# AVCOMM's Effective PH Monitoring for Food and Beverage

Monitoring and control of water quality in the food and beverage industry is very important because water is one of the main ingredients in many foods and beverages. Ensuring the safety and stability of water quality is a key element in ensuring product quality and consumer health. One of the key indicators is the pH of the water, which reflects the acidity or alkalinity of the water. Incorrect pH levels can lead to lower quality food and beverages and even have a negative impact on consumer health.
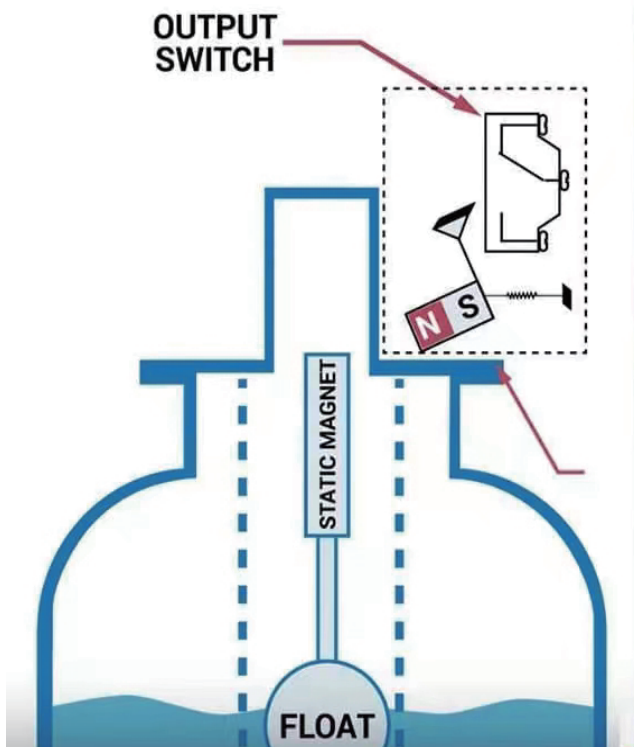
The Challenge

In general, the food and beverage industry has typically monitored the pH of water through regular sampling and laboratory testing. However, this method suffers from time delays, high costs, and test results that are not available in real time.

·**Cost:** A high quality water quality pH sensor needs to be accurate and reliable and meet the required food hygiene standards. Such sensors are usually more expensive, adding to the cost of the project.

·**Accuracy and Stability:** The food and beverage industry require very high levels of accurate water quality pH monitoring to ensure product quality and safety. However, there can be some challenges in sensor accuracy and stability. Due to environmental factors, electrode aging or contamination, sensor readings may show severe drift or deviation, leading to misclassification.

·**Cleaning and sanitation:** The food and beverage industry are extremely sensitive to sanitation metrics and requires sensors that can be easily cleaned and sanitized during use to prevent cross contamination. However, traditional pH sensors are difficult to clean, increasing the complexity of cleaning and maintenance.

·**Real–time monitoring and data analysis:** The food and beverage industry require real–time water quality pH information and data recording and analysis. However, some sensor systems may have delays or instability in data acquisition, transmission, and processing, limiting the real–time monitoring and accuracy.

·**Durability and adaptability:** The food and beverage industry have a complex and changing working environment, and sensors need to have a certain level of durability and adaptability. For example, sensors must be able to withstand variable temperatures, high humidity, acid and alkali solutions, and other conditions to ensure long–term stable operation.

The Solution

AVCOMM's AVC–WS102PH PH sensor is designed to meet these challenges head–on. The sensor features an integrated design, lightweight and straightforward structure, which reduces production costs and makes it more competitive in the food and beverage industry.

The sensor is known for its high precision, rapid response, excellent interchangeability, and accurate measurements. This is essential to ensure quality control during the production of food and beverage.

AVCOMM Technologies Inc.

333 West Loop North, Suite 460 Houston, TX 77024, USA

info@avcomm.us

www.avcomm.us

System Parameter	
Power supply	DC7~30V
Power consumption	0.3W
Cable length	5m or customize
Electrode withstand voltage	0.6MPa
Ingress protection	IP68
Operating temperature	0~60℃
Dimension	266x30（mm）
Detaction Parameter	
PH measurement range	0~14pH
PH resolution	0.01pH
PH measurement error	±0.15pH
Temperature measurement range	0~60℃
Temperature resolution	0.1℃
Temperature measurement error	±0.5℃
Output	RS485 (Modbus RTU）
Communication Protocol	
Protocol	Modbus RTU
Data bits	8 bit
Parity bit	No
Stop bit	1
Error detecting code	CRC
Baud rate	2400bit/s、4800bit/s、9600 bit/s can be set，factory default 4800bit/s

AVCOMM's sensor are easy to clean and disinfect to prevent cross contamination and bacterial growth. The double salt bridge design of the reference improves its resistance to contamination. The integrated design ensures the reliability and hygiene of the sensor in food and beverage environments. With its IP68 protection level, it can be submerged and left in–situ for long–term monitoring. The device also features an automatic temperature compensation function that can be switched to manual compensation at will, adapting requirements of various food and beverage production processes.

The AVC–WS102PH is a device that can monitor and measure the pH of water samples in real time. The device can be placed directly in the water stream of a food and beverage production or embedded in a water treatment system to read the pH value in real time.

AVCOMM's ATMS IoT cloud platform collects sensor data and visualizes it. If the data reaches alarming levels, the platform issues an alert.

The ATMS platform features:
· MQTT and RESTful API for easy data access from an Industrial IoT gateway.
· Real–time online monitoring, analysis, and reporting.
· Remote cloud security and visual management.
· Flexible and secured access from any web browser on a PC or smartphone.

Value Delivered

The AVCOMM PH sensor provides the following benefits:

· **Cost reduction:** The sensor is relatively inexpensive and have a long service life, reducing the need for frequent sensor replacement and thus lowering operating costs.

· **Durability:** Its integrated design enables it to withstand harsh environments for extended periods. The IP68 rating ensures the device's safe and proper functioning. The double salt bridge design of the reference improves its resistance to contamination.

· **Accuracy and Alertness:** The sensor responds swiftly, provides accurate data, and can detect anomalies in various types of water. The ATMS platform can send timely alerts based on accurate data.

Future Outlook

With its high accuracy and long–term stability of detection data, pH sensors ensure that the food and beverage industry can accurately monitor and control the PH value of their products, thereby improving product quality. Sensors using low power consumption and renewable energy sources to minimize environmental impact are one of the trends in sensor design and application in the future. Through continuous development, sensors will provide a more accurate, comprehensive, and sustainable monitoring solution for the food and beverage industry. This will improve product quality control, production efficiency and management of related environmental issues.

Product Link

AVC–WS102PH PH sensor
https://inc.avcomm.us/shop/avc–ws102ph–2320?
page=2&category=42#attr=

PH sensor