FTB300 Series
Flow Verification Sensor
Your FTB300 flow verification sensor package includes a Foot Strainer (see diagram below). This strainer will prevent any small particles from entering and clogging the Sensor Body. Diaphragm pumps will require a strainer and a check valve. The part number for the strainer that includes a check valve is FPUSV-V.

Sensor connections:
- Input voltage (vdc) 8 to 28 vdc
- Output voltage (v) “high state” 4-80 v dc min (5 vdc normal)
- Output voltage (v) “low state” 0-2 v dc max
- 5 Vdc (signal output)
- 8 to 28 Vdc (Positive)

K-Factors (pulses per fluid volume)
- 30-300: 1
- 100-1000: 2
- 200-2000: 3
- 300-3000: 4
- 500-5000: 5
- 700-7000: 6

Useful formulas
- \( \frac{60}{K} = \text{rate scale factor} \)
- \( \text{rate scale factor} \times \text{Hz} = \text{flow rate in volume per minute} \)
- \( \frac{1}{K} = \text{total scale factor} \)
- \( \text{total scale factor} \times n \text{ pulses} = \text{total volume} \)
Your FTB300 flow verification sensor package includes a Foot Strainer (see diagram below). This strainer will prevent any small particles from entering and clogging the Sensor Body. Diaphragm pumps will require a strainer and a check valve. The part number for the strainer that includes a check valve is FPUSV-V.

![FTB300 Series Wiring Diagram](image)

**Wiring Diagram**

Sensor connections:
- **Red**: +8 to 28 Vdc (Positive)
- **Black**: – (Ground)
- **Bare**: +5 Vdc (signal output)
- **Ground**: 0v dc
- **Signal Output**: +5 Vdc

**K-Factors (pulses per fluid volume)**

<table>
<thead>
<tr>
<th>Body Size</th>
<th>Flow Range (ml/min)</th>
<th>Pulses per Gallon</th>
<th>Pulses per Liter</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>30-300</td>
<td>181,336</td>
<td>47,909</td>
</tr>
<tr>
<td>2</td>
<td>100-1000</td>
<td>81,509</td>
<td>21,535</td>
</tr>
<tr>
<td>3</td>
<td>200-2000</td>
<td>42,051</td>
<td>13,752</td>
</tr>
<tr>
<td>4</td>
<td>300-3000</td>
<td>25,153</td>
<td>6,646</td>
</tr>
<tr>
<td>5</td>
<td>500-5000</td>
<td>15,737</td>
<td>4,157</td>
</tr>
<tr>
<td>6</td>
<td>700-7000</td>
<td>9,375</td>
<td>2,477</td>
</tr>
</tbody>
</table>

**Useful formulas**

- $60 / K = \text{rate scale factor}$
- $\text{rate scale factor} \times \text{Hz} = \text{flow rate in volume per minute}$
- $1 / K = \text{total scale factor}$
- $\text{total scale factor} \times \text{n pulses} = \text{total volume}$
Temperature vs. Pressure

Pressure and Temperature

Pressure and temperature limits are inversely proportional. At the maximum suggested pressure the temperature should approach 70°F / 21.1°C. At the maximum suggested temperature the pressure should approach zero psi. We cannot guarantee our flowmeters will not be damaged either at or below the suggested limits simply because of many factors which influence meter integrity; stress resulting from meter misalignment, damage due to excessive vibration and/or deterioration caused by contact with certain chemicals as well as direct sunlight. These situations and others tend to reduce the strength of the materials from which the meters are manufactured.

Application Note

Although meters may be suitable for other chemicals, we cannot guarantee their suitability. It is the responsibility of the user to determine the suitability of the flowmeter in their application.
Exploded View and Parts List

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Catalog number</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>FTB300 Body .031 30-300ml/min</td>
<td>76001-300</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>.062 100-1000ml/min</td>
<td>76001-301</td>
<td></td>
</tr>
<tr>
<td></td>
<td>.093 200-2000ml/min</td>
<td>76001-302</td>
<td></td>
</tr>
<tr>
<td></td>
<td>.125 300-3000ml/min</td>
<td>76001-303</td>
<td></td>
</tr>
<tr>
<td></td>
<td>.156 500-5000ml/min</td>
<td>76001-304</td>
<td></td>
</tr>
<tr>
<td></td>
<td>.187 700-7000ml/min</td>
<td>76001-305</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Tubing, PVC</td>
<td>76001-299</td>
<td>2</td>
</tr>
<tr>
<td>3.</td>
<td>O-Ring, Viton</td>
<td>90003-012</td>
<td>2</td>
</tr>
<tr>
<td>4.</td>
<td>Adapter .250&quot; F/NPT, PVC</td>
<td>76000-137</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Adapter .125&quot; F/NPT, PVC</td>
<td>76000-456</td>
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<tr>
<td></td>
<td>Adapter .375&quot; Tubing Connection, PVDF</td>
<td>90002-038</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Adapter .250&quot; Tubing Connection, PVDF</td>
<td>90002-042</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Adapter .500&quot; ID Hose Barb, PVC</td>
<td>76001-360</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Adapter .500&quot; F/NPT, PVC</td>
<td>76001-359</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Adapter .500&quot; M/NPT, PVC</td>
<td>76001-358</td>
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</tr>
<tr>
<td>5.</td>
<td>Tube Nut</td>
<td>90002-305</td>
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</tr>
<tr>
<td>6.</td>
<td>Sensor Assembly</td>
<td>71010-182</td>
<td>1</td>
</tr>
<tr>
<td>7.</td>
<td>Screws, SS</td>
<td>90011-113</td>
<td>2</td>
</tr>
<tr>
<td>8.</td>
<td>Screws, SS</td>
<td>90011-190</td>
<td>4</td>
</tr>
<tr>
<td>9.</td>
<td>Lens Cap, PVC (Optional PVDF)</td>
<td>90002-227</td>
<td>1</td>
</tr>
<tr>
<td>10.</td>
<td>Axel, PVDF</td>
<td>90007-592</td>
<td>1</td>
</tr>
<tr>
<td>11.</td>
<td>Paddle, PVDF</td>
<td>90002-229</td>
<td>1</td>
</tr>
<tr>
<td>12.</td>
<td>O-Ring, Viton</td>
<td>90003-143</td>
<td>1</td>
</tr>
<tr>
<td>13.</td>
<td>Screws, #4x.50 Phil Blk</td>
<td>90011-178</td>
<td>2</td>
</tr>
</tbody>
</table>

**NOTE:** The “Exploded View” drawing illustrates assembly of the FTB300 Flow Verification Sensor. If your sensor needs to be cleaned refer to this drawing when reassembling the unit.
Notes:
WARRANTY/DISCLAIMER

OMEGA ENGINEERING, INC. warrants this unit to be free of defects in materials and workmanship for a period of 13 months from date of purchase. OMEGA’s WARRANTY adds an additional one (1) month grace period to the normal one (1) year product warranty to cover handling and shipping time. This ensures that OMEGA’s customers receive maximum coverage on each product.

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RETURN REQUESTS/INQUIRIES

Direct all warranty and repair requests/inquiries to the OMEGA Customer Service Department. BEFORE RETURNING ANY PRODUCT(S) TO OMEGA, PURCHASER MUST OBTAIN AN AUTHORIZED RETURN (AR) NUMBER FROM OMEGA’S CUSTOMER SERVICE DEPARTMENT (IN ORDER TO AVOID PROCESSING DELAYS). The assigned AR number should then be marked on the outside of the return package and on any correspondence.

The purchaser is responsible for shipping charges, freight, insurance and proper packaging to prevent breakage in transit.

FOR WARRANTY RETURNS, please have the following information available BEFORE contacting OMEGA:

1. Purchase Order number under which the product was PURCHASED,
2. Model and serial number of the product under warranty, and
3. Repair instructions and/or specific problems relative to the product.

OMEGA’s policy is to make running changes, not model changes, whenever an improvement is possible. This affords our customers the latest in technology and engineering.

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