



Water

GWF

GWF4D technology®

SONICO® EDGE

THE WORLD'S MOST ADVANCED
FLOW METER



Your benefits

- > 4D technology® measures best in class high and low flows (DN50: Start flow 0.005 m³/h, > 90 m³/h). **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 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.**
- > Three independent NFC communication slots for local area and wide area connectivity. **Various communication standards supported.**

Features

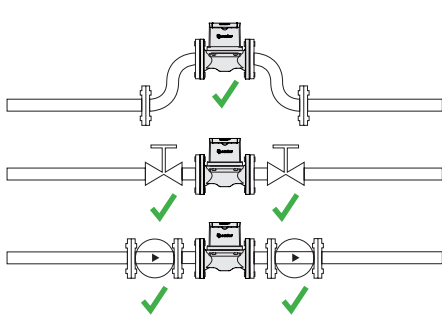
- > Minimal pressure loss < 0.09 bar
- > U0/D0, no need for flow conditioners
- > Pressure ratings up to PN 16
- > Medium temperature range 0.1 °C to + 30 °C
- > Degree of protection IP68
- > Tamper-proof
- > IR interface for firmware update, parameter setting and data readout
- > Integrated data logger incl. min./max. values
- > Integrated medium temperature measurement
- > Air detection
- > External power supply
- > Individual NFC communication slots with easy access plug & play modules
- > Mode 5 and mode 7 data encryption
- > Approved automatic detection of the direction of flow according to WELMEC 7.2 European Legal Metrology
- > Approved firmware update procedure according to WELMEC 7.2 European Legal Metrology

Applications

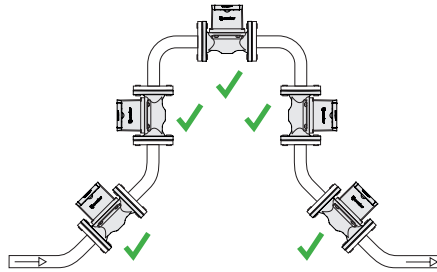
- > Water measurement, e.g. drinking water or utility water (reservoirs, pumping stations, etc.)
- > Suitable for difficult installation conditions such as placement directly before or after 90° elbows, valves or pumps
- > The time reverse acoustic principle enables a new level of measuring repeatability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

Reliable measurements independent of installation condition

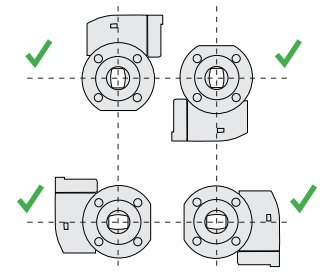
The 4D technology® turndown ratio is independent of the flow profile as well as meter direction or orientation. Stable measurement results:



> Directly after or before 90° elbows, valves or pumps



> In any direction



> In any orientation



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 without straight inlet or outlet runs. 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 three individual Near Field Communication (NFC) slots for exchangeable communication modules that ensure sustained connectivity during the entire product lifetime.

The Near Field Communication interface offers numerous benefits:

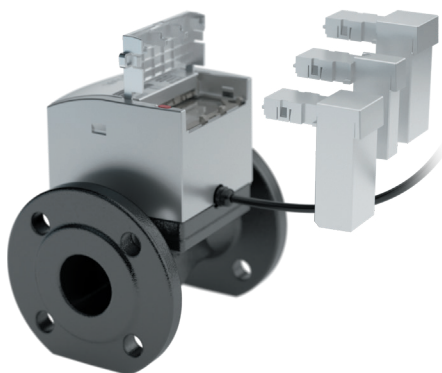
- > Seamless migration to upcoming technologies and standards guarantees investment protection
- > Snap-in module slots – no connectors or cables needed, IP68 proof
- > Possibility for future in-field exchange or upgrade of individual modules
- > Continuous and tamper-proof connection, thoroughly dependable results
- > Optimized data protection due to mode 5 and mode 7 encryption

The modularity of the communication interfaces ensures unlimited flexibility for established communication standards and future requirements:

- > Pulse: 2x pulse output (0.1 l; 1 l; 10 l; 100 l; 1000 l)
- > ECO: Low Power serial data interface [e.g. to connect a NB-IoT Modem]
- > 3. Party: Customer specific module

Additionally, SONICO® EDGE is equipped with an IR interface for data extraction, firmware updates according to WELMEC 7.2¹⁾ and further parameter settings.

¹⁾ WELMEC European Cooperation in Legal Metrology – Software Guide Measuring Instruments Directive 2014/32/EU1

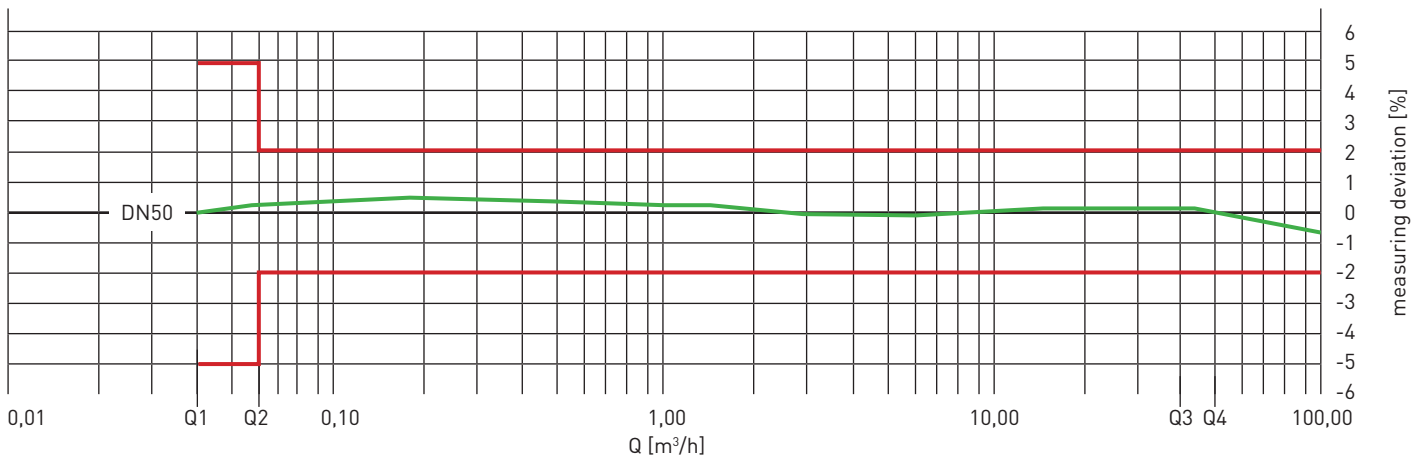


Technical data

Nominal flow rate	DN	mm	50	80	100	150	200	300
Q3 / Q1			1000	1000	1000	1000	1000	1000
Nominal pressure	PN	bar	16	16	16	16	16	16
Nominal flow rate	Q3	m³/h	40	100	160	400	630	1000
	V3	m/s	5.7	5.5	5.7	6.3	8.36	8.39
Overload flow rate	Q4	m³/h	50	125	200	500	787.5	1250
	V4	m/s	7.1	6.9	7.1	7.9	10.45	10.48
Maximal flow rate	Q _{max}	m³/h	90	200	300	600	1100	1500
	V _{max}	m/s	12.7	11.1	10.6	9.4	14.60	12.59
Starting flow rate	Q _{start}	l/h	5	20	40	100	300	500
	V _{start}	m/s	0.0007	0.0011	0.0014	0.0016	0.00398	0.0042
Minimum flow rate ± 5 %	Q1	m³/h	0.04	0.10	0.16	0.40	0.63	1
	V1	m/s	0.0057	0.0055	0.0057	0.0063	0.0084	0.0084
Transitional flow rate ± 2 %	Q2	m³/h	0.064	0.160	0.256	0.640	1	1.6
	V2	m/s	0.009	0.009	0.009	0.010	0.013	0.013
Temperature maximum (medium)	T	°C	30	30	30	30	30	30

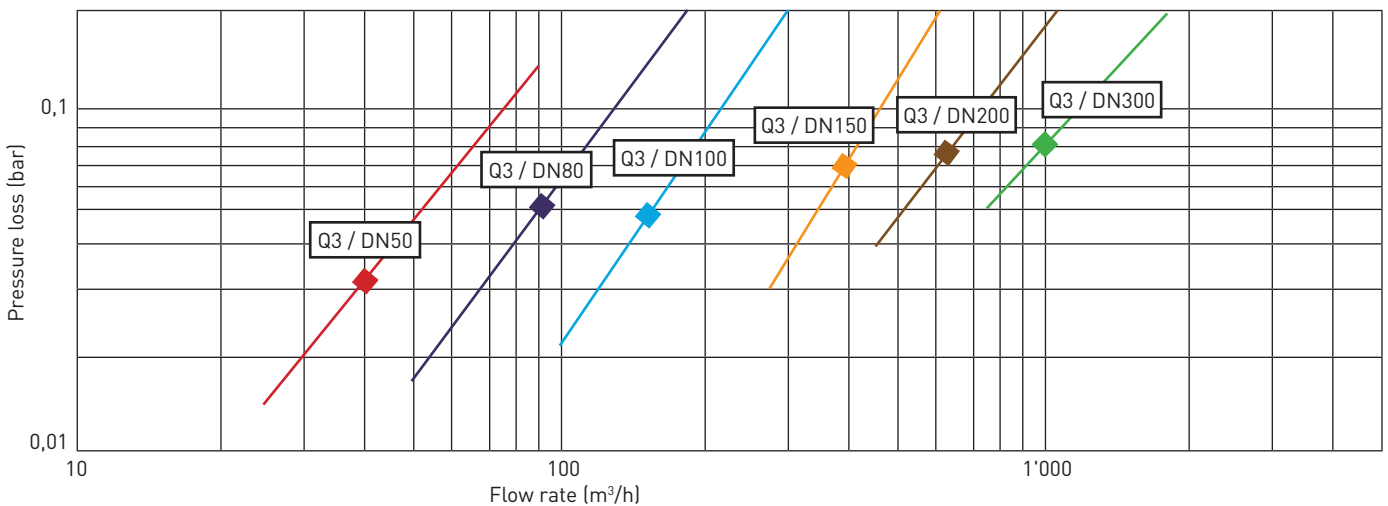
4D technology® measuring accuracy

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

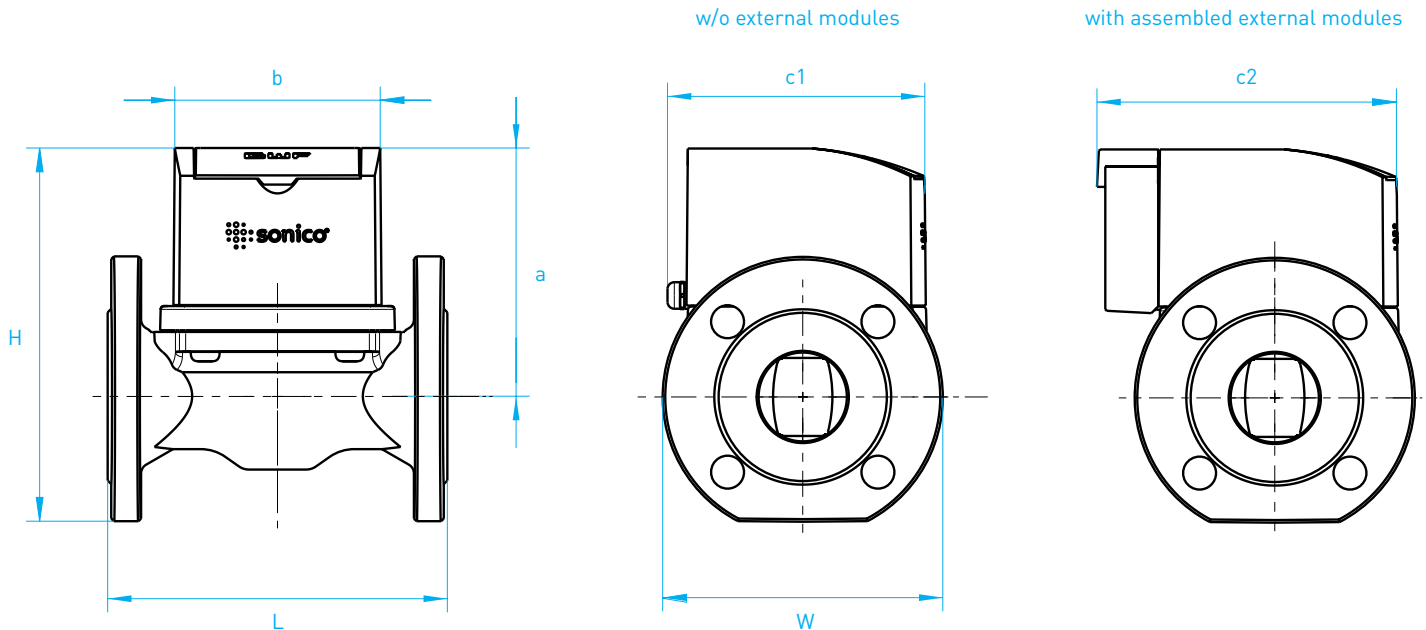


Typical pressure loss curve

The homogeneous 4D-shape measuring pipe ensures minimal pressure loss (< 0.09 bar), offering highest reliability at lowest operational costs.



Dimensions and weight



Nominal size		L (mm)	H (mm)	W (mm)	a (mm)	b (mm)	c1 (mm)	c2 (mm)	Weight (kg)
mm	inch								
50	2	200	220	165	147	122	152	177	13
80	3	200	250	200	158	122	152	177	16
100	4	250	270	220	169	122	152	177	21
150	6	300	336	285	202	122	152	177	33
200	8	350	395	340	234	122	140	177	60
300	12	500	475	460	252	122	140	177	115
Connection		Flanges: EN1092-1 PN 16, 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

Power supply

SONICO® EDGE is powered externally:

- > 24 V DC ± 10%; 200 mA
- > The integrated back-up battery (UPS¹) ensures autonomous measurement for 48 h if external power supply is interrupted.

Approvals

CE Design-examination Certificate in conformity with:

- > 2014/32/EU (MID) (2019)
- > OIML R49:2013 (2019)
 - > Environmental class: M
 - > Electromagnetic class: E2

Drinking water approvals:

- > KTW / W270 (2019)

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