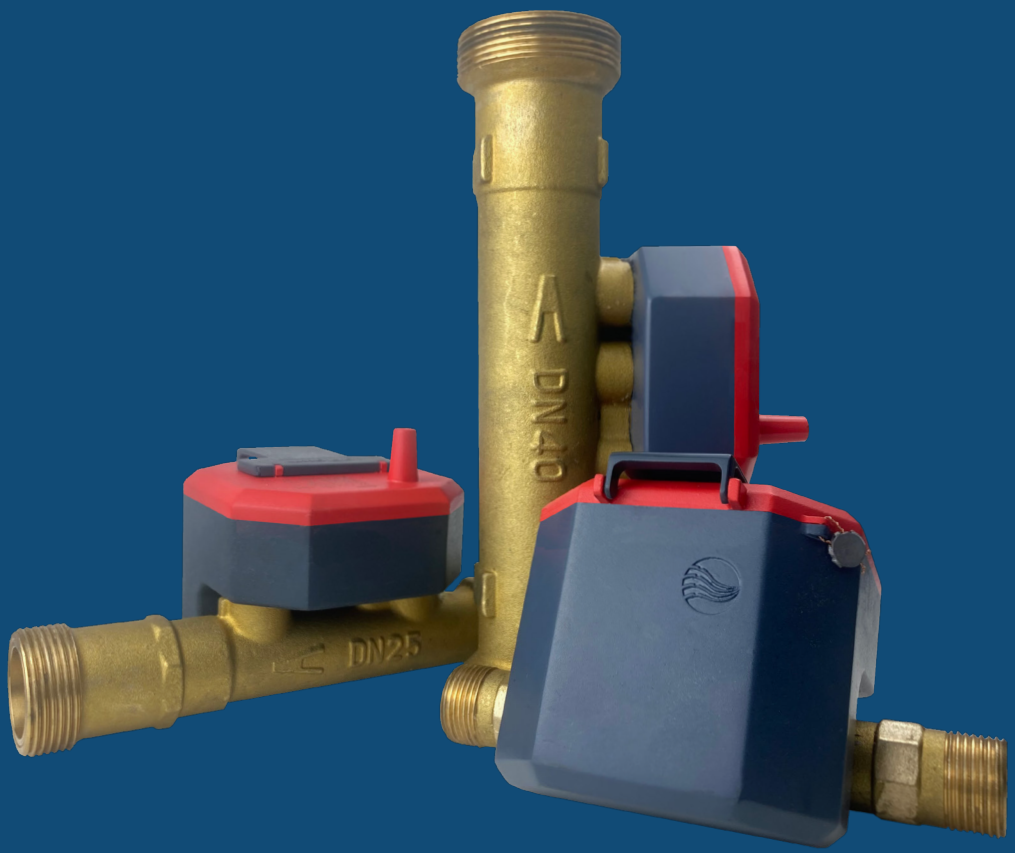
gFlow+

Cetus CT1
Ultrasonic Flowmeter
Technical Datasheet

ACCURATE
RELIABLE
MINIATURE



TÜVRheinland CERTIFIED
Management System ISO 9001:2015
www.tuv.com ID 01 100 1732564

LoRaWAN®

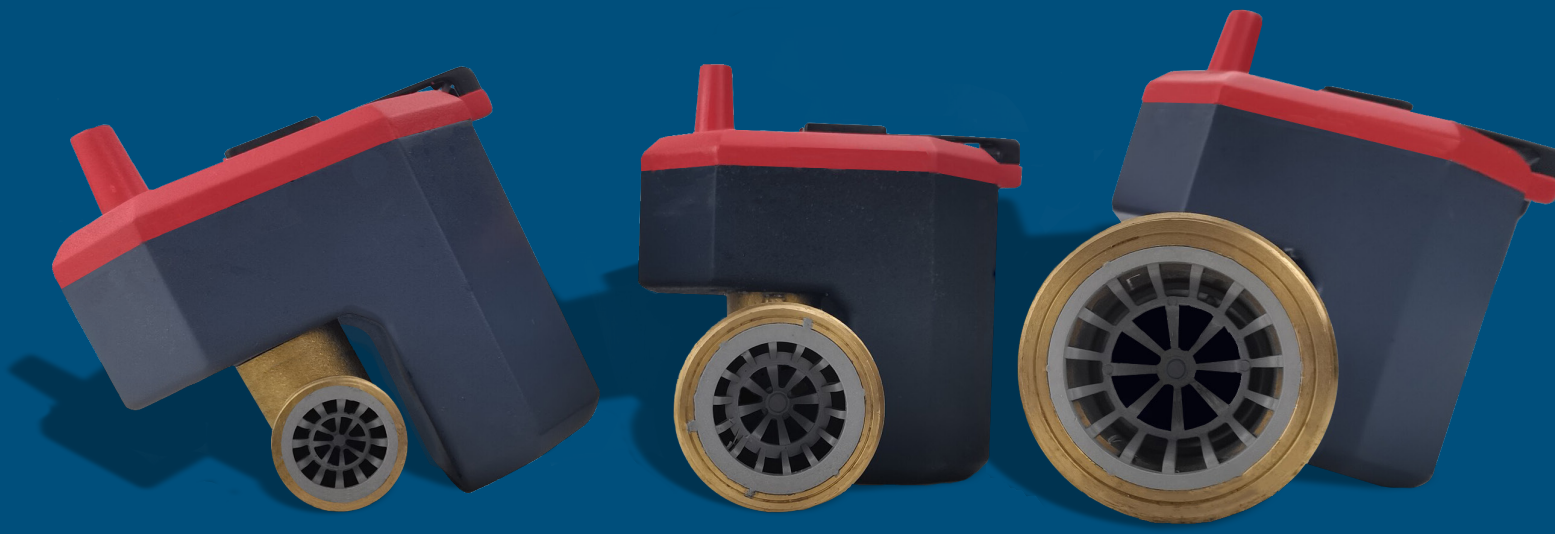
NB-IoT

GFlow+ has been providing intelligent water and energy metering solution since its foundation in 2012. Led by a group of innovative engineers, gFlow+ focuses on creating the entire smart metering system for sustainable applications.

Launched in 2015, the Nautilus series unveiled gFlow+'s cutting-edge measurement and low-power management technology. Combining accuracy, efficiency and reliability, the Nautilus series has reset the market's expectations for a smart water meter. A unique set of smart metering solutions, from flow sensor to analytical software, are provided. This enables property managements, businesses, and utilities to manage water consumption, water quality, and energy consumption all in one platform.

And this is just the beginning. We believe that electric solid-state meter and IoT are the future.

GFLOW+, BE PROACTIVE!



Technical Features

- True solid-state smart meter with no moving parts
- Simple setup and installation
- Tamper-proof for water billing application
- Insensitivity to vibrations and long life time
- IP68 rated design
- Metrelogy conforming to ISO 4064:2014 standards
- Build-in operating valve (optional)

Applications

- Suitable for standard applications in potable water, waste water and gas metering
- Wireless communication in GPRS, NB-IoT, LoraWan protocols
- Automated Meter Reading (AMR)
- District Metering Area (DMA)
- Leakage detection
- Other sustainable applications

Your Benefits

- Less maintenance for the simple-and-tough structure
- Non-moving-part design, no clogging in the pipeline
- Highly-efficient operating system with modular devices
- IP68 protection class, reliably under flooding environmental conditions
- Battery lifetime up to 10 years, no power grid required
- Diagnostic and verification capability
- Automatic data restoration in the internal memory
- No pressure loss

Technical Data and Specifications

Flow Measurement	
Measuring Principle	Flow velocity reverse proportional to transit time
Property of Interest	Flow velocity and volume
Applicable Media	Uniform fluids (liquid and gas)
Measurement Accuracy	Class 2 under ISO 4064
Flowrate Unite	L/min, L/s, m^3/min, m^3/hour
Volume Unit	L, kL, m^3, k m^3
Measurable Direction	Forward flow only

Operating Conditions	
Process Temperature	T30 (default), T50, T70, T90
Process Pressure	1.6 MPa
Pressure Drop	Δp63
Straight Pipe Requirement	Upstream 0D; Downstream 0D
Mechanical Environ. Class	Class C
Electromagnetic Environ. Class	Class E1
CE Marking	
Electrical Static Discharge	IEC 61000-4-2, 6 kV direct discharge, 8 kV discharge
Radiated RF fields	IEC 61000-4-3, 80 ~ 1000 MHz 10 V/m, 1000 ~ 2700 MHz 3 V/m
Electrical Fast Transient/Burst	IEC 61000-4-4, 1 kV on cable
Surge	IEC 61000-4-5, 1 kV on cable, 1 to 2/50 s wave
Conducted RF Disturbances	IEC 61000-4-6, 0.15 ~ 80 MHz 3V
Electromagnetic Compatibility	IEC 61000-4-8, 10 A/m
Mechanical Shock	IEC 68-2-27, half sine wave, 300g, 3 axles

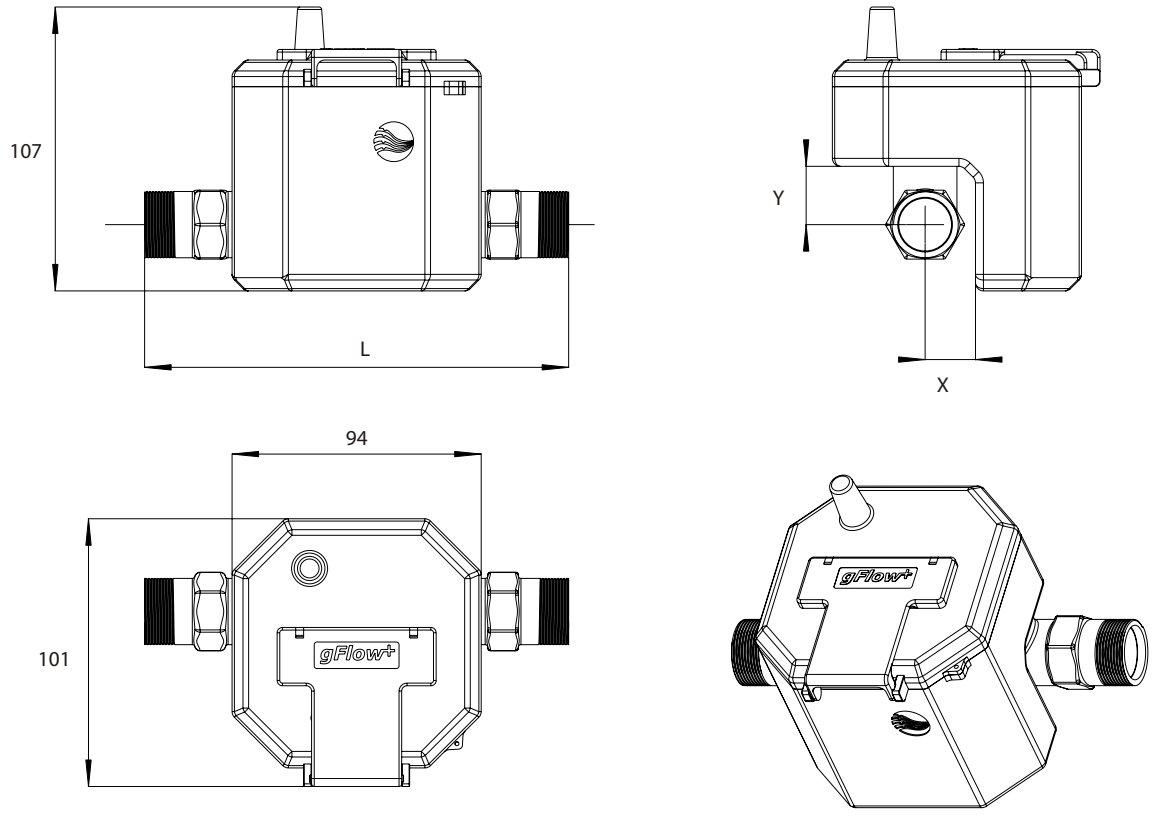
Electrical Specification	
Power Supply	
Internal Battery	3.6 V DC, 76 Ah nominal capacity at 20°C, Max. power: 5mW
Battery Life	10 years
Power Consumption	Maximum Power 0.2 mW
Communication	
Protocol	LoRaWAN, M-BUS, GPRS and NB-IoT
Transmission Distance	2000 m (open space)
Others	
Mode Switch	Optical sensing keys
Display	Low-power LCD
Security	Leveled security password to prevent unauthorized operation

Note:

1. The product uses threaded connection. The adaptable thread specifications are shown in Table [Installation Dimensions].

2. The product can be installed horizontally and vertically. It is necessary to ensure that the pipe is full when working.

3. The direction of the water flow in the pipeline must be the same as the arrow indicated on the product flowtube.



Installation Dimensions

Size DN	Dimensions [mm]			Thread	
	L	X	Y	Sensor	Waterpipe
15	165	19	22	G 3/4"	R 1/2"
20	195	22	25	G 1"	R 3/4"
25	225/260	25	28	G 1 1/4"	R 1"
32	230/260	30	33	G 1 1/2"	R 1 1/4"
40	245/300	35	38	G 2"	R 1 1/2"

Measurement Range [Class 2]

Q2/Q1=1.6 Q4/Q3=1.25 Q3/Q1=R

DN (mm)	Q1 (m^3 / h)	Q2 (m^3 / h)	Q3 (m^3 / h)	Q4 (m^3 / h)	Q3/Q1 (R)
15	0.010	0.016	2.5	3.1	250
20	0.016	0.025	4.0	5	250
25	0.025	0.040	6.3	7.9	250
32	0.040	0.064	10	12.5	250
40	0.064	0.102	16	20	250

Product Order Structure

CT1 - AAA - BC

AAA	Size
102	DN15 (1/2")
304	DN20 (3/4")
001	DN25 (1")
114	DN32 (1 1/4")
112	DN40 (1 1/2")
xxx	Special sizes

B	Temperature Rating
0	T30
1	T50
2	T70
3	T90

C	Communication
0	LoRaWAN
1	NB-IoT
2	M-Bus
3	Infrared

Client Name

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Contact Info

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_____

Client Address

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Product Serial No.

CT1- AAA -BC

Note

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Date

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Our Global Based Engineering Team Are On Hand To Support Sustainability Challenge

More retailer contacts details can be found on our website.
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