FPR110 Series
Visual Flow Indicator

**Description:**
FPR110 units monitor dynamic fluid flow. The rotor reacts to turbulence, pulsation, entrained air, and other flow abnormalities induced in the flow stream by other process hardware. For optimum performance, install units where nominal flow conditions exist, with ports located at the top. Incoming flow may be placed to either port. A minimum of 8” of straight pipe on the inlet side is required.

**Installation:**
FPR110 series sensors connect to piping via NPT mating thread forms. The following guidelines are provided to assist with installation of the unit:
1. Apply pipe thread sealant to male pipe threads.
2. Thread unit onto male pipe thread until hand-tight.
3. Tighten pipe 1 to 1-1/2 additional turns.
4. If improper seal results, continue turning pipe into unit in 1/4 turn increments. Do not exceed one additional turn. Recommended Pipe Sealant: PFA Thread Tape.

**Panel Mounting:**
Any FPR110 series sensor may be panel mounted using holes integrated into the bodies. PLASTIC BODIES: Two (2) mounting ears are provided at the body centerline to receive #8 BSPP screws. NOTE: ANSI T Type 23 self-tapping screws are recommended. They may be replaced with standard machine screws if reinstallation should be required. BRASS BODIES: Two mounting holes are provided on the body centerline, as shown. #8 32UNC-2B screws are required for mounting.

**Filtration and Cleaning:**
150 micron filtration is recommended. However, should foreign particles enter the FPR110 sensor, accumulation is easily cleared by removing the lens from the body. The lens is removed by turning its center rib 45° counter-clockwise and then pulling it out. To reinstall the lens, simply reverse the process. Pressure must be relieved from the system prior to sensor clean-out.

<table>
<thead>
<tr>
<th>Flow Range—GPM</th>
<th>Standard</th>
<th>Low Flow</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body Material</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Port Size</td>
<td>Part Number NPT Threads</td>
<td>Part Number BSPP Threads</td>
</tr>
<tr>
<td>Polypropylene</td>
<td>25°</td>
<td>FPR111-BSP</td>
</tr>
<tr>
<td></td>
<td>50°</td>
<td>FPR112-BSP</td>
</tr>
<tr>
<td>Brass</td>
<td>25°</td>
<td>FPR113-BSP</td>
</tr>
<tr>
<td></td>
<td>50°</td>
<td>FPR114-BSP</td>
</tr>
<tr>
<td></td>
<td>75°</td>
<td>FPR115-BSP</td>
</tr>
</tbody>
</table>

**Important Points!**
Product must be maintained and installed in strict accordance with the National Electrical Code and Omega product catalog and instruction bulletin. Failure to observe this warning could result in serious injuries or damages.

- An appropriate explosion-proof enclosure or intrinsically safe interface device must be used for hazardous area applications involving such things as leak-free seal, without damage to the system.
- Pressure and temperature limitations shown on individual catalog pages and drawings for the specified flow switches must not be exceeded. These pressures and temperatures take into consideration possible system surge pressures/temperatures and their frequencies.
- Selection of materials for compatibility with the media is critical to the life and operation of Omega flow switches. Take care in the proper selection of materials of construction; particularly wetted materials.
- Life expectancy of switch contacts varies with applications.
- Ambient temperature changes do affect switch set points, since the specific gravity of a liquid can vary with temperature.
- Flow switches have been designed to resist shock and vibration; however, shock and vibration should be minimized.
- Liquid media containing particulate and/or debris should be filtered to ensure proper operation of Omega products.
- Electrical entries and mounting points may require liquid/vapor sealing if located in an enclosed tank.
- Flow switches must not be field repaired.
- Physical damaged sustained by the product may render it unserviceable.

**Specifications**

<table>
<thead>
<tr>
<th>Wetted Materials</th>
<th>Stainless Steel, Brass or Polypropylene (Hydrolytically Stable, Glass-Reinforced)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rotor Pin</td>
<td>Ceramic</td>
</tr>
<tr>
<td>Rotor</td>
<td>High Visibility Orange Molded Nylon or PFA/PPS</td>
</tr>
<tr>
<td>Lens</td>
<td>Polysulfone</td>
</tr>
<tr>
<td>O-Ring</td>
<td>Buna or FKM</td>
</tr>
<tr>
<td>Operating Pressure, Max. Brass Body</td>
<td>200 psig @ 70°F/80 psig @ 212°F</td>
</tr>
<tr>
<td>Operating Temperature, Max. Brass Body</td>
<td>212°F (100.0°C)</td>
</tr>
</tbody>
</table>
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 tracks.

OMEGA is pleased to offer suggestions on the use of its various products. However, OMEGA neither assumes responsibility for any omissions or errors nor guarantees 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.

CONDITIONS: Equipment sold by OMEGA is not intended to be used, nor shall it be used, (1) as a “Basic Component” under 10 CFR 21 (NRC), used in or with any nuclear installation or activity; or (2) in medical applications or used on humans. Should any Product(s) be used in or with any nuclear installation or activity, medical application, used on humans, or in any way, OMEGA assumes no responsibility as set forth in our basic WARRANTY/DISCLAIMER language, and, additionally, purchaser will indemnify OMEGA and hold OMEGA harmless from any liability or damage whatsoever arising out of the use of the Product(s) in such a manner.

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.

FOR NON-WARRANTY REPAIRS, consult OMEGA for current repair charges. Have the following information available BEFORE contacting OMEGA:
1. Purchase Order number to cover the COST of the repair,
2. Model and serial number of the product; and
3. Repair Instructions and/or specific problems relative to the product.

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

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