

# Specification

SONIC CORPORATION

## Integrate Type $\mu$ LF-300

INTEGRATE TYPE

### General

Model	$\mu$ LF-304I	$\mu$ LF-308I
Measurement method	Ultrasound transit time method	
Pipe material	PFA	
Nominal diameter	$\Phi$ 1/4 inch	$\Phi$ 1/8 inch
Pipe length	180mm	
Applicable liquids	Water, Aqueous solution, Oil, Chemical liquid * Please note: you need to confirm if it is used for liquids other than water	
Liquid temperature	*Temperature 10 °C to 60 °C * Please note: you need to confirm if it is used at a temperature higher than 60°C	
Atmosphere temperature	0°C to 50 °C ,no condensation	
Measurement range	0 ml/min to 4000 ml/min 0 g/min to 4000 g/min (H2O conversion)	0 ml/min to 1000 ml/min 0 g/min to 1000 g/min (H2O conversion)
Accuracy	$\pm$ 1%RD 800ml/min to 4000ml/min $\pm$ 8ml/min, less than 800ml/min	$\pm$ 1%RD 200ml/min to 1000ml/min $\pm$ 2ml/min, less than 200ml/min
Reproductivity	$\pm$ 0.2% (Liquid temperature $\pm$ 0.5 °C, 30 sec averaging)	
Resolution	0.1ml/min	
Response	10 msec	
Protection rating	Indoor use (Equivalent to IP65)	
Power supply	DC 5V $\pm$ 10% (DC 4.5V to 5.5V)	
Power dissipation	less than 1.5W	
Weight	350g (Body only)	



### Data Interface

Serial port	4 Wired RS-422
Protocol	Data bit 8bit (Fixed) , Even parity (Fixed), Stop bit 1bit (Fixed)
Baudrate	38400 baud

\* Please read the Serial Interface Specification if you need the data format in detail

## Separate Type $\mu$ LF-300S

SEPARATE TYPE

### General

Model	$\mu$ LF-300S(Converter) + $\mu$ LT-4I	$\mu$ LF-300S(Converter) + $\mu$ LT-8I
Measurement method	Ultrasound transit time method	
Pipe material	PFA (Fluororesin)	
Nominal diameter	$\Phi$ 1/4 inch	$\Phi$ 1/8 inch
Pipe length	180mm	
Applicable liquids	Water, Aqueous solution, Oil, Chemical liquid * Please note: you need to confirm if it is used for liquids other than water	
Liquid temperature	*Temperature 15 °C to 60 °C * Please note: you need to confirm if it is used at a temperature higher than 60°C	
Atmosphere temperature	0°C to 50 °C ,no condensation	
Measurement range	$\Phi$ 1/4inch : 0 ml/min to 4000 ml/min $\Phi$ 1/8inch : 0 ml/min to 1000 ml/min	
*Accuracy	$\Phi$ 1/4inch : $\pm$ 0.5%RD(800ml/min to 4000ml/min) * $\pm$ 4ml/min, less than 800ml/min	$\Phi$ 1/8inch : $\pm$ 0.5%RD(200ml/min to 1000ml/min)* $\pm$ 1ml/min, less than 200ml/min
Reproductivity	$\pm$ 0.2% (Pure water, Liquid temperature $\pm$ 0.5 °C, 30 sec averaging)	
Response	10 msec	
Power supply	DC 24V $\pm$ 10%	
Power dissipation	less than 3.6W	
Weight	240g (Converter)	



\*Accuracy (in the case of room temperature and constant temperature water)

### Sensor

Model	$\mu$ LT-4I ( $\Phi$ 1/4 inch)	$\mu$ LT-8I ( $\Phi$ 1/8 inch)
Pipe material	PFA (Fluororesin)	
Nominal diameter	$\Phi$ 1/4 inch (OD 6.45mm, ID 4.35mm)	$\Phi$ 1/8 inch (OD 3.17 mm, ID 2.17mm)
Protection rating	IP65 Equivalent	
Cable length	5m (Max. 30m)	
Weight	70 g	

### Data Interface

Digital input/output	4 Wired RS-422, 4 Wired RS-485
Analog output	4-20mA (Instantaneous flowrate), Load resistance less than 500 $\Omega$
Integrated pulse output	1ch (Open collector)
Alarm output	1ch (Open collector)
Contact input	1ch (Zero flow setting or integrated value clear)

## Ultrasonic Micro Liquid Flowmeter

# $\mu$ LF series

## ULTRASONIC LIQUID FLOWMETER



MADE IN JAPAN

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\* Specification is subject to change without prior notice





# Highly optimized custom-design ultrasonic sensors contribute the accuracy of the measurement

Easy integration, no confusing operation, designed to be best liquid flowmeter for use in the various application field

## Non-contact sensing

Less deterioration by no intrusive design and no moving parts

## Fast response

Direct sensing by ultrasonic and calculation fast by integrated signal processor

## Fluoroplastic tube

High durability PFA tube

## No pressure loss

Non-contact sensing measurement causes no pressure loss

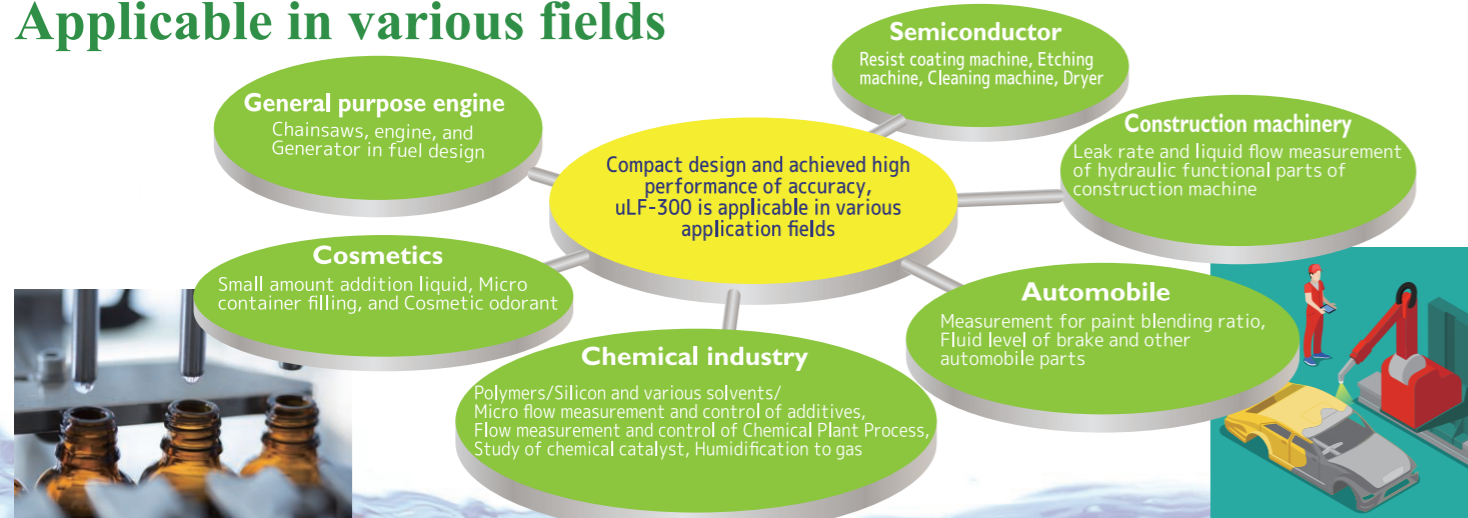
## Compact design

Ideal body size for any application type enables easy and flexible installation to existing facility

## Straight tube for flow path

Less bubble, no clogging of tube enables a stable measurement

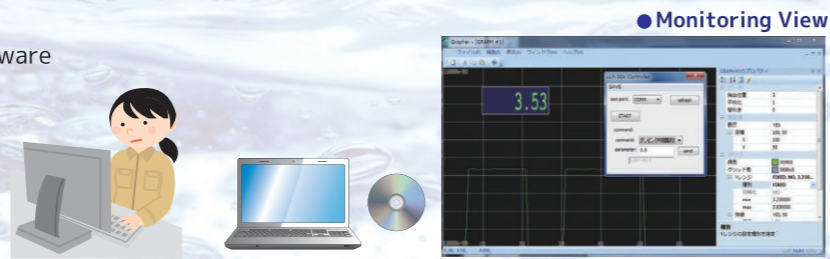
## Applicable in various fields



Bundled uLF-300 flowrate monitoring viewer software

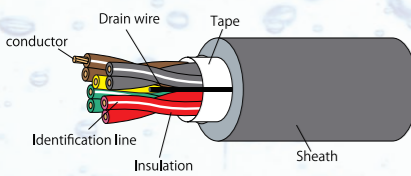
- Instantaneous flowrate is displayed by visual overview
- Averaging function
- Measured data is saved in CSV file

※Windows Only (Tested on Windows 7)  
※RS-422 adapter is not included



## Cable specification

The end point of cable is loose wires. (Standard cable length is 5m)  
※Fabricated by Factory Automation Cable KVC-36(UL Specification)



### Integrated Type uLF-300

Signal	9 cores cable			Remarks
	Polarity	Color	Name	
Power	+	RD	DCSV+	+5V DC power is required to connect between (RD and RD/WH) and (BL and BL/WH)
	+	RD/WT	DCSV+	
	-	BK	DCSV-	
	-	BK/WT	DCSV-	
Ground	+	YE	FG	Frame ground
	+	BN	TXD+	Connect to RS-422 receiving port of host system
-	BN/WT	TXD-		
4 wired RS-422	+	GN	RXD+	Connect to RS-422 transmitting port of host system
	-	GN/WT	RXD-	

### Separate Type uLF-300S

Signal	12P Connector				Remarks
	Name	Polarity	PIN No.	Name	
Power	+	-	1	DC+	DC24V
	-	-	2	DC-	
Analog output	+	+	3	I+	DC4 ~ 20mA Load resistance: less than 500Ω
	-	-	4	I-	
Integrated pulse	+	+	5	Pls_S	Open collector Standard: DC 30V, 0.25A less than
	-	-	6	Pls_G	
Alarm	+	-	7	AL_H	Open collector Standard: DC 30V, 0.25A less than
	-	-	8	AL_G	
	+	-	9	AL_L	
FG	-	-	10	FG	Min. Pulse width: 10 μsec
	+	+	11	RST_S	
Input	-	-	12	RST_G	

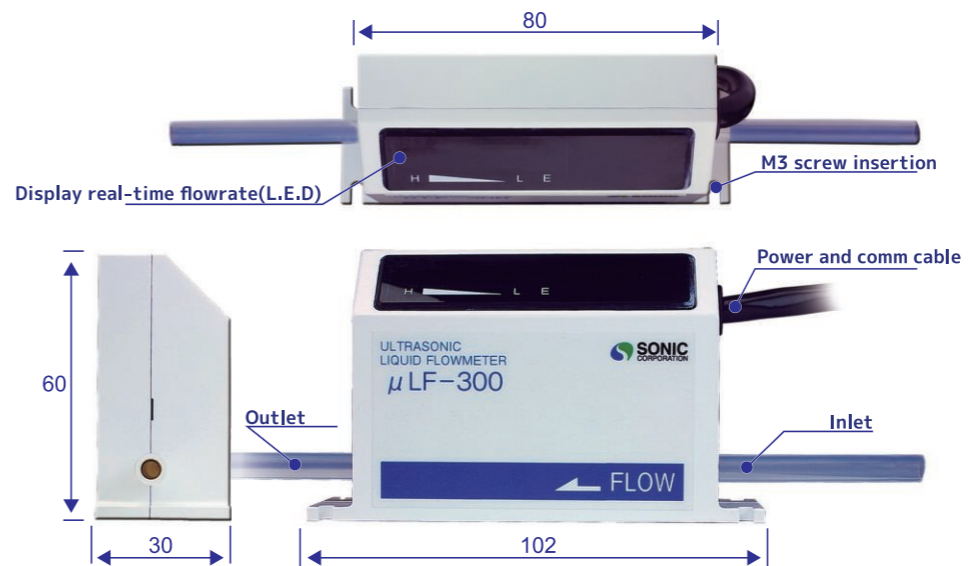
## Notice

- uLF-300 has no power switch. Please make sure that the cables are properly connected before power-on.
- Wrong power supply may cause a serious damage to uLF-300.

# ULTRASONIC LIQUID FLOWMETER uLF-series

## Integrate Type uLF-300

- Ideal flowmeter for an embedded system
- Small and compact design

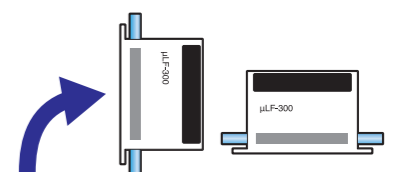


## INTEGRATE TYPE



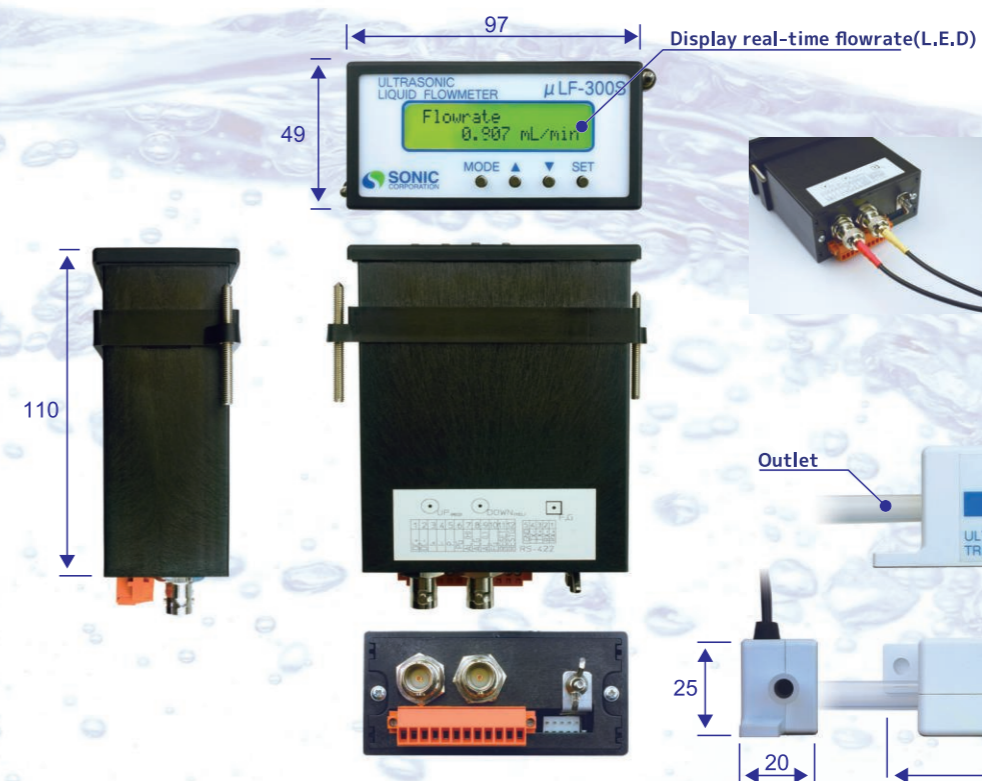
## Flexibly installed anywhere you want

uLF-300 can be installed at any direction in piping. In order to avoid a bad effect by bubbles, installed vertically is recommended.



## Separate Type uLF-300S

- Equipped with LCD monitor
- Installation to existing facilities without extra cost
- Integrated anti-bubble filter



## SEPARATE TYPE



## Data Interface

uLF-300S has conventional 4-20mA analog and 4-wire RS422/485 digital interface.