# Robust pH Sensor Accurately Measures Wort / Water Interface

#### **RESULTS**

- · Faster beer change over
- · Reduce lost beer with tighter measurements
- · Reduce off spec product
- Increase Brewery Profits



#### **APPLICATION**

Beer - Push Water Interface

### **CHALLENGE**

After Wort is boiled in the brew kettle, the green beer is "pushed" by water to the whirlpool to prepare for fermentation. Normally conductivity is a good technology to determine the phase interface between the beer and the push water, however, some brands have conductivity levels similar to the push water. In those instances, pH can be utilized for phase interface detection since the beer normally has a significantly different pH value than the CIP chemicals and beer push water.

Normal pH sensors will experience premature failures due to the severity of the application. The pH sensor is exposed to high temperature fluctuations. The Wort is normally 90°C, CIP chemicals are 80 - 90°C, and the push water and rinse water is at ambient temperatures. This extreme temperature fluctuation will cause cracks in the pH sensing glass which results in a critical failure. The sensor must also withstand hot caustic phases, which decrease the sensor sensitivity to pH changes. Finally, the pH sensor must also be robust to high flow rates.

### **SOLUTION**

The PERpH-X® Model 3400 pH Sensor from Rosemount Analytical can accurately differentiate between hot wort, CIP solutions, and rinse water. The AccuGlass® technology and PERpH-X's elegant design can withstand the harsh conditions and fluctuations. The rebuildable design lengthens the sensor's life. Finally fast response to real pH changes optimizes product uptime and accelerates the change over process.

The Model 1056 Intelligent Analyzer with intuitive menu screens works with the Model 3400. The 1056 allows up to two sensors inputs, reducing cost and minimizing panel space. The 1056 has an optional Profibus® digital communications output that can integrate with either a DCS or PLC. Another digital option is HART® Protocol that can optimize the sensor's performance when used with AMS.





#### **INSTRUMENTATION**

# Model 1056 Dual Input Intelligent Analyzer

- Up to two sensor inputs
- · Optional digital protocols available
- Easy to use menu structure
- Easy to read display



# PERpH-X<sup>®</sup> Model 3400 pH Sensor

- · Highly accurate, fast responding pH sensor
- Able to withstand high temperature fluctuations
- · Easy to rebuild sensor design
- Fast responding internal RTD for temperature compensation
- Easy to use Retractable assembly













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