ONICON insertion turbine flow meters are suitable for measuring electrically conductive water-based liquids. The F-1200 model provides a high-resolution frequency output for connection to an ONICON display or Btu meter.

APPLICATIONS
- Closed loop chilled water, hot water, condenser water & water/glycol/brine solutions for HVAC
- Process water & water mixtures
- Domestic water

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
2½” through 72” nominal diameter

SUPPLY VOLTAGE
24 ± 4 V AC/DC at 30 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°F to 160°F (-20°F to 70°C)

OPERATING PRESSURE
400 PSI maximum

PRESSURE DROP
Less than 1 PSI at 20 ft/s in 2½” pipe,
decreasing in larger pipes and lower velocities

OUTPUT SIGNALS PROVIDED
Frequency Output
0 – 15 V peak pulse, typically less than 300 Hz

(continued on back)

OPERATING RANGE FOR COMMON PIPE SIZES

<table>
<thead>
<tr>
<th>Pipe Size (Inches)</th>
<th>Flow Rate (GPM)</th>
</tr>
</thead>
<tbody>
<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>

CALIBRATION

Every ONICON flow meter is wet calibrated in our 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.
F-1200 SPECIFICATIONS cont.

MATERIAL
Wetted metal components:
  Standard: Electroless nickel plated brass
  Optional: 316 stainless steel

ELECTRONICS ENCLOSURE
Standard: Weather tight aluminum enclosure
Optional: Submersible enclosure

ELECTRICAL CONNECTIONS
3-wire for frequency output
Standard: 10’ of cable with ½” NPT conduit connection
Optional: Indoor DIN connector with 10’ of plenum rated cable

ALSO AVAILABLE
Display Modules
Btu Measurement Systems

F-1200 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, 30 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</td>
</tr>
<tr>
<td>GREEN</td>
<td>(+) Frequency output signal: 0-15 V peak pulse</td>
<td>Signal for ONICON display or Btu meter</td>
</tr>
</tbody>
</table>

DIAGNOSTIC SIGNALS

<table>
<thead>
<tr>
<th>WIRE COLOR</th>
<th>DESCRIPTION</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>ORANGE</td>
<td>Bottom turbine frequency</td>
<td>These signals are for diagnostic purposes - connect to local display or Btu meter</td>
</tr>
<tr>
<td>WHITE</td>
<td>Top turbine frequency</td>
<td></td>
</tr>
</tbody>
</table>

F-1200 Wiring Diagram

NOTE: Black wire is common with the pipe ground (typically earth ground).

Typical Meter Installation
(New construction or scheduled shutdown)

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

CONNECT FACTORY WIRES TO FIELD WIRES IN APPROPRIATE JUNCTION BOX.

Minimum Hole Size = 1” Must be centered

1¼” for hot tap

Typically 30” - 36” depending on pipe size and height of valve assembly.

Detail of hot tap adapter with turbine assembly withdrawn

1” Full port ball valve
1” Close nipple
1” Branch outlet

Insertion depth gage provided with each meter

Standard Installation Kit for Steel Pipe

1½” FNPT conduit connection

ONICON Display or Btu Meter

This area acceptable

Horizontal Run Pipe

Clearance required for installation

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.