SFC3000 Converter for UCUF Ultrasonic Flowmeters

DESCRIPTION

The UCUF series ultrasonic flowmeter is designed for measuring small flow rates of ultra-pure water and chemical liquids. All wet parts are made of special grade PFA molds and have no moving parts or sealing mechanism such as an O-ring which would accumulate liquid components. The simple and smooth construction leaves no residues and is ideal for processes such as semiconductor manufacturing which requires ultimate cleanliness.

The SFC3000 is a converter for UCUF series ultrasonic flowmeters. Using state-of-the-art technologies such as Digital Signal Processing, the converter has reduced significantly the adverse effects caused by the bubbles contained in semiconductor and chemical liquid handling processes.



FEATURES

- **Enhanced resistance to bubbles**
  The conventional ultrasonic flowmeters used to have difficulties in measuring fluids containing bubbles because the bubbles disturb the propagation of ultrasound waves. By checking the received ultrasound waves and evaluating the effects of bubbles, the DSP technology and our accumulated field experiences have eliminated the abnormal output caused by bubbles. Thus the SFC3000 has improved significantly the resistance to bubbles by reviewing the signal processing method of the ultrasonic waves compared with the conventional models.
- **Compact design**
  Separated from the detector, the converter is compact and lightweight with a plug-in construction easy for wiring.
- Cleared EMC test: EN61326-1: 2013, EN61326-2-3: 2013
- RoHS compatible
- Liquids with kinematic viscosity of as high as 40 mm^2/s can be measured
- Detector with highly clean construction
- Corrosion resistant and easy to install
- Accuracy: Within ±1% of the reading at flow velocity of 1 m/s or more
- Additional function
  · Error detection
  · Self diagnosis
- Simple parameter setting suitable for each measuring liquid

STANDARD SPECIFICATIONS

Model		SFC3000
Power supply		24 VDC±10%
Consumption current		Approx. 100 mA (Approx. 200 mA at start up)
Inrush current		Approx. 1.5 A/2 ms
Output	Pulse	Selectable from frequency pulse, totalizing pulse or fault output By open collector: Load rating: Within 30 VDC, 15 mA • Frequency pulse output Duty ratio : 1:1 Pulse rate : 0 to 1000 Hz (full scale) • Totalizing pulse output Unit : x0.1 mL, x1 mL, x10 mL, x1L Pulse width : 0.5 ms, 50 ms, 100 ms • Fault output when converter or detector is in error. NO or NC is selectable
	Alarm	Flow rate high and low alarms (2 points), or Totalized flow alarms (2 points) By open collector: Load rating: Within 30 VDC, 15 mA
	Current	4 to 20 mADC Load resistance : Within 500 Ω
Input	From detector	Exclusive cable with a BNC connector
Communication		RS485 installed Protocol : MODBUS Up to 32 units connectable

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- Measuring liquids : Liquids
- Fluid temperature : 5 to 90°C
- Fluid sound speed : 400 to 2500 m/s
- Fluid kinematic viscosity : 0.3 to 40 mm^2/s
- Flowmeter and flow range

Model	Flow range (L/min)		Connectable tube size
	Min.	Max.	
UCUF-04BL	0 to 0.1	0 to 3.0	3/8"
UCUF-04K	0 to 0.05	0 to 3.0	3/8"
UCUF-06K	0 to 0.4	0 to 8.0	3/8"
UCUF04E	0 to 0.05	0 to 3.0	3/8"
UCUF06E	0 to 0.4	0 to 8.0	3/8"
UCUF-04M	0 to 0.05	0 to 2.0	1/4"
UCUF-06M	0 to 0.4	0 to 8.0	3/8"
UCUF-10K	0 to 1.0	0 to 20.0	1/2"
UCUF-15K	0 to 3.0	0 to 50.0	3/4"
UCUF-20K	0 to 4.0	0 to 80.0	1"
UCUF-10M	0 to 1.0	0 to 20.0	1/2"
UCUF-15M	0 to 3.0	0 to 50.0	3/4"
UCUF-20M	0 to 4.0	0 to 80.0	1"

※BNC coaxial connectors are used.
※Consult us about other models.

- Low flow cutoff : 0 to 25 %F.S.
- Linearizer : Automatic compensation with kinematic viscosity setting
  Manual, max. 20 line-segment approximation (Option)
- Status indication : ERROR, ZERO/AGC, ALM, in red LEDs
- Address switch : 1 to 32 (Selectable)
- Ambient temperature : 0 to 60°C when installed alone
  0 to 50°C when installed at 5 mm intervals
  0 to 40°C when installed in contact
- Humidity : 30 to 95%RH without condensation
- Installation : DIN rail installation
- Enclosure : IP20 Indoor use
- Material, color : ABS resin, black in color
- Mass : Approx. 110 g

Model code

SFC3	□	00-	□	Description
	0			For detectors other than mentioned below
	1			UCUF-10K, 15K, 20K
			0	Analog output 4 to 20 mA DC
			1	Analog output 0 to 10 V
			2	Analog output 0 to 5 V
			3	Analog output 1 to 5 V

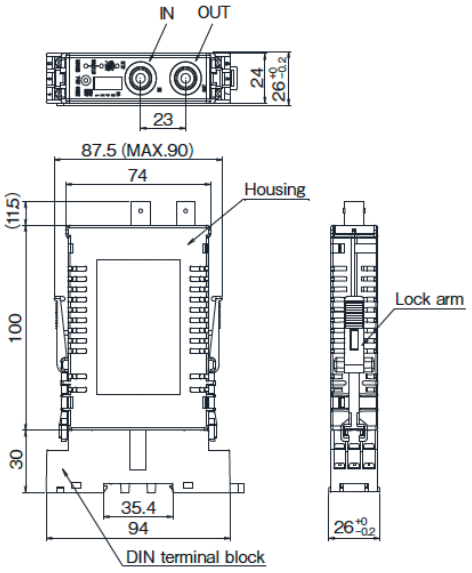
BNC connector

Terminal	Color	Polarity	Description
IN	Red	Inlet	Detector signal input
OUT	Black	Outlet	

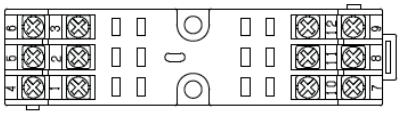
Terminal arrangement

Terminal No.	Terminal name	Description
1	AL2	Alarm output 2
2	AL1	Alarm output 1
3	COM	Common to AL1 and AL2
4	FG	Grounding
5	0V	Power supply
6	+24V	24 VDC
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 (–)

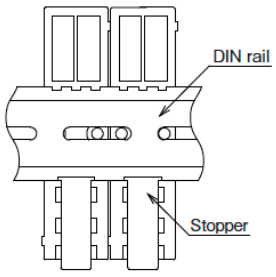
DIMENSIONS OF DIN RAIL MOUNTING TYPE



Terminal arrangement



Mounting on DIN rail



*Specification is subject to change without notice.

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