ONICON insertion turbine flow meters are suitable for measuring electrically conductive water-based liquids. The F-1110 model provides non-isolated 4-20 mA and 0-10 V analog output signals that are linear with the flow rate.

APPLICATIONS

- Closed loop chilled water, hot water, condenser water & water/glycol/brine solutions for HVAC
- Process water & water mixtures
- Domestic water (NSF/ANSI 61/372 version*)

GENERAL SPECIFICATIONS

ACCURACY
± 0.5% of reading at calibrated velocity
± 1% of reading from 3 to 30 ft/s (10:1 range)
± 2% of reading from 0.4 to 20 ft/s (50:1 range)

SENSING METHOD
Electronic impedance sensing
(non-magnetic and non-photoelectric)

PIPE SIZE RANGE
1¼” through 72” nominal diameter

SUPPLY VOLTAGE
24 ± 4 V AC/DC at 80 mA

LIQUID TEMPERATURE RANGE
Standard: 180° F continuous, 200° F peak
High Temp: 280° F continuous, 300° F peak
Meters operating above 250° F require 316 SS construction option

AMBIENT TEMPERATURE RANGE
-5° to 160° F (-20° to 70° C)

OPERATING PRESSURE
400 PSI maximum

PRESSURE DROP
Less than 1 PSI at 20 ft/s in 1½” pipe,
decreasing in larger pipes and lower velocities

OUTPUT SIGNALS PROVIDED
Analog Outputs (Non-Isolated)
Jumper selectable: 4-20 mA / 0-10V / 0-5V
Frequency Output
0 – 15 V peak pulse

CALIBRATION
Every ONICON flow meter is wet calibrated in a flow laboratory against primary volumetric standards that are directly traceable to N.I.S.T. A certificate of calibration accompanies every meter.

FEATURES

Unmatched Price vs. Performance - Custom calibrated, highly accurate instrumentation at very competitive prices.

Excellent Long-term Reliability -
Patented electronic sensing is resistant to scale and particulate matter. Low mass turbines with engineered jewel bearing systems provide a mechanical system that virtually does not wear.

Industry Leading Two-year “No-fault” Warranty -
Reduces start-up costs with extended coverage to include accidental installation damage (miswiring, etc.) Certain exclusions apply. See our complete warranty statement for details.

Simplified Hot Tap Insertion Design -
Standard on every insertion flow meter. Allows for insertion and removal by hand without system shutdown.

OPERATING RANGE FOR COMMON PIPE SIZES

<table>
<thead>
<tr>
<th>Pipe Size (Inches)</th>
<th>Flow Rate (GPM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 ¼</td>
<td>0.8 – 95</td>
</tr>
<tr>
<td>1 ½</td>
<td>1 – 130</td>
</tr>
<tr>
<td>2</td>
<td>2 – 210</td>
</tr>
<tr>
<td>2½</td>
<td>2.5 – 230</td>
</tr>
<tr>
<td>3</td>
<td>4 – 460</td>
</tr>
<tr>
<td>4</td>
<td>8 – 800</td>
</tr>
<tr>
<td>6</td>
<td>15 – 1,800</td>
</tr>
<tr>
<td>8</td>
<td>26 – 3,100</td>
</tr>
<tr>
<td>10</td>
<td>42 – 4,900</td>
</tr>
<tr>
<td>12</td>
<td>60 – 7,050</td>
</tr>
<tr>
<td>14</td>
<td>72 – 8,600</td>
</tr>
<tr>
<td>16</td>
<td>98 – 11,400</td>
</tr>
<tr>
<td>18</td>
<td>120 – 14,600</td>
</tr>
<tr>
<td>20</td>
<td>150 – 18,100</td>
</tr>
<tr>
<td>24</td>
<td>230 – 26,500</td>
</tr>
<tr>
<td>30</td>
<td>360 – 41,900</td>
</tr>
<tr>
<td>36</td>
<td>510 – 60,900</td>
</tr>
</tbody>
</table>

±2% accuracy begins at 0.4 ft/s

(continued on back)
F-1110 SPECIFICATIONS (cont.)

MATERIAL
Wetted metal components:
- Standard: Electroless nickel plated brass
- Optional: 316 stainless steel
- Optional: NSF/ANSI 61/372 version*

ELECTRONICS ENCLOSURE
- Standard: Weathertight aluminum enclosure
- Optional: Submersible enclosure

ELECTRICAL CONNECTIONS
- 4-wire recommended for analog
- Standard: 10' of cable with ½” NPT conduit connection
- Optional: Indoor DIN connector with 10' of plenum rated cable

ALSO AVAILABLE

F-1110 WIRING INFORMATION

<table>
<thead>
<tr>
<th>WIRE COLOR</th>
<th>DESCRIPTION</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>RED</td>
<td>(+) 24 V AC/DC supply voltage, 50 mA</td>
<td>Connect to power supply positive</td>
</tr>
<tr>
<td>BLACK</td>
<td>(-) Common ground (Common with pipe ground)</td>
<td>Connect to power supply negative &amp; analog input ground</td>
</tr>
<tr>
<td>GREEN</td>
<td>(+) Frequency output signal: 0-15 V peak pulse</td>
<td>Required when meter is connected to local display or Btu meter</td>
</tr>
<tr>
<td>BLUE</td>
<td>(+) Analog signal</td>
<td>Jumper selectable: 4-20 mA / 0-10V / 0-5V</td>
</tr>
<tr>
<td>BROWN</td>
<td>(-) Analog signal</td>
<td></td>
</tr>
</tbody>
</table>

F-1110 WIRING DIAGRAM

Flow meter into control system (no display or Btu meter)

NOTE:
1. Black wire is common with the pipe ground (typically earth ground).
2. Frequency output required for ONICON display module or Btu meter, refer to wiring diagram for peripheral device.

TYPICAL METER INSTALLATION
(New construction or scheduled shutdown)

- Acceptable to install in vertical pipe
- Position meter anywhere in upper 240° for horizontal pipe

NOTE:
Installation kits vary based on pipe material and application. For installations in pressurized (live) systems, use “hot tap” 1¼” installation kit and drill hole using a 1” wet tap drill.