The FD-301A ultrasonic flow transmitter, indicator, totaliser systems are designed for use where a sensor cannot be installed in the process. They are well suited for full pipes of liquid that contain at least 100 ppm of 100 micron or larger suspended particles or gas bubbles which act as sound “reflectors” and are necessary for operation. Ideal uses for this technology include: measuring the flow of wastewater sewage, reactivated sludge, waste activated sludge, primary sludge, slurries, crude oils, lime slurries, phosphates and pulp stock. A strength light indicates when sufficient levels of suspended “reflectors” are present to provide a flow reading.

The encapsulated, submersible, design of the transducer sensor head can be easily mounted to the pipe surface with the coupling compound and clamp supplied with the unit. A 6 m (20’) cable for connection to the transmitter/indicator unit is supplied as an integral part of the sensor. The FD-5000 sensor is utilised on pipes that range in internal diameter from 25.4 to 508 mm (1 to 20”). Flowrates can be measured in small line sizes from ¼ to 1” with use of the small pipe sensor, Model FD-5.
SPECIFICATIONS
System Accuracy: ±2% of F.S.
Velocity Range: 0.1 to 20 feet/second (0.03 to 6.1 meters/second)
Up to 30 fps optional.
"-LF" Option: 0.1 to 2.5 feet/second
Measuring Units: FPS (standard), GPM, MPS, LPM
Linearity: ±0.2% of F.S.
Repeatability: ±0.2% of F.S.
Outputs: 4 to 20 mA into 600 ohms max., isolated; 12 V pulse output for external totalizer; flow rate relay, SPDT, 5 A @ 120 Vac, resistive
Power Requirements:
120 Vac ±10%, 50/60 Hz, 6 VA max. (standard); 12/24 Vdc, 3 VA max. or 220 Vac 50/60 Hz (optional)
Liquid Requirements: full-pipe; liquid must contain a minimum of 100 ppm of suspended solids or bubbles that are at least 100 microns in size.
Dimensions:
215 H x 165 W x 114 mm D (8.5 x 6.5 x 4.5")
Transmitter Operating Temperature: -30 to 70°C (-22 to 158°F)
Sensor Operating Temperature: -40 to 121°C (-40 to 250°F)

How to Order
1) Select Sensor for pipe size
2) Select Electronics, with any desired options
Ordering Example:
1) FD-5000: £442
2) FD-301A (2" sch 40): £735
3) DPF66: £281

Transmitter/Sensors

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Price</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>FD-301A- (*)</td>
<td>£735</td>
<td>Transmitter with flow switch</td>
</tr>
<tr>
<td>FD-5</td>
<td>605</td>
<td>Sensor for ¼ to 1&quot; pipes</td>
</tr>
<tr>
<td>FD-5000</td>
<td>442</td>
<td>Clamp-on sensor for 1 to 20&quot; pipes up to 121°C (250°F)</td>
</tr>
<tr>
<td>FD-5000-HTA</td>
<td>620</td>
<td>Clamp-on sensor for 1 to 20&quot; pipes up to 148°C (300°F)</td>
</tr>
</tbody>
</table>

Pipe Size (inches) | Min. Flow Rate (GPM)* | Scale (ft/s) Std. Units | Scale (GPM) Option "-LF" | Scale (ft/s) Option "-LF" | Scale (GPM) Option "-LF" |
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>½</td>
<td>0.83</td>
<td>0 to 10</td>
<td>0 to 15</td>
<td>0 to 2.5</td>
<td>0 to 4</td>
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<td>1</td>
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<td>0 to 25</td>
<td>0 to 2.5</td>
<td>0 to 6</td>
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<tr>
<td>1½</td>
<td>3</td>
<td>0 to 10</td>
<td>0 to 75</td>
<td>0 to 2.5</td>
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<td>5</td>
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<td>0 to 100</td>
<td>0 to 2.5</td>
<td>0 to 25</td>
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<tr>
<td>4</td>
<td>20</td>
<td>0 to 10</td>
<td>0 to 400</td>
<td>0 to 2.5</td>
<td>0 to 100</td>
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<tr>
<td>6</td>
<td>30</td>
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<td>0 to 1000</td>
<td>0 to 2.5</td>
<td>0 to 225</td>
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<tr>
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<td>0 to 1500</td>
<td>0 to 2.5</td>
<td>0 to 400</td>
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<tr>
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<td>100</td>
<td>0 to 10</td>
<td>0 to 3000</td>
<td>0 to 2.5</td>
<td>0 to 625</td>
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<tr>
<td>12</td>
<td>150</td>
<td>0 to 10</td>
<td>0 to 3500</td>
<td>0 to 2.5</td>
<td>0 to 875</td>
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</table>

 Comes with complete operators manual and NIST certificate. Sensors come with cable clamp and sealant.
* Specify pipe size and pipe schedule when ordering.
Add suffix "-12VDC" or "-220VAC" for 12 Vdc or 220 Vac power input. No additional charge.
Add suffix "-24VDC" for 24 Vdc power input. No additional charge.
† Minimum flow is 0.5 ft/sec. Down to 0.05 ft/sec available on special order. Consult OMEGA.
Ordering Example: FD-5000, clamp-on sensor, FD-301A-6", SCH40, 0 to 225 GPM, transmitter scaled in GPM for low flow range, 0 to 225 GPM, 6" pipe, £442 + 735 = £1177.

Accessories

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Price</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DPF66</td>
<td>£281</td>
<td>Panel meter for flow rate and totalization</td>
</tr>
<tr>
<td>ES-2214</td>
<td>67</td>
<td>Reference Book: Industrial Waste Treatment Book</td>
</tr>
</tbody>
</table>
More than 100,000 Products Available!

- **Temperature**

- **Flow and Level**
  Air Velocity Indicators, Doppler Flowmeters, Level Measurement, Magnetic Flowmeters, Mass Flowmeters, Pitot Tubes, Pumps, Rotameters, Turbine and Paddle Wheel Flowmeters, Ultrasonic Flowmeters, Valves, Variable Area Flowmeters, Vortex Shedding Flowmeters

- **pH and Conductivity**
  Conductivity Instrumentation, Dissolved Oxygen Instrumentation, Environmental Instrumentation, pH Electrodes and Instruments, Water and Soil Analysis Instrumentation

- **Data Acquisition**

- **Pressure, Strain and Force**
  Displacement Transducers, Dynamic Measurement Force Sensors, Instrumentation for Pressure and Strain Measurements, Load Cells, Pressure Gauges, Pressure Reference Section, Pressure Switches, Pressure Transducers, Proximity Transducers, Regulators, Pressure Transmitters, Strain Gauges, Torque Transducers, Valves

- **Heaters**