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

MADE IN JAPAN

Ultrahigh Accuracy

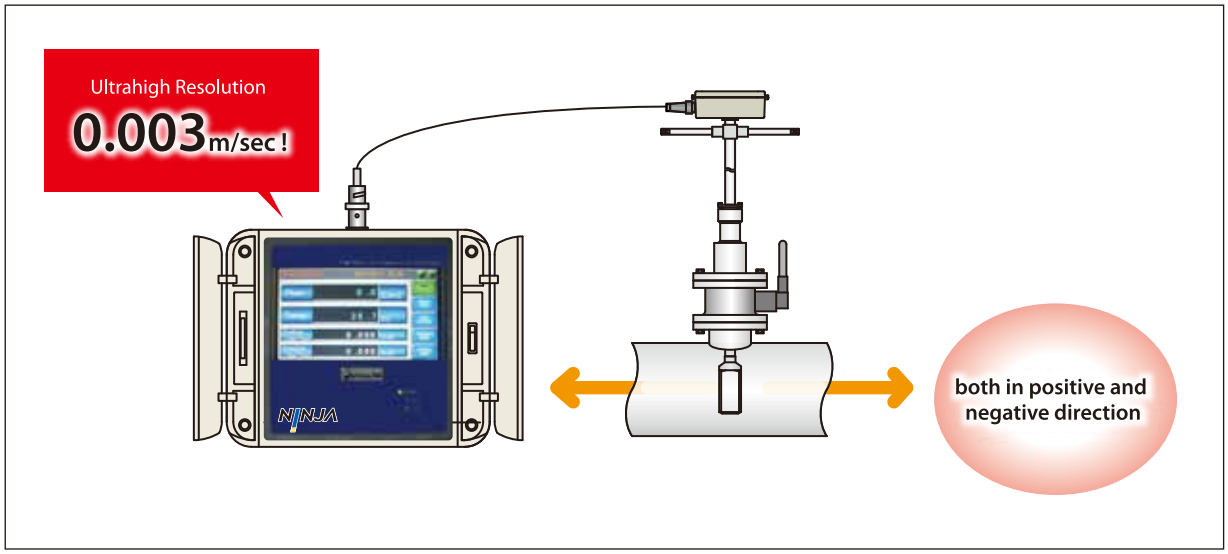
NINJA

The Ultrasonic Flow Meter

NINJA
The Ultrasonic Flow Meter

Characteristics

"NINJA" is a direct insertion type ultrasonic flow meter that can be installed to a pipeline using a maintenance valve without stopping water flow.
The flow meter can be easily installed,and can measure micro flow velocity through its ultrahigh resolution measurement function.
The flow meter has functions of the integration of flow rate in positive and negative directions and the flow rate pulse output, which are impossible to deal with using an electromagnetic flow meter and can measure flow rate immediately without the need to install multiple measuring instruments.



Indicating Section

The indicator is connected to the "Sensor section" with a dedicated coupler cable.
The indicator sets various parameters (piping information, Measurement method, and output).

Sensor Section

The sensor section consists of the ultrasonic sensor, shaft and control box, and can be installed into the center of the flow in the pipeline through the maintenance valve.

Dynamic Auto-tuning

We've added a phenomenal function to our Caloriena and NINJA. Dynamic Auto-tuning allows the user to calibrate without stopping the flow. The controllers are able to automatically adjust or cancel zero offsetting, making installation even easier-just attach, push ON and start measuring!

Gneral Specifications

Item	Standard
Fluid to be Measured	Water, Pure Water
Applicable Pipe Sizes	85A to 300A
Measurable Range	0.000-10.000 [m/sec]
Velocity Resolution	0.003 [m/sec]
Measurement Accuracy	±2% for FS (at a flow rate of 0.1 [m/sec] or more) ±5% for FS (at a flow rate of less than 0.1 [m/sec])
Weight	15Kg or more (depend on shaft length)

Specifications for Indicator Section

Item	Standard
Supply Voltage & Power Consumption	DC24V (DC5V-DC26V), approx. 5W or less Supplied from sensor section
Man-machine Interface	4.3" liquid crystal color touch panel
Indication	current flow rate [L/sec] [L/min] [L/hour] current flow velocity [L/sec] [L/min] [L/hour] positive flow rate pulse 0 to 999999.999 [m^3] negative flow rate pulse 0 to 999999.999 [m^3]

Specifications for Sensor Section

Item	Standard		Remarks
Sensor	Ultrasonic Vibrator		
Installation Method	flange mounting		Depending on flange size
Meterial	AISI316/304		
Analog Output	Ch1 (flow rate)	DC 4-20mA (DC0-24mA) (Resistance 500Ω)	
	Ch2 (temperature)	DC 0-5V	
Digital Output (PhotoMOS relay) DC30V 500mA	Ch1	Positive flow rate pulse	
		Negative flow rate pluse	
	Ch2	Measurement error (ERROR)	
Recording Medium	SD card		
Communication*	RS485 (Modbus RTU)		9.600～38.400bps
Colendar Clock	Circuit board built in		
Working Temperature Range	-5-55℃		

*Optional : cannot be used while recording media

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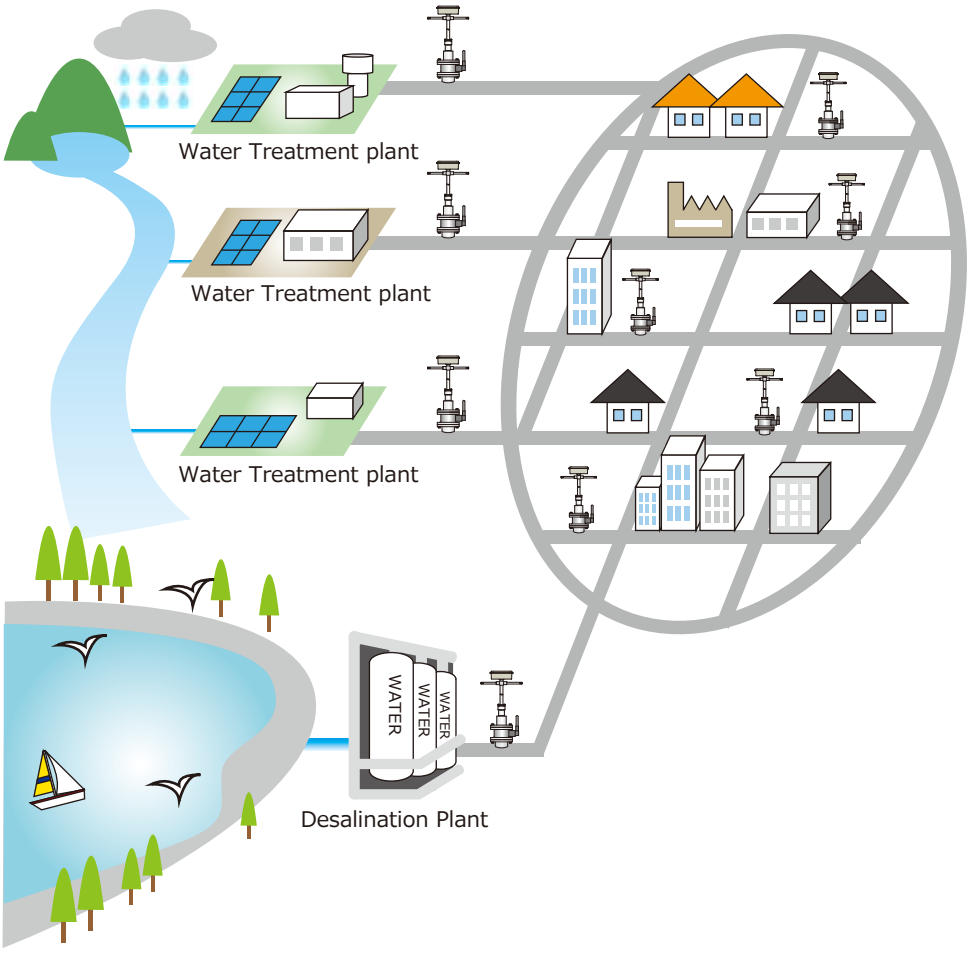
Application

Smart Water Grid



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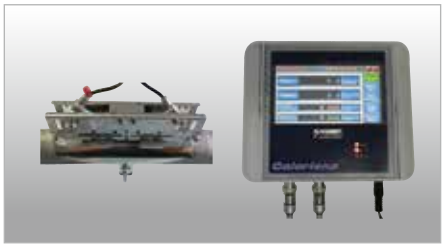

Caloriena

Clamp-type
Ultrasonic Flow Meter

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