This solution note focuses on accuracy and stability needed for pH measurement in high purity water applications.

**Application**

Measurement and control of water pH to minimize corrosion and scaling in Electric Utilities, Cogens, Industrial Boilers and other Steam Generators.

- Accurate measurement of the pH of water
- Maintaining and calibrating the pH measurement equipment in lesser time
- High purity water applications

**The Problem**

Measurement of water pH is critical to preventing unplanned outages due to corrosion and scaling in boilers, turbines and other plant processes. Measurement of pH in high purity water used in Power Plants is difficult and is often described as a nightmare by plant chemists.

Honeywell eliminates these problems with a completely assembled pH measuring solution saving thousands of dollars in down time due to unplanned outages and hundreds of dollars in time for installation, calibration and maintenance.

**Contributing factors:**

- Low conductivity of High Purity Water
- Variations in reference junction voltage
- Solution temperature compensation
- Streaming current interference
- Inconsistent sample mixing

**Features**

- Accuracy Required: +/- 0.1 pH
- Stability/Drift: +/- 0.1 pH/week
- Water Conductivity: > 0.055 umhos/cm
- Completely assembled pH measurement system
- Menu driven configuration / calibration displays
- Electrode assembly easily removed without special tools or instructions
- Easy to fill reference electrode
- Quick-connect cable connections
The Honeywell Hi-pHurity pH Measurement system’s superior accuracy and stability. Resistivity = 18 megohms - cm

Specifications: Model HPW7000/DL421 High Purity Water pH Measurement Solution

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH Range</td>
<td>4 to 10 pH</td>
</tr>
<tr>
<td>Output</td>
<td>to DirectLine Transmitter or 9782/7082 Analyzer</td>
</tr>
<tr>
<td>Conductivity Range</td>
<td>&gt; 0.055 umhos</td>
</tr>
<tr>
<td>Accuracy / Noise</td>
<td>+/- 0.1 pH / &lt; 0.1 pH</td>
</tr>
<tr>
<td>Stability / Drift</td>
<td>+/- 0.1 pH per week</td>
</tr>
<tr>
<td>Process Connection</td>
<td>1/4 in. male, side mounted on flow assembly</td>
</tr>
<tr>
<td>Downstream Back Pressure</td>
<td>-10 in. W.C. (min), +1.0 in. W.C. (max)</td>
</tr>
<tr>
<td>Temperature: Assembly/Electrodes</td>
<td>10 to 45 °C / 10 to 80 °C</td>
</tr>
<tr>
<td>Flow Assembly Material</td>
<td>316L SS</td>
</tr>
<tr>
<td>Electrode Assembly Material</td>
<td>316L SS</td>
</tr>
<tr>
<td>Finish</td>
<td>150-grit polish minimum</td>
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</tbody>
</table>

More Information
For more information on High Purity Water pH Measurement, visit www.honeywellprocess.com, or contact your Honeywell account manager.

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