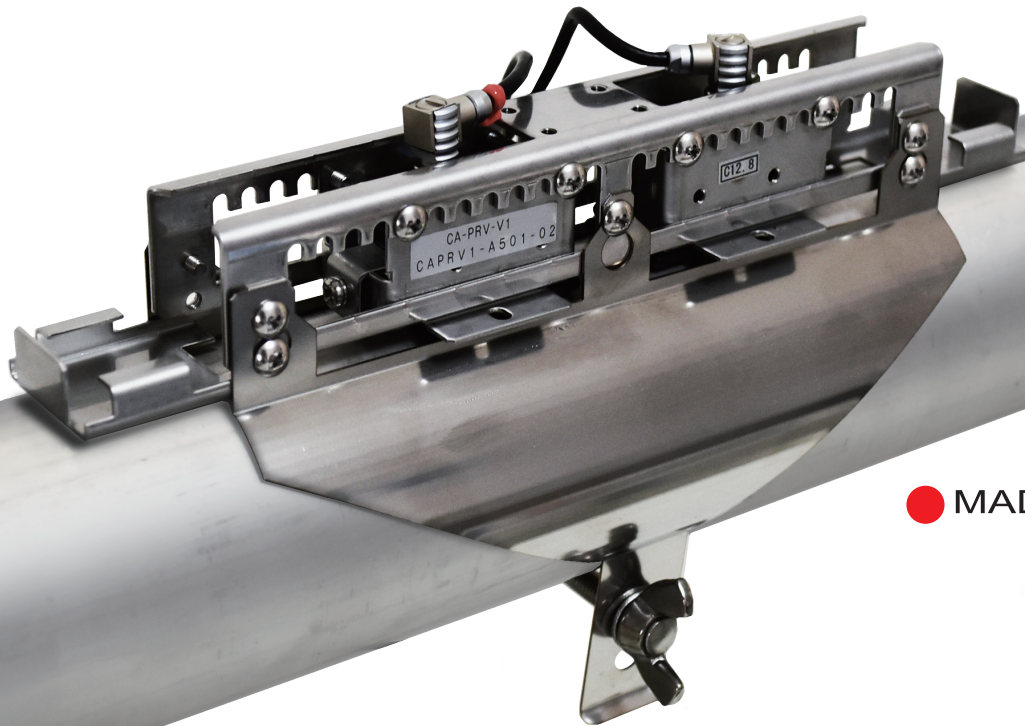*Ultrahigh Accuracy &*
Temperature Measurement

Caloriena®

The Clamp-on Type Ultrasonic Flow Meter
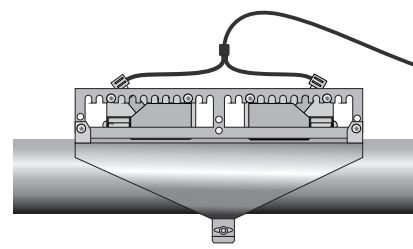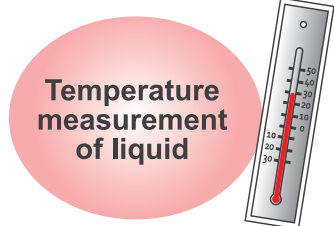
MADE IN JAPAN

ict co.,ltd.
the expert company of
environmental information system

Caloriena

✿ Characteristics

The "Caloriena" is the world's first Ultrasonic Flow Meter that enables simultaneous measurement of flow rate (velocity) and liquid temperature within the piping, from outside the pipeline.

Temperature measurement of liquid

✿ 6 Unique features of Caloriena

💧 Fast & Easy Installation

Portable and battery operated, installation is simple. Just clamp the device onto the pipe with only 1 screw or velcro straps. Calibration and adjustments are fully automated.
There is no need for engineers.

💧 Ultra-high Resolution

Even more accurate with minute flows.
(From 0.001m/sec at >DN200, 0.6% for RD at >0.5m/sec.)

Ultrahigh Resolution
0.001m/sec !
at DN200
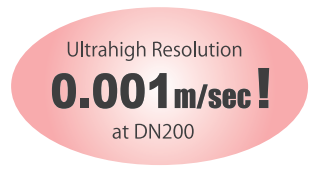
💧 Dynamic Auto-tuning

Dynamic Auto-tuning enables the user to calibrate without stopping the flow. The controllers are able to automatically adjust or cancel zero offsetting, making installation even easier.
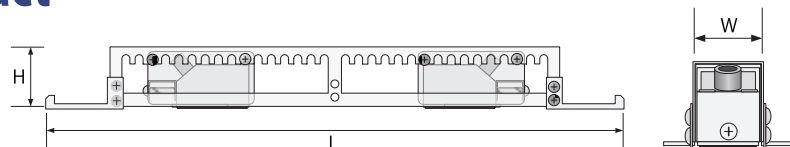
💧 Auto Wall thickness Detection

This feature will let you know the pipe wall thickness, when thickness is not known or cannot be measured due to corrosion.
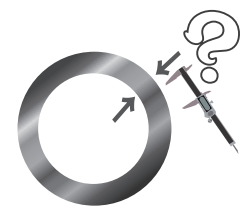
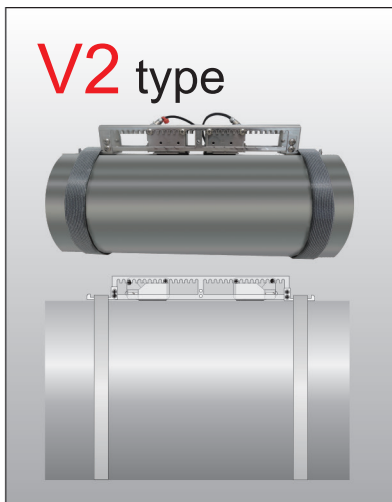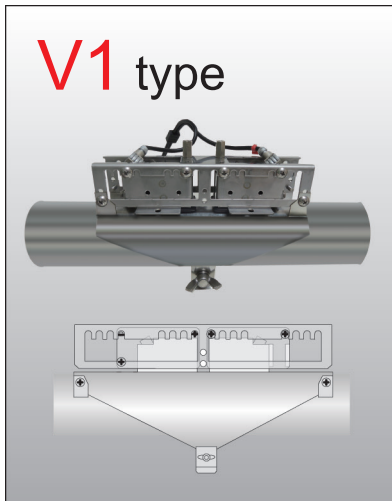### 💧 Extremely Compact

V1-type:
H 28.0mm
W 25.5mm
L 148.0mm

V2-type:
H 28.0mm
W 25.5mm
L 250.0mm

💧 MODBUS

Besides storing data onto a memorycard, there is also an option to monitor with a computer by directly connecting it to the controller.

CONTROLLER
H130xW160xD60
Excluding protusions

Water Resistant Cover

V1 type

V2 type

■ General Specifications

Item	Standard
Fluid to be Measured	Water, Pure Water, etc.
Piping Material	Carbon Steel, Stainless Steel, Vinyl Chloride, Copper, Aluminium, Hard Vinyl, Acrylic, Polyethylene, Cast Iron, Other
Applicable Pipe Sizes	DN25～DN300 (1"-12")
Measuring Range	0.000～5.000 [m/sec]
Velocity Resolution	0.001[m/sec] / >DN200, 0.003[m/sec] / <DN200
Measurement Accuracy	±0.6% for RD (at a flow rate of 0.5 [m/sec] or more) ±2% for RD (at a flow rate less than 0.5 [m/sec])
Fluid Temperature Measurement Range	0.0～50.0[°C] accuracy ±1.0[°C]

■ Specifications for Controller Section

Item	Standard	
Supply Voltage & Power Consumption	DC24V (or DC5V-DC26V Battery-powered), approx.3W	
Man-Machine Interface	4.3" Liquid Crystal Touch Panel	
Analog Output	Ch1 (Flowrate)	DC 4-20mA (DC0-24mA) (Resistance ≤ 500Ω)
	Ch2 (Temperature)	DC 0-5V
Digital Output DC30V 1A	Ch1 PhotoMOS	Positive Flow Rate Pulse
	Ch2 PhotoMOS	Negative Flow Rate Pulse
	Ch3 Mechanical Relay	Measurement Error (ERROR)
Recording Medium	SD Card	
Communication*	RS485 (MODBUS RTU)	9.600~38.400bps
Calendar Clock	Built-in Circuit Board	
Installation Method	With Screws or DIN Rail	
Working Temperature Range	0 ~ 45°C	

*Optional: cannot be used while recording media
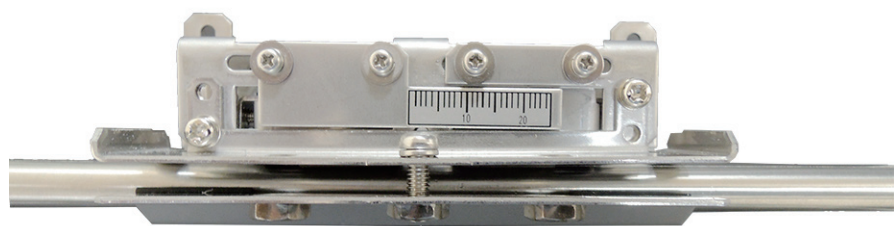
■ Specifications for Sensor Section

Item	Standard
Sensor	Ultrasonic Wave Transducer
Installation Method	One-Screw Bracket or Velcro Straps

	Pipe Size	Sensor Type	Minimum Flow Velocity Resolution [m/sec]
Fittings	DN 25 (1")	V1 type	0.007
	DN 32 (1¼")		0.006
	DN 50 (2")		0.003
	DN 80 (3")		0.002
	DN 100 (4")		0.003
	DN 150 (6")	V2 type	0.002
	DN 200 (8")		0.001
	DN 300 (12")		0.001
Water-Proof Performance	IP55		Under certain conditions

The Ultrasonic Flow Meter
Caloriena

NEW **V0-Sensor for Pipe Size Ø6~DN20**

Installation Example

40mm

DN6
0.5φ

100mm
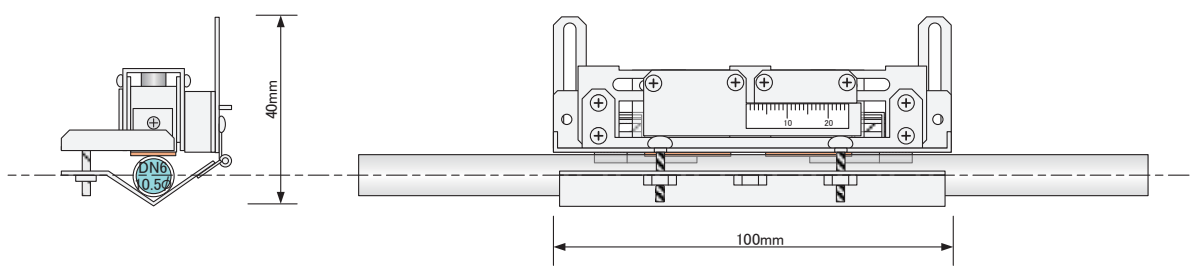
Pipe Size	∅6 ～ DN20
Measurement	Transit-time Method
Installation	Clamp-type (with guage) and dedicated bracket
Pipe material	Carbon Steel, Stainless Steel, Vinyl Chloride, Copper, Aluminium, Hard Vinyl, Acrylic, Polyethylene Cast Iron, Other (Cannot be measured with small particles or air bubbles within the fluid)
Accuracy	±1.5% / RD (at flow rate of 0.5 [m/sec] or more) ±3.0% / RD (at flow rate less than 0.5 [m/sec])
Repeatability	±2%

■ You may also be interested in

NINJA
Direct-insertion
Ultrasonic Flow Meter

Contact

ict co.,ltd.

7-7-6 AO Matsubara City, Osaka JAPAN 580-0043
Phone +81 72-336-2311 Fax +81 72-336-2312
http://www.ict-osaka.net
Email:info_global@ict-osaka.com

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