

# Flowmeters for Utility

**TOKYO KEISO**

## Clamp-on Ultrasonic Flowmeter

We have a lineup of various time-flight type ultrasonic flowmeters for general piping and processes. The sensor can be attached from the outside of pipe, and measurement is possible without contacting liquid.

### UL330

Standard Model



Flexible support for 25 to 400 mm piping.  
Ideal for measuring pure water flow rates for semiconductor equipment etc.

### UL350

High-performance Model



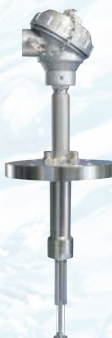
Flexible support for a wide range of piping  
from 25 to 1000 mm.  
RS-485 digital communication.

## Thermal Flowmeter

TH series Flowmeters are Tokyo Keiso's original thermal flow meters for gases based on the heat transfer theory. The sensor is available for process pipeline diameters from 15 to 1500mm to meet various applications. Electrolytic polishing option is also available.

### TH-1100

Insertion type detector



Process Connection	1-1/4" ASME Class150 Flange
Piping Size	50mm ~ 350mm Option 400mm~1500mm
Max Op. Temp. segment	80°C / 180°C / 240°C
Max Op. Pressure	1.0 MPa max.
Flow range	Max : Air 0 ~ 681490m³/h(nor) Min : Air 0 ~ 45m³/h(nor)

### TH-1200

Flange type detector



Process Connection	Flange connection
Piping Size	50mm ~ 150mm
Max Op. Temp. segment	80°C / 180°C
Max Op. Pressure	1.0 MPa max.
Flow range	Max : Air 0 ~ 7360m³/h(nor) Min : Air 0 ~ 45m³/h(nor) With straightener built in Max : Air 0 ~ 2605m³/h(nor) Min : Air 0 ~ 5m³/h(nor)

### TRX-600

Converter



Protective Construction	IP65equivalent
Display	Upper side : Flow rate 6-digit LED Lower side : Integration 8-digit LED
Output	Analog : DC4 to 20mA Instantaneous flow, Integrated flow : RS-485
Accuracy	2.0% F.S. ±1digit

Specification is subject to change without notice.

# Flowmeters for Semiconductor Industry



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# Flowmeters for Semiconductor manufacturing equipment

## Clamp-on Ultrasonic Flowmeter

**GST/ SFC011GS**  
Guided wave clamp-on ultrasonic flowmeter

Clamp-on ultrasonic flowmeter for PFA small diameter tubes. Ideal for processes that require high cleanliness, such as semiconductor manufacturing equipment. The converter is multi-channel compatible, and one converter can connect up to 6 detectors.

Measurement target	Pure water, Photo resist, Low-K material, Thinner
Fluid temperature	At normal temperature (temperature change $\pm 0.5^{\circ}\text{C}$ )
Fluid pressure	0.5 MPa max.
Flow range	Max: 0~2.0L/min Min: 0~0.5L/min
Compatible tube size	PFA 1/8", 1/4", 4 mm, 5 mm, 6 mm
Accuracy	$\pm 2\%$ R.D (> 0.8 L/min)



## Ultrasonic Flowmeter for small flow rate

**UCUF-02M/ SFC-010L**  
Ultrasonic flowmeter for small liquid flow rate

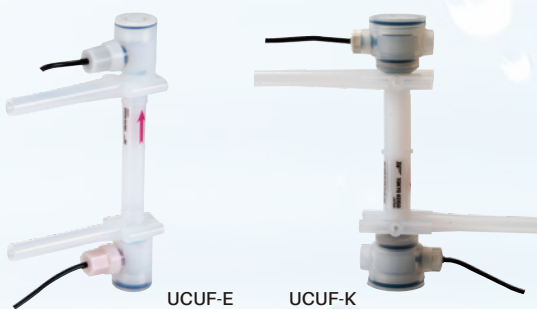
A PFA ultrasonic flowmeter for small liquid flow rates with a smallest full-scale flow rate of 10mL/min.

Measurement target	All liquids
Fluid temperature	10 ~ 90 °C
Fluid pressure	0.5 MPa max.
Flow range	Max: 0~100L/min Min: 0~10mL/min
Meter size	2.5 mm
Accuracy	$\pm 1\%$ R.D ( $\geq 25$ mL/min)



## High precision Ultrasonic Flowmeter

**UCUF-E / UCUF-K**  
Ultrasonic flowmeter sensor



A PFA ultrasonic flow meter designed for high-precision measurement of small-flow ultra-pure water and various chemicals. The wetted parts are all made of PFA, and there are no moving parts, no mechanical seal parts such as O-rings that easily cause liquid pooling, and an ideal clean structure.

**SFC3000/SFC4000**  
Ultrasonic flowmeter converter



Measurement target	All liquids	Meter size	UCUF-E: 4 mm, 6 mm UCUF-K: 10 mm, 15 mm, 20 mm
Fluid temperature	10 ~ 60 °C	Accuracy	$\pm 1\%$ R.D (Flow velocity $\geq 1$ m/s)
Fluid pressure	0.5 MPa max.		
Flow range	Max: 0~80 L/min Min: 0~50 mL/min		

## Ultrasonic Flowmeter for high temperature liquid

**UCUF-04MT/ SFC-010T**  
Ultrasonic flowmeter for high temperature liquid

A PFA ultrasonic flowmeter for high-temperature liquids that can handle fluid temperatures up to 180°C



Measurement target	All liquids	Flow range	Max: 0.8~2.0L/min Min: 0.1~0.8L/min
Fluid temperature	10 ~ 180 °C	Meter size	4 mm
Fluid pressure	0.5 MPa max. (fluid temperature <120°C)	Accuracy	$\pm 1\%$ R.D (flow velocity $\geq 1$ m/s or more)

## Ultrasonic Flow Monitor

**UF**  
PFA Integrated Ultrasonic Flowmeter

The UF is an integrated ultrasonic flowmeter with a display that uses a straight PFA tube.

Measurement target	Pure water, Water
Fluid temperature	10 ~ 90 °C
Fluid pressure	0.5 MPa max.
Flow range	Max: 0~150L/min Min: 0~20L/min
Meter size	1/2", 3/4", 1"
Accuracy	$\pm 2\%$ F.S. (1 digit)



## Ultrasonic Flow Monitor

**UCF006**  
Compact ultrasonic flow monitor

A compact PFA ultrasonic flow monitor for water.

Measurement target	Pure water, Water	Flow range	0 ~ 8 L/min
Fluid temperature	10 ~ 80 °C	Meter size	6 mm
Fluid pressure	0.5 MPa max.	Accuracy	$\pm 2\%$ R.D (> 1.7 L/min)



## Vortex Flow Sensor

**VF-2000 VF-3000**  
Vortex flow sensor

VF-2000 is a PPS vortex flow sensor for liquids with excellent cost performance. The VF-3000 is a New PFA vortex flow sensor. With a simple and clean structure, it is ideal for controlling the flow rate of ultra-pure water, water, low-viscosity chemicals, etc.

VF-2000		VF-3000	
Measuring fluid	Pure water, Water, Cooling water	Measuring fluid	Pure water, Chemicals
Fluid temperature	0 ~ 70℃	Fluid temperature	0 ~ 90 °C
Fluid pressure	1 MPa max.	Fluid pressure	0.5 MPa max.
Flow range	Max: 4 ~ 40 L/min Min: 0.5 ~ 4 L/min	Flow range	Max: 15 ~ 150 L/min Min: 0.3 ~ 2.5 L/min
Body material	PPS resin(Polyphenylene sulfide)	Body material	New PFA



## Clamp-on UltrasonicFlowmeter

**UCL/ SFC010C(1ch) SFC011C(6ch)**  
Clamp-on ultrasonic flowmeter

Clamp-on ultrasonic meter for PFA tubes. Compatible with tube sizes from small diameter up to 1" . The lineup of converters are 1ch type and multi-channel type, and one converter can connect up to 6 detectors.

Measurement target	All liquids	Compatible tube size	PFA 6 mm, 8 mm, 10 mm, 6.35 mm, 9.53 mm, 12.70 mm, 19.05 mm, 25.40 mm
Fluid temperature	10 ~ 60 °C		
Fluid pressure	0.5 MPa max.	Accuracy	$\pm 2\%$ R.D (> 0.8 L/min)
Flow range	Max: 0~80L/min Min: 0~3L/min		



## Flow Controller

**CLFC300**  
Integrated type flow controller

This is a flow controller that uses a PFA high-precision ultrasonic flowmeter for flow detection and integrates the control valve and control circuit section. Ideal for semiconductor manufacturing processes and chemical solution control processes. It can be used for flow control of pure water, ultrapure water, various chemicals, CMP slurries, etc.



## Small Variable Area Flowmeter

**P series Purge meters**

Purge meter is a small variable area flowmeter. Measures and displays the flow rates of liquids and gases. We respond with a wide lineup from various device installations to processes. Recommended for gas flow rate control in semiconductor manufacturing equipment.

