FP-5060 SERIES
Micro-Flow Sensors
SAFETY INSTRUCTIONS
1. Do not remove from pressurized lines.
2. Do not exceed maximum temperature/pressure specifications.
3. Do not install/service without following installation instructions (see sensor manual).
4. Wear safety goggles and faceshield during installation/service.
5. Do not alter product construction.
6. Failure to follow safety instructions could result in severe personal injury!

1. Instrument Wiring

Technical Notes:
- Use 2-conductor twisted-pair shielded cable for cable splices up to 300 m (1000 ft) max.
- Maintain cable shield through cable splice.
- Route sensor cable away from AC power lines.
- AUX power required when used with any OMEGA FP-90 Series Flow Transmitter.

Technical Notes:
- A 10 kΩ pull-up resistor is recommended as shown, if not provided internal to the instrument.
- Contact OMEGA Technical Support for assistance.

2. Recommended Sensor Position

Technical Notes:
- Horizontal surface mount (±30°) recommended for optimum performance.
- Suitable for clean fluids only. Suspended solids will cause mechanical failure.
- ¼ in. NPT or ISO 7/1-R¼ (male) port connections
- NEMA 4X/IP65 splashproof enclosure
3. Surface Mount Instructions

1. Mounting surface

2. Remove sensor then use correct screws for panel material.

Mounting surface (top), 68 mm (2.68 in.) bolt circle

Mounting surface (side)

4. Fitting Installation

CAUTION:
- Maximum pipe fitting torque: 10 ft - lbs (13 N m).
- DO NOT overtighten. Failure to observe torque specification may permanently damage sensor ports.

Technical Notes:
- Compatible fittings (customer supplied): Female union (shown), reducer, or hose barb type.
- Always apply thread sealant to sensor port threads to prevent leakage.

5. Calibration

The K-Factors listed below represent the number of pulses the sensor will generate for each engineering unit of fluid which passes. They are listed in U.S. gallons, liters and mL by sensor model:

<table>
<thead>
<tr>
<th>Sensor Model</th>
<th>PULSES PER U.S. GAL</th>
<th>PULSES PER LITER</th>
<th>PULSES PER mL</th>
</tr>
</thead>
<tbody>
<tr>
<td>FP-5061</td>
<td>9950</td>
<td>2629</td>
<td>2.629</td>
</tr>
<tr>
<td>FP-5062</td>
<td>9950</td>
<td>2629</td>
<td>2.629</td>
</tr>
<tr>
<td>FP-5063</td>
<td>3160</td>
<td>834.9</td>
<td>0.835</td>
</tr>
</tbody>
</table>
6. Specifications

General
Flow range:
5061 and 5062:  0.11 to 2.6 lpm (0.03 to 0.7 gpm)
5063:  1.13 to 12.11 lpm (0.3 to 3.2 gpm)

Linearity: ±1.2% of full range
Repeatability: ±0.5% of full range
Connections: ¼ in. NPT (male) or ISO 7/1 - R¼ (male)
Cable length: 8 m (25 ft.), can splice up to 300 m (1000 ft.) max.
Cable type: 2-conductor twisted pair w/shield (Belden 8451)
Weight: 250 g (9.6 oz.)

Wetted Materials
• Sensor body and cover: 40% glass filled Polyethylene Sulfide
• Rotor: PEEK, natural, unfilled
• Rotor O-ring: Viton®
• Cover O-ring: Viton®

Electrical
Supply voltage: 5 to 24 VDC, regulated
Supply current: 10 mA max.
Output type: Open-collector NPN transistor, 10 mA max sink

Quality Standard
Manufactured under ISO 9001 and ISO 14001

Fluid Conditions
Max. pressure/temperature: 0 to 80 °C (32 to 176 °F)
@ 5.5 bar (80 psi) max

Dimensions
Top View

Side View

Mounting tabs for metric M3 or standard #6 screws on 68 mm (2.68 in.) bolt circle

Pressure Drop Across Sensor vs. Flow Rate

<table>
<thead>
<tr>
<th>psi/bar</th>
<th>Pressure Drop Across Sensor vs. Flow Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>FP-5061/FP-5062</td>
</tr>
<tr>
<td>25</td>
<td>FP-5063</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>0.5</td>
<td>1</td>
</tr>
<tr>
<td>1</td>
<td>1.5</td>
</tr>
<tr>
<td>1.5</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>2.5</td>
</tr>
<tr>
<td>2.5</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>L/m</td>
</tr>
</tbody>
</table>

Dimensions

Top View

Side View

Mounting tabs for metric M3 or standard #6 screws on 68 mm (2.68 in.) bolt circle
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.

If the unit malfunctions, it must be returned to the factory for evaluation. OMEGA's Customer Service Department will issue an Authorized Return (AR) number immediately upon phone or written request. Upon examination by OMEGA, if the unit is found to be defective, it will be repaired or replaced at no charge. OMEGA’s WARRANTY does not apply to defects resulting from any action of the purchaser, including but not limited to mishandling, improper interfacing, operation outside of design limits, improper repair, or unauthorized modification. This WARRANTY is VOID if the unit shows evidence of having been tampered with or shows evidence of having been damaged as a result of excessive corrosion; or current, heat, moisture or vibration; improper specification; misapplication; misuse or other operating conditions outside of OMEGA’s control. Components in which wear is not warranted, include but are not limited to contact points, fuses, and triacs.

OMEGA is pleased to offer suggestions on the use of its various products. However, OMEGA neither assumes responsibility for any omissions or errors nor assumes liability for any damages that result from the use of its products in accordance with information provided by OMEGA, either verbal or written. OMEGA warrants only that the parts manufactured by the company will be as specified and free of defects. OMEGA MAKES NO OTHER WARRANTIES OR REPRESENTATIONS OF ANY KIND WHATSOEVER, EXPRESSED OR IMPLIED, EXCEPT THAT OF TITLE, AND ALL IMPLIED WARRANTIES INCLUDING ANY WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY DISCLAIMED. LIMITATION OF LIABILITY: The remedies of purchaser set forth herein are exclusive, and the total liability of OMEGA with respect to this order, whether based on contract, warranty, negligence, indemnification, strict liability or otherwise, shall not exceed the purchase price of the component upon which liability is based. In no event shall OMEGA be liable for consequential, incidental or special damages.

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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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