OUTLINE

The UCF 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 UCF 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.

STANDARD SPECIFICATIONS

<table>
<thead>
<tr>
<th>Model</th>
<th>SFC3000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power supply</td>
<td>24 VDC±10%</td>
</tr>
<tr>
<td>Consumption current</td>
<td>Approx. 100 mA (Approx. 200 mA at start up)</td>
</tr>
<tr>
<td>Inrush current</td>
<td>Approx. 1.5 A/2 ms</td>
</tr>
</tbody>
</table>

**Output**

- Selectable from frequency pulse, totaling pulse or fault output
  By open collector:
  - 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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Measurement and control of cleaning and CMP processes

**SFC3000** RoHS Compatible
Converter for ultra-clean, ultrasonic flowmeters UCF for liquid, small sizes

- Cleared EMC test: EN61326-1: 2013
- EN61326-2-3: 2013
- RoHS compatible
- Liquids with kinematic viscosity of as high as 40 mm²/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 functions
  - Error detection
  - Self diagnosis
- Simple parameter setting suitable for each measuring liquid
SFC3000  Converter for ultrasonic flowmeters UCUF for liquid, small sizes

- Measuring liquids: Liquids
- Fluid temperature: 5 to 90°C
- Fluid sound speed: 400 to 2500 m/s
- Fluid kinematic viscosity: 0.3 to 40 mm²/s
- Flowmeter and flow range

<table>
<thead>
<tr>
<th>Model</th>
<th>Flow range (L/min)</th>
<th>Connectable tube size</th>
</tr>
</thead>
<tbody>
<tr>
<td>UCUF-04BL</td>
<td>0 to 0.1</td>
<td>0 to 3.0, 3/8&quot;</td>
</tr>
<tr>
<td>UCUF-04K</td>
<td>0 to 0.05</td>
<td>0 to 3.0, 3/8&quot;</td>
</tr>
<tr>
<td>UCUF-06K</td>
<td>0 to 0.4</td>
<td>0 to 8.0, 3/8&quot;</td>
</tr>
<tr>
<td>UCUF-06E</td>
<td>0 to 0.4</td>
<td>0 to 8.0, 3/8&quot;</td>
</tr>
<tr>
<td>UCUF-04M</td>
<td>0 to 0.05</td>
<td>0 to 2.0, 1/4&quot;</td>
</tr>
<tr>
<td>UCUF-06M</td>
<td>0 to 0.4</td>
<td>0 to 8.0, 3/8&quot;</td>
</tr>
<tr>
<td>UCUF-10K</td>
<td>0 to 1.0</td>
<td>0 to 20.0, 1/2&quot;</td>
</tr>
<tr>
<td>UCUF-15K</td>
<td>0 to 3.0</td>
<td>0 to 50.0, 3/4&quot;</td>
</tr>
<tr>
<td>UCUF-20K</td>
<td>0 to 4.0</td>
<td>0 to 80.0, 1&quot;</td>
</tr>
<tr>
<td>UCUF-10M</td>
<td>0 to 1.0</td>
<td>0 to 20.0, 1/2&quot;</td>
</tr>
<tr>
<td>UCUF-15M</td>
<td>0 to 3.0</td>
<td>0 to 50.0, 3/4&quot;</td>
</tr>
<tr>
<td>UCUF-20M</td>
<td>0 to 4.0</td>
<td>0 to 80.0, 1&quot;</td>
</tr>
</tbody>
</table>

※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 (Select able)
- 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

DIMENSIONS OF DIN RAIL MOUNTING TYPE

Terminal arrangement

Mounting on DIN rail

* Specification is subject to change without notice.

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