Water Wastewater



SONICO® EDGE USA

Water measurement

Your benefits

- 4D technology® measures best in class high and low flows (2 inch: Start flow down to 0.02 gpm and up to > 396 gpm).
  Immediate detection of leakages and network errors, suitable for fire flow.
- Maximum installation flexibility.
  Reliable measurements over the full flow range, independent of installation conditions. No straight runs needed even with 90 ° elbows, valves or pumps.
- Accuracy by design: 4D technology® maximizes turndown ratio up to R1000.
  Highest accuracy across the entire flow profile leads to a cutting edge dynamic range.
- Homogeneous 4D-shape measuring pipe with dry sensors and no obstacles or cavities.
  Minimal pressure loss enhances high flow capability and minimizes operating costs. Dry sensors lead to increased meter life-time, reliability and dirt resistance.

Properties

- Minimal pressure loss <8.41 psi
- U0/D0, no need for flow conditioners
- Pressure ratings up to 250 psi
- Bidirectional flow measurement
- Medium temperature + 32.18 °F to + 122 °F
- Degree of protection IP68
- Ambient temperatures from -4 °F up to 158 °F
- Tamper-proof
- Integrated medium temperature measurement
- Air detection
- External power supply
- Drinking water approval NSF-61 D-HOT
- Approved automatic detection of the direction of flow according to WELMEC 7.2 European Legal Metrology

Applications

- Water measurement, e.g. drinking water, filtered waste water or utility water (reservoirs, pumping stations, etc.)
- Suitable for difficult installation conditions such as placement directly before or after 90 ° elbows, valves or pumps
- The time-reverse acoustic principle enables a new level of measuring repeatability unaffected by flow perturbations, electromagnetic or grounding interference and water conductivity

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4D-shape measuring core

Due to the unique 4D-shape pipe design and the implemented 4D technology®, the measurement is independent of the flow profile. Dry sensors guarantee a highly accurate and reliable measurement performance over the entire meter lifetime.

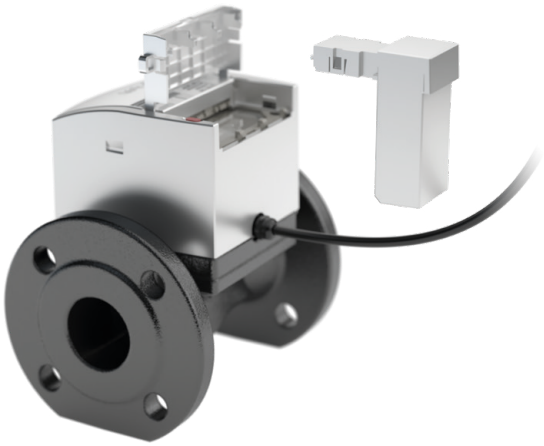


The 4D-shape measuring core allows for installation of the meter directly behind a 90 ° bend or a valve. This flexibility results in minimal installation costs, since no additional on-site work has to be considered.

SONICO® EDGE – in Germany and Switzerland developed and produced. The patented time reverse acoustic principle enables a new level of measuring repeatability unaffected by flow perturbations, electromagnetic or grounding interference and water conductivity.

Ultimate communication

The 4D technology® platform supports a Near Field Communication (NFC) interface that ensure sustained connectivity during the entire product lifetime.



Maximum two of the following available communication module can be attached to the flexible NFC communication interface in parallel:

- Pulse: Pulse output (0.026 gal.; 0.26 gal.; 2.64 gal.; 26.41 gal.; 264.17 gal.) configurable
- Current: 4-20 mA output configurable for uni- or bidirectional measurements.
- ECO E1 or E2: Low Power serial data interface (e.g. to connect a NB-IoT Modem)
- Modbus: Modbus RTU/ASCII protocol with extended flowmeter data

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Technical data as acc. to MID/OIML certification

Size	DN	inch	2	3	4	6	8	10	12
Dynamic	Q_3 / Q_1	R	up to R1000	up to R1000	up to R1000	up to R1000	up to R1000	up to R1000	up to R1000
Starting flow rate	Q_{start}	gpm	0.11	0.22	0.35	0.88	1.32	1.98	2.64
Starting flow velocity	V'_{start}	ft/s	0.02	0.01	0.01	0.02	0.01	0.02	0.02
Minimum flow rate ± 5 %	Q_1	gpm	0.18	0.44	0.70	1.76	2.77	2.77	4.40
Minimum flow velocity ± 5 %	V_1	ft/s	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Transitional flow rate ± 2 %	Q_2	gpm	0.28	0.70	1.13	2.82	4.45	4.4	7.05
Transitional flow velocity ± 2 %	V_2	ft/s	0.04	0.04	0.04	0.05	0.04	0.04	0.04
Nominal flow rate ± 2 %	Q_3	gpm	176.1	440.3	704.5	1761.1	2773.8	2773.8	4402.9
Nominal flow velocity ± 2 %	V_3	ft/s	24.8	27.6	27.4	29.2	27.5	27.5	27.4
Overload flow rate	Q_4	gpm	220.1	550.4	880.6	2201.4	3467.3	3467.4	5503.6
Overload flow velocity	V_4	ft/s	31.1	34.5	34.3	36.5	34.3	34.3	34.3
Maximal flow rate	Q_{max}	gpm	396.3	880.6	1320.9	2641.7	4843.1	4843.1	8805.7
Maximal flow velocity	V_{max}	ft/s	55.9	55.2	51.4	43.9	47.9	47.9	54.8
Maximum water temperature	T	°F	122	122	122	122	86	86	86
Nominal pressure	PN	psi	250	250	250	250	250	250	250

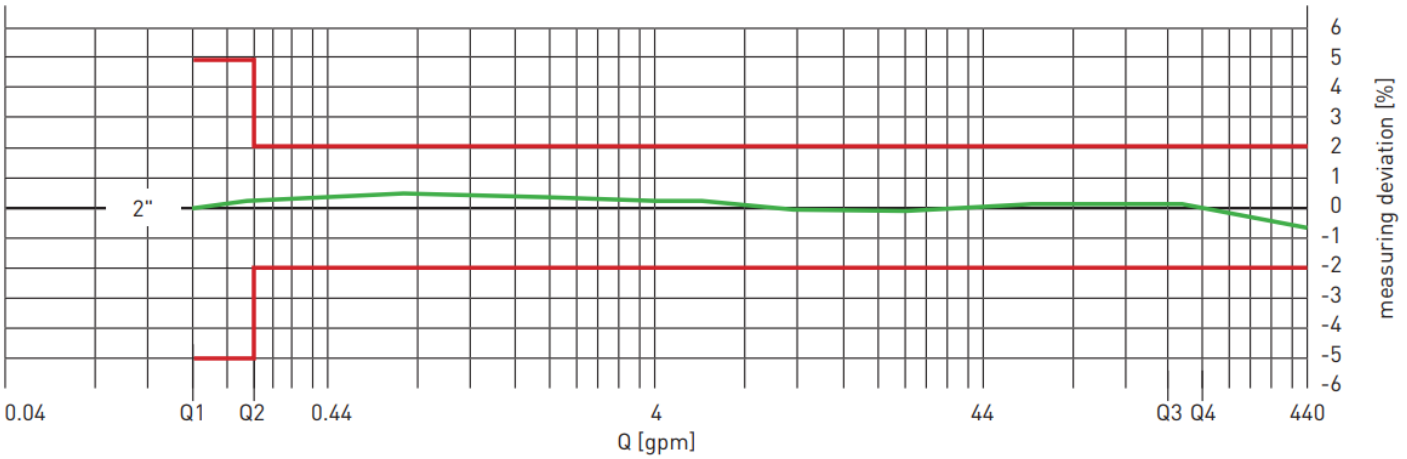
Dynamic Range

Installation direction	Temperature	2 inch	3 inch	4 inch	6 inch	8 inch	10 inch	12 inch
Horizontal	86 °F	R1000	R1000	R1000	R1000	R1000	R1000	R1000
Vertical	86 °F	R630	R630	R630	R630	R630	R630	R630
Horizontal	122 °F	R1000	R1000	R630	R630	R630	R630	R630

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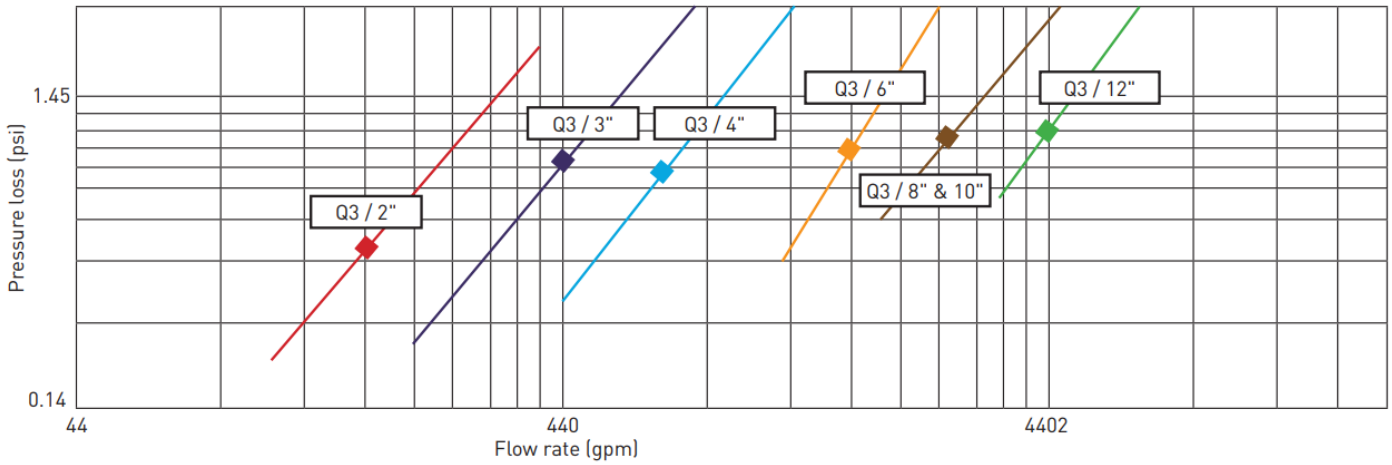
4D technology® measuring accuracy

4D technology® offers a bidirectional turndown ratio R1000 and is extremely robust against changes in the flow profile caused by bends, valves or pumps. The patented time-reverse acoustic principle enables a new level of measuring repeatability independent of flow conditions, electromagnetic or grounding interference and medium conductivity.



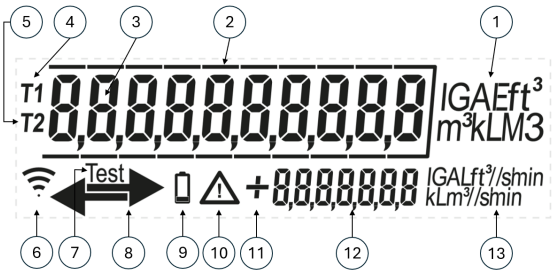
Typical pressure loss curve

The homogeneous 4D-shape measuring pipe ensures minimal pressure loss (< 8.41 psi on 2" @ Q3), offering highest reliability at lowest operational costs.



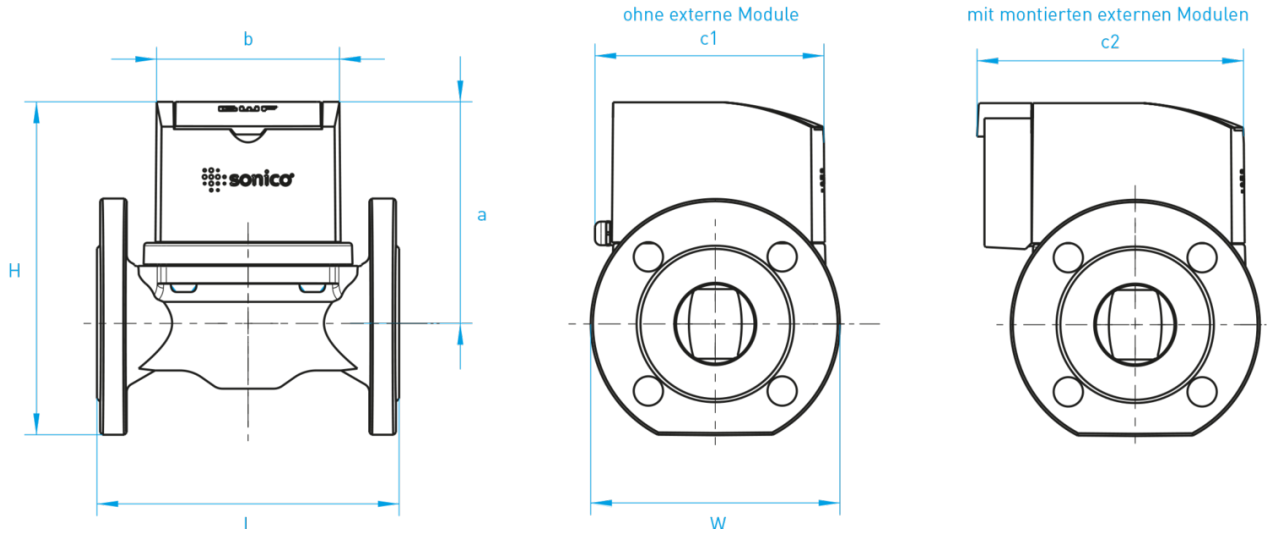
Display Information

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



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Dimensions and weight



Nominal size (mm)	Nominal size (inch)	L (inch)	H (inch)	W (inch)	a (inch)	b (inch)	c1 (inch)	c2 (inch)	Weight (lbs)
50	2	7.87	8.66	6.49	5.80	4.80	5.98	6.96	28.66
65	2,5	7.87	9.29	7.28	6.02	4.80	5.98	6.96	30.87
80	3	7.87	9.84	7.87	6.22	4.80	5.98	6.96	35.27
100	4	9.84	10.63	8.66	6.65	4.80	5.98	6.96	46.29
125	5	9.84	11.22	9.84	6.65	4.80	5.98	6.96	55.12
150	6	11.81	13.23	11.22	7.95	4.80	5.98	6.96	72.75
200	8	13.78	15.55	13.4	9.21	4.80	5.98	6.96	132.27
250	10	17.72	16.73	16.14	9.49	4.80	5.98	6.96	180.78
300	12	19.68	18.70	18.11	9.92	4.80	5.98	6.96	253.53
Connection		Flanges: EN1 092-1 PN 1 6, others upon request							

Materials

Measuring channel:

- KTL- and powder-coated grey cast iron

Measuring adapter:

- KTL- and powder-coated grey cast iron

IP68 sealing:

- Screwed steel frame with glass and flat seal

Housing:

- ASA Luran plastic

Approvals

CE Design-examination Certificate in conformity with:

- 2014/32/EU (MID) (2019)
- OIML R49:2013 (2019)
- MCERTS Class 1

Drinking water approvals:

- KTW / W270 (2019)
- SVGW
- NSF-61
- WRAS

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Power supply

SONICO® EDGE can be powered either mains (with suitable DC adapter) or by an external battery source.

Mains power supply data:

- Input voltage: 24 V DC ± 10 %
- Max. charging current: 250 mA
- The integrated back-up battery (UPS2) ensures autonomous measurements for 24 h if external power supply is interrupted.

[1] The external battery source to be provided by the customer. Examples may include eg solar power or wind turbine.

[2] UPS – Uninterruptible Power Supply

External battery requirements:

- Input voltage: 9-28 V DC
- Nominal current: 30 mA (24 V)
- Max. peak current: 270 mA
- Battery life time: Depends on battery capacity

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