

## OUTLINE

**UCUF** series ultrasonic flowmeter is designed for very small flow rate of ultra-pure water and chemical liquid services. All wet parts made of molded specific grade PFA have no moving part and no sealing mechanism like o-ring which would lead to liquid stagnation. The simple and smooth construction leaving no residues is best suited for such process as semiconductor manufacturing where cleanliness is required.

The **SFC-900** is used as a converter for **UCUF** series ultrasonic flowmeters. Using patented Subtracting Correlation Method by TOKYO KEISO Co.,Ltd., the converter offers stable flow measurement by eliminating drastically the adverse effects caused by the bubbles contained in semiconductor and chemical liquid handling processes. The value-added simple circuit configuration of Subtracting Correlation Method has realized high-performance flowmeter at inexpensive price.



## FEATURES

- ❑ Intensified bubble resistivity  
The ultrasonic flowmeters have difficulties in measuring fluids containing bubbles, because the bubbles decrease the receiver sensitivity. The Subtracting Correlation Method determines the flow rate by the correlation of receiver signals of upward and downward streams which enables stable flow measurement even at low sensitivity unless the receiver signal becomes 0. TOKYO KEISO Co.,Ltd has succeeded in significant improvement of the bubble resistivity by detecting and eliminating unstable conditions thanks to our accumulated field experiences.
- ❑ Compact and light weight  
The detector and the converter are of separate type. Compact and easy wiring because of the plug-in construction of the converter.
- ❑ Coaxial connector  
General purpose BNC coaxial connector common to existing products
- ❑ Cleared EMC test : EMI/EN55011:2007 (Group1, Class A)  
EMS/EN61326:2006
- ❑ RoHS compatible
- ❑ Measurement of high kinematic viscosity liquids as high as 40mm<sup>2</sup>/s
- ❑ Ideal detector with clean construction
- ❑ Corrosion resistant and easy installation
- ❑ Accuracy : within  $\pm 1\%$  of the reading at flow velocity 1m/s or more
- ❑ Versatile functions including followings  
Alarm outputs of instantaneous flow rate or fault status output  
Various analog outputs of instantaneous flow rate are selectable.
- ❑ Easy and simple parameter setting corresponding to measuring liquids

## STANDARD SPECIFICATIONS

Model		SFC-900
Power supply		DC24V $\pm$ 10%
Consumption current		Approx. 100mA (Approx. 2.5W)
Inrush current Approx.		1.0A/2ms
Output	Pulse output	Either frequency pulse output or fault output is selectable Open collector Load rating: Within DC30V, 10mA • Frequency pulse output Duty ratio: 1:1 Pulse rate: 0 to 1000Hz (full scale) • Totalized pulse output Multiplier: $\times 0.1\text{mL}$ , $\times 1\text{mL}$ , $\times 10\text{mL}$ , $\times 1\text{L}$ Pulse width: 0.5ms, 50ms, 100ms • FAULT output (output if abnormality occurs in converters or detectors) NO/NC (selectable)
	Alarm output	High or Low alarm (2 points) or Totalized Flow alarm (2 points) Open collector Load rating: DC30V, 20mA
	Current output	DC4 to 20mA Load resistance: Within 500 $\Omega$
Input	Sensor signal	Exclusive cable (BNC connector)
Communication function		RS485 communication function Protocol: MODBUS Maximum 32 of flowmeters can be connected.

- Measurable fluid : Liquids
- Fluid temperature : 10 to 60°C  
(Consult us about 61°C or more.)
- Fluid sound speed : 1000 to 2200m/s
- Fluid kinematic viscosity : 0.3 to 40mm<sup>2</sup>/s
- Flow detector and Flow range

Detector	Flow range (L/min)	
	Min.	Max.
UCUF-04M	0 to 0.05	0 to 2.0
UCUF-04HM	0 to 0.05	0 to 3.0
UCUF-06M	0 to 0.4	0 to 8.0
UCUF-10M	0 to 1.0	0 to 20.0
UCUF-15M	0 to 3.0	0 to 50.0
UCUF-20M	0 to 4.0	0 to 80.0

\* Coaxial connector is BNC connector.

\* Consult us about other models.

- Low flow cutoff : 0 to 25%F.S.
- Linearizer : Automatic compensation with kinematic viscosity setting  
Manual /20 line-segment approximation (Option)
- Status indication : FAULT, AGC/ZERO, ALARM  
(Red LED display)
- Address switch : 1 to 32 (Selectable)
- Ambient temperature : 0 to 50°C when installed separately  
0 to 40°C when installed at 5 mm interval  
0 to 30°C when installed in close contact
- Humidity : 30 to 95% RH without condensation
- Installation : DIN rail installation
- Enclosure classification : IP20 (Indoor use)
- Materials : ABS resin (Black)
- Mass : Approx. 200g

SFC-900	<input type="checkbox"/>	<input type="checkbox"/>	Description
Analog output	0		4 to 20mA
	1		0 to 10V
	2		0 to 5V
	3		1 to 5V
Special	(Blank)		Not provided
	/ Z		Provided

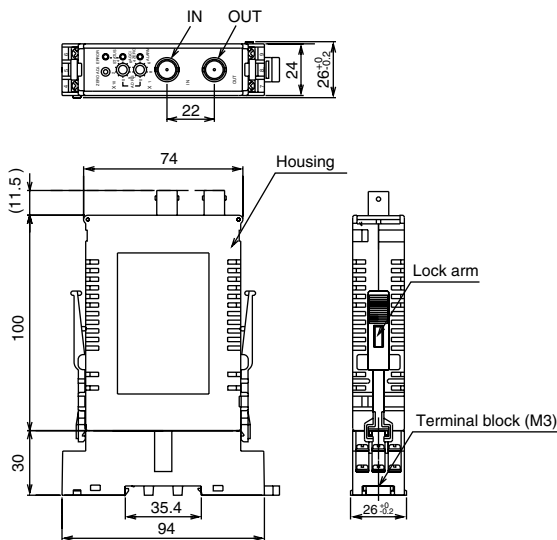
**BNC connector**

Terminal	Polarity	Description
IN	Inlet	Sensor signal input
OUT	Outlet	

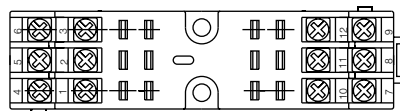
**Terminal arrangement**

Terminal No	Terminal specification/Terminal name	Description
1	AL2	Alarm output 2
2	AL1	Alarm output 1
3	COM	Common (For AL1, AL2)
4	FG	Grounding
5	0V	Power supply input DC24V
6	+24V	
7	RS485(+)	RS485 communication (+)
8	P.OUT(+)	Pulse output (+)
9	A.OUT(+)	Current output (+)
10	RS485(-)	RS485 communication (-)
11	P.OUT(-)	Pulse output (-)
12	A.OUT(-)	Current output (-)

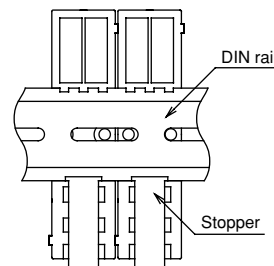
**DIMENSIONS (DIN rail installation type)**



**Terminal arrangement**



**DIN rail mount (Rear view)**



\* Specification is subject to change without notice.

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