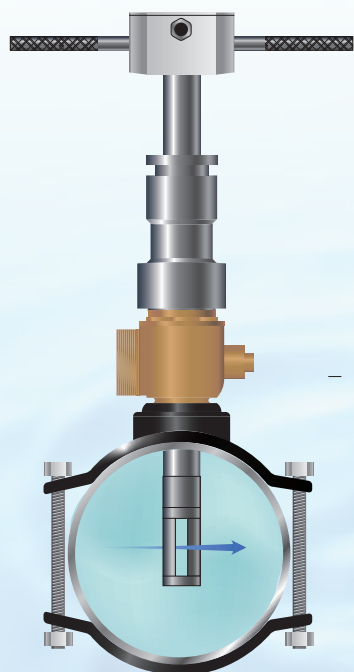


Insertion Type
Ultrahigh Accuracy Ultrasonic Flowmeter

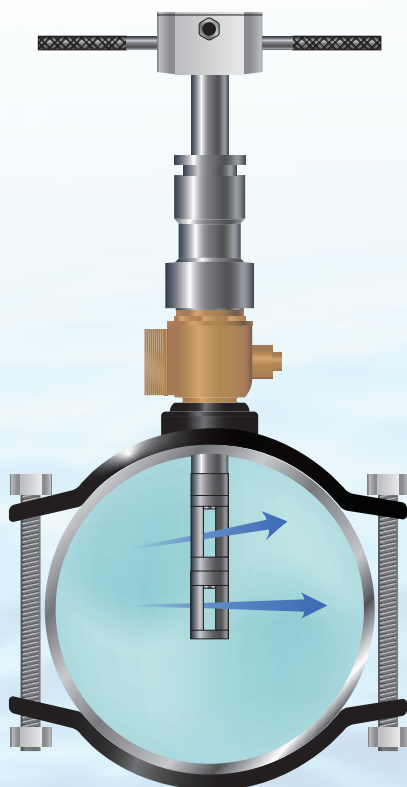
ULSONA^{DT}

ULSONA DT Series

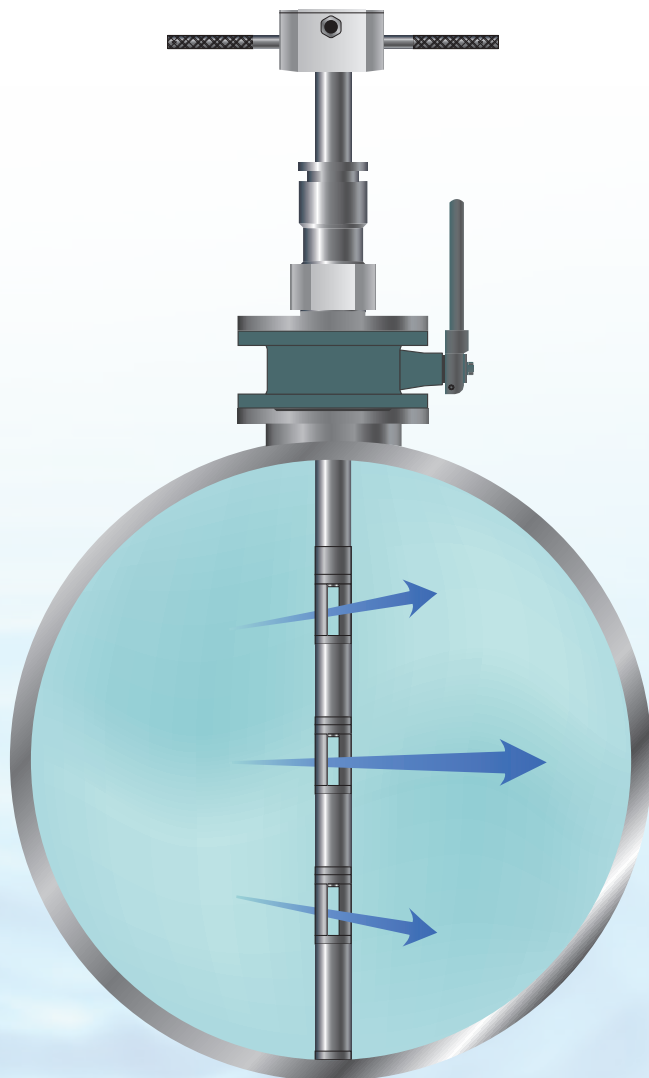
*The new Ulsona-DT series offers
innovative measurement methods
with improved user-friendly functions*



1 point measurement
ULSONA-DT 1



2 point measurement
ULSONA-DT 2

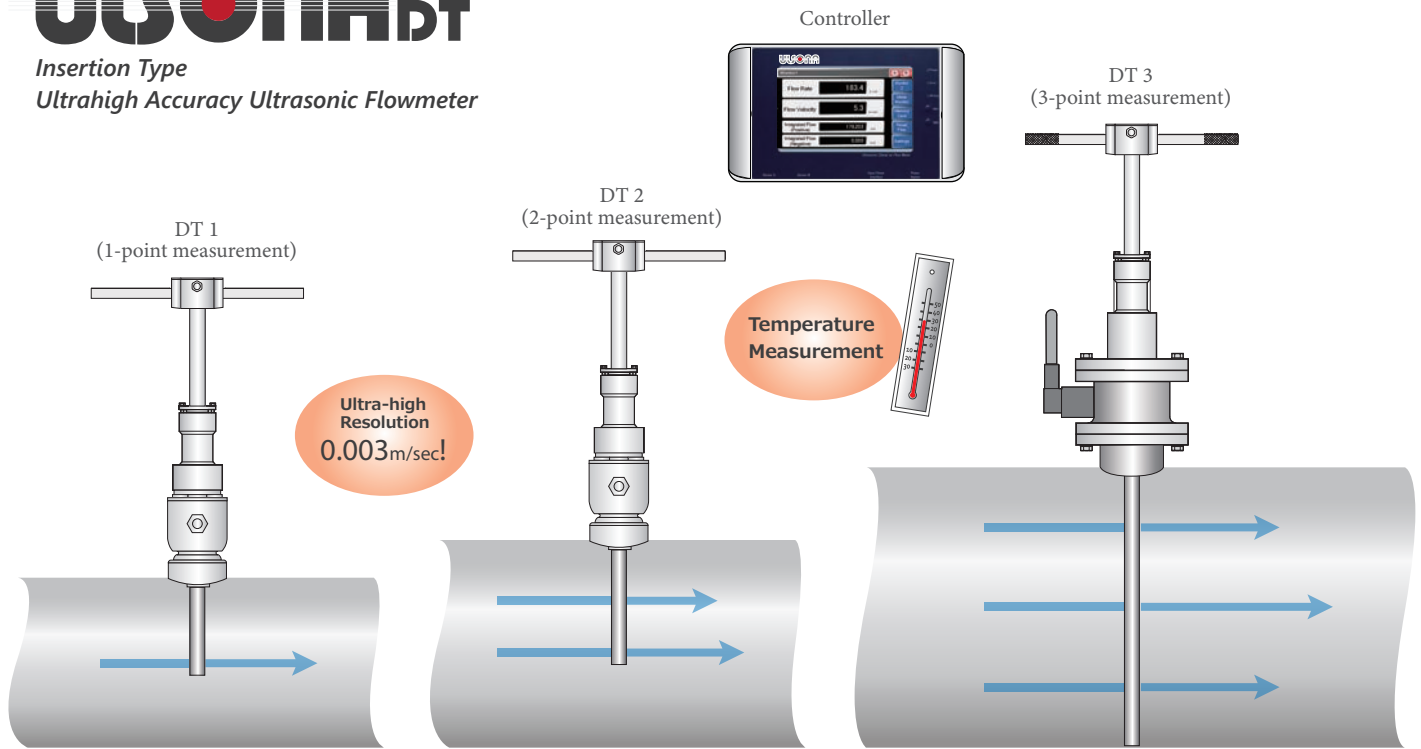


3 point measurement
ULSONA-DT 3

ULSONA^{DT}

Insertion Type

Ultrahigh Accuracy Ultrasonic Flowmeter



Point 1

Installation Cost is Extremely Low

The **ULSONA** can be easily *installed onto a Ball valve* without construction. There is ***no need to stop water flow.***

Point 2

Fast and Easy Calibration

Adjustment and **Calibration** is fully **automated**. Start measuring, after just one push of the Calibration button.

Point 3

High Accuracy with Latest Ultrasonic Technology

Transit-time measurement accuracy has improved greatly with the newest technology. With a flow **resolution of 0.003m/sec**, the highest in the industry, **accurate** measurement of **micro flow** is also possible.

Point 4

Settings

The Parameter settings necessary for measurement, can easily be set through an **interactive LCD screen**.

Point 5

Temperature Measurement

The **ULSONA** can measure fluid temperature. With accuracy of $\pm 1^\circ\text{C}$, continuous **monitoring of temperature** is possible. (standard function)

Point 6

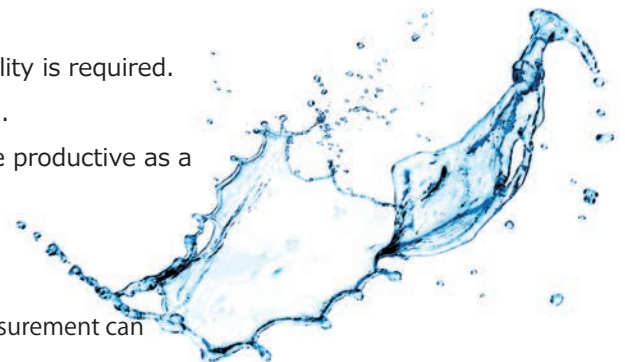
Portability

The **ULSONA** may be **battery operated** when portability is required. Any battery that has appropriate voltages can be used. The easily attachable and detachable **ULSONA**, can be productive as a **portable type** ultrasonic flowmeter.

Point 7

DT-2 and DT-3 Backup Function

As long as one of the sensors are functioning properly, measurement can progress without interruption.

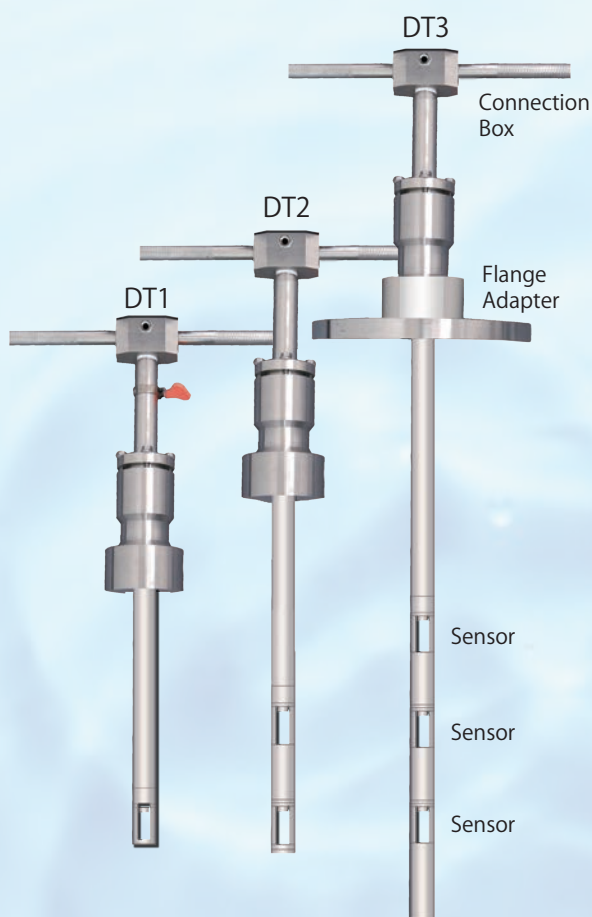


[Specifications]

Controller Display and Settings



Main Unit and Sensor



General Specifications	
Measurable Fluids	Water, Pure Water, Industrial Water, etc.
Measurement Method	Transit-time Method
Applicable Pipe Sizes	DT 1 DN80 ~ DN300 DT 2 DN350 ~ DN450 DT 3 DN500 ~ DN2000
Measurable Velocity	0.000 ~ ±20.000 [m/sec]
Velocity Resolution	0.003 [m/sec]
Measurement Accuracy	±0.5% for RD (at a flow rate > 0.5 [m/sec])

Controller / Display and Settings Specifications	
Supply Voltage & Power Consumption	DC24V (DC9V-DC26V Battery Operational) < approx. 10W
Analog Output	Ch 1 Flowrate DC 4-20mA (DC0-24mA) (Resistance 500Ω)
	Ch 2 Temperature, Flow velocity, Negative flowrate (selectable) DC 1-5V
Digital Output	Ch 1 Positive Flowrate PhotoMOS Relay DC30V 500mA
	Ch 2 Negative Flowrate PhotoMOS Relay DC30V 500mA
	Ch 3 Measurement Error Non-voltage contact
Recording Medium	microSD Card (2GB MAX)
Communication	RS485 (Modbus RTU 9600~38400bps)
Calendar Clock	Built in Circuit board
Working Temperature	-5~50 °C (Controller)
Man-machine Interface	7" LCD Color Touch Panel
Indication	Current flow rate [L/sec] [L/min] [L/hour] [m³/sec] [m³/min] [m³/hr] Current flow velocity [m/s] Positive flow rate pulse 0 to 999999.999 [m³] Negative flow rate pulse 0 to 999999.999 [m³]
Waterproof Performance	Equivalent to IP65

Sensor / Main Unit Specifications	
Sensor	Ultrasonic Oscillator
Installation Method	Directly onto Ball Valve / Flange mounting
Material	AISI 316 (Insertion shaft) AISI 304 (Connection box, handle)
Weight	10Kg or more (depends on shaft length)
Waterproof Performance	IP68
Working Temperature	0~55 °C (Sensor)

Monitor1

Flow Rate 183.4 L/min

Flow Velocity 5.3 m/sec

Integrated Flow (Positive) 178.203 m³

Integrated Flow (Negative) 0.000 m³

Monitor 2

Meter Monitor

Memory Card

Reset Flow

Settings

The screenshot displays the Flowmeter software interface with the following data:

Measurement	Value	Unit
Flow	65.6	m ³ /h
Velocity	1.235	m/sec
Temp.	19.2	°C
Pressure	1.0	MPa
Positive Total Flow	999999.999	m ³
Negative Total Flow	999999.999	m ³
Pulse	999999.999	Count
Time	23.8	msec

Piping standard (Stainless) 1/2														Exit
ND	OD		Sch 5S		Sch 10S		Sch 20S		Sch 40S		Sch 80S		ID	
	mm	Inch	THICK	ID	THICK	ID	THICK	ID	THICK	ID	THICK	ID		
6	18	10.5	1.0	8.5	1.2	8.1	1.5	7.5	1.7	7.1	2.4	5.7		
8	14	13.8	1.2	11.4	1.65	10.5	2.0	9.8	2.2	9.4	3.0	7.8		
10	38	17.3	1.65	17.0	1.65	14.4	2.0	13.3	2.3	12.7	3.2	10.9		
15	12	21.7	1.65	18.4	2.1	17.5	2.5	16.7	2.8	16.1	3.7	14.3		
20	34	27.2	1.65	23.9	2.1	23.0	2.5	22.2	2.9	21.4	3.9	19.4		
25	1	34.0	1.65	30.7	2.8	28.4	3.0	28.0	3.5	27.0	4.5	25.0		
32	114	42.7	1.65	29.4	2.8	37.1	3.0	36.7	3.6	35.5	4.9	32.9		
40	112	48.6	1.65	45.3	2.8	43.0	3.0	42.6	3.7	41.2	5.1	38.4		
50	2	60.5	1.65	57.2	2.8	54.9	3.5	53.5	3.9	52.7	5.5	49.5		
65	2 1/2	76.3	2.1	72.1	3.0	70.3	3.5	69.3	5.2	65.9	7.0	62.3		

