and distribution with minimal CO_2 footprint.

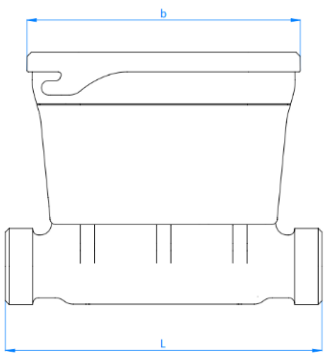
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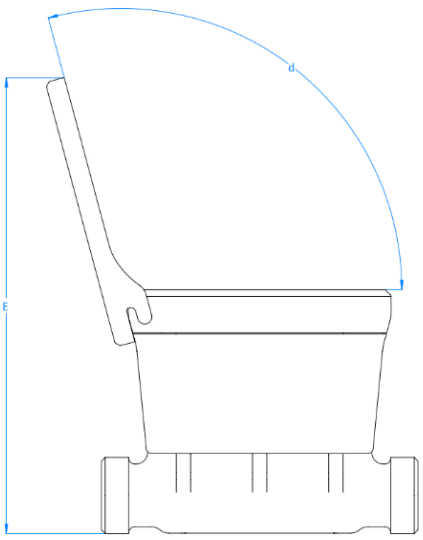
Dimensions and weight

sonico® NANO without NMB-1 (wired M-Bus module)

Size	DN	mm	15	15	15	20	20	25	25	32	40
Nominal flow rate	Q_3	m^3/h	1.6	2.5	2.5	2.5	4.0	6.3	10	10	16
Overall length	L	mm	110 115 160 165 170	110 115 160 165 170	115 170	105 110 115 130 160 165 190 220	105 110 115 130 160 165 190 220	150 160 175 220 260	150 160 175 220 260	150 160 200 220 260	150 200 300
Height	H	mm	87.5	87.5	87.5	94.5	94.5	102.5	102.5	126	135
Housing length	b	mm	95	95	95	95	95	95	95	95	95
Housing width	C	mm	81	81	81	81	81	81	81	81	81
Housing height	a	mm	74	74	74	76.5	76.5	79.5	79.5	100	105
Height incl. lid	E	mm	164	164	164	171	171	173	173	196.5	205.5
Lid opening angle	d	°	105	105	105	105	105	105	105	105	105
Meter thread		Inch	G¾B	G¾B	G⅞B G¾B	G1B	G1B	G1¼B	G1¼B	G1½B	G2B
Adapter thread		Inch	R½	R½	R¾ R½	R¾	R¾	R1	R1	R1¼	R1½
Weight		kg	0.65 0.70 0.75 0.75 0.80	0.65 0.70 0.75 0.75 0.80	0.70 0.80	0.65 0.70 0.70 0.75 0.80 0.80 0.85 0.90	0.65 0.70 0.70 0.75 0.80 0.80 0.85 0.90	1.00 1.05 1.10 1.20 1.30	1.00 1.05 1.10 1.20 1.30	1.40 1.43 1.50 1.60 1.80	1.80 2.00 2.70



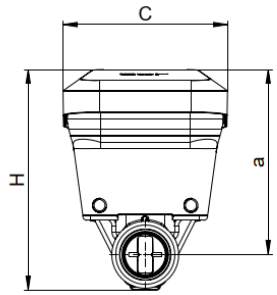


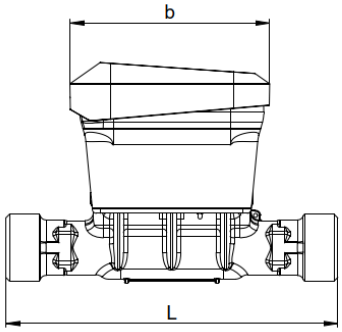


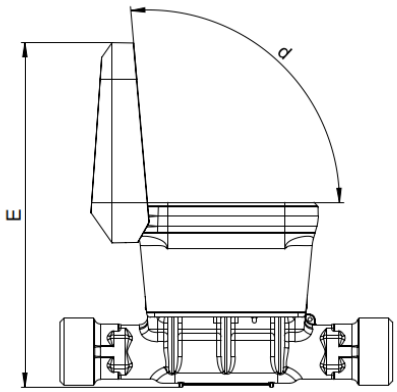
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sonico® NANO with NMB-1 (wired M-Bus module)

Size	DN	mm	15	15	15	20	20	25	25	32	40
Nominal flow rate	Q_3	m^3/h	1.6	2.5	2.5	2.5	4.0	6.3	10	10	16
Overall length	L	mm	110 115 160 165 170	110 115 160 165 170	115 170	105 110 115 130 160 165 190 220	105 110 115 130 160 165 190 220	150 160 175 220 260	150 160 175 220 260	150 160 200 220 260	150 200 300
Height	H	mm	102.5	102.5	102.5	109.5	109.5	117.5	117.5	141	150
Housing length	b	mm	99.5	99.5	99.5	99.5	99.5	99.5	99.5	99.5	99.5
Housing width	C	mm	82	82	82	82	82	82	82	82	82
Housing height	a	mm	89.5	89.5	89.5	92	92	94.5	94.5	115	120
Height incl. lid	E	mm	164	164	164	171	171	173	173	202.5	211.5
Lid opening angle	d	°	95	95	95	95	95	95	95	95	95
Meter thread		Inch	G¾B	G¾B	G⅞B G¾B	G1B	G1B	G1¼B	G1¼B	G1½B	G2B
Adapter thread		Inch	R½	R½	R¾ R½	R¾	R¾	R1	R1	R1¼	R1½
Weight		kg	0.73 0.78 0.83 0.83 0.88	0.73 0.78 0.83 0.83 0.88	0.78 0.88	0.73 0.78 0.78 0.83 0.88 0.88 0.93 0.98	0.73 0.78 0.78 0.83 0.88 0.88 0.93 0.98	1.08 1.13 1.18 1.28 1.38	1.08 1.13 1.18 1.28 1.38	1.48 1.51 1.58 1.68 1.88	1.88 2.08 2.78







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Regulatory and Standard Compliance

Certificates in conformity with:

- 2014/32/EU (MID) (2019)
- OIML R49:2013 (2019)
- EN ISO 4064-1 to 5:2014(E) – Flow meters for cold potable water and hot water
- EC Type Test Certificate TCM 142/24-5958 for cold water applications
- Class E2 (EN ISO 4064:2014)
- Class M3 (Directive 2014/32/EU of 26 February 2014)
- WELMEC 7.2
- RED (2025)
- UL2043

Drinking water approvals:

> ACS
> KTW / W270 (2019)
> WRAS
> NSF-61 d.hot (Only products bearing the NSF Mark on the product, product packaging, and/or documentation shipped with the product are Certified)

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