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603 pH Sensor with Non-Porous Junction

Overview

Traditionally pH sensors have been susceptible to fouling/ plugging at the surface of the reference junction or contamination of the reference cell. These failure modes are generally related to the porosity of the reference junction. The 603's overcomes these limitations with a patented reference junction constructed from non-porous, ionically conductive, hard, polymeric material.

Benefits and Features

- pH response in seconds in most applications
- Significant coagulant and reagent savings from no pH overshoot, resulting in better sustainable plant performance at lower cost.
- Not affected by environments that coat and plug porous junctions
- Not affected by ammonia, chloride or sulfide ions. Solid reference stops ion flow and resulting pH drift
- Extremely low pH reference maintenance
- Reduced waste; operating life typically 3 to 5 times longer than conventional pH sensors
- Continuous water + waste applications
- Reduced inventory, universal mounting has ¾ NPT threads for insertion, flowing stream, and submersion applications
- Complete encapsulated design allows total submersion
- Use with any make of pH meter*
- Plant, process or laboratory use

Applications

The 603 can be applied to a very broad range of industrial pH applications. Because of its non-porous junction, it is particularly well suited to applications that tend to coat or film as well as those that "poison" the reference cell – examples are:

- Oil/ LNG/ Petrochemical processes
  - Desalters
  - Sour water strippers
  - Sour waters with H_2S and NH_3
  - API separators
  - Stack gas scrubbers
  - Sulphur recovery units
- Potable Water
  - Optimized coagulation
- Industrial waste water and sewage treatment
- Anaerobic bio-gas

*pH transmitters must have dual high impedance inputs galvanically isolated > 10^{12} Ohms

Benefits of Fast Response

A reduction in consumables such as coagulants and reagents is enabled with faster responding pH measurement as illustrated below.

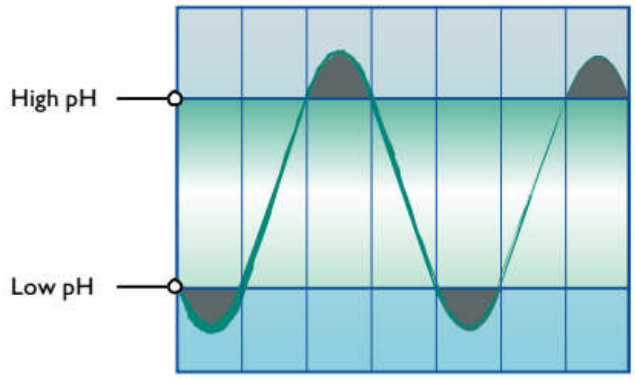

Figure 1- slow pH response: chemical waste and water contamination (grey shaded areas show pH overshoot due to sensor lag)

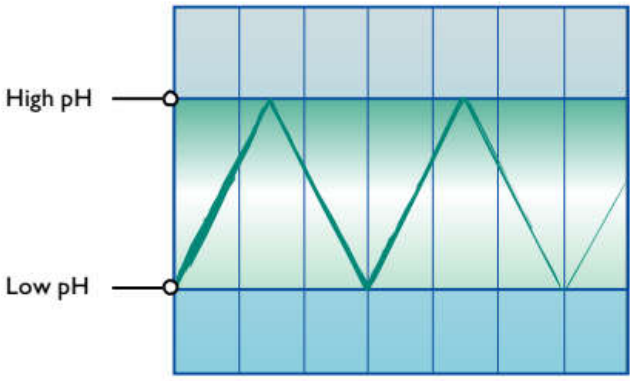

Figure 2 - Fast pH Response: no chemical waste

Engineering Specifications

Measurement Range	0-12
Temperature Range	0 to 80 °C/ 176 °F
Pressure	0 to 30 bar/ 435 psi
Process Connections	¾" NPT both ends
Electrode Dimensions	Length 145 mm / 5.72 inches Diameter 26.5 mm / 1.04 inches
Wetted Materials	Polypropylene, glass, ionically-conductive polymer
Cable	Tinned Leads (sensor only) BNC when ordered with pH interface and Analyzer
Shipping Dimensions	Qty. 1-6: 18 inches x 12 inches x 9 inches
Shipping Weight	1.5 lbs per sensor (10 ft. cable)

pH Analyzer and Interface

The 603 sensor can be paired with a 210-P pH analyzer which provides flexibility, reliability, and ease of use. Includes a 600 pH interface with junction box and pre-amp for convenience and to ensure a reliable sensor connection. Key features and benefits are as follows:

- Dot matrix display shows pH, temperature, 4 alarms, 2 outputs
- Auto calibration - recognizes your buffers
- Output hold during calibration
- Instant return to sample display
- Self- and sensor diagnostics
- Fault tolerant
- User interface "remembers" last position within menu structure for ease of navigation
- Short key sequences
- Two assignable 4-20 mA outputs
  - Programmable: 1 for acid, 1 for caustic
  - Characterizable to fit specific curves
- Four programmable alarms with self- and sensor alert

pH Buffers and Calibration Kits

IC Controls offers a range of maintenance products for pH sensors such as buffers for calibration as well as cleaning and measuring supplies. For convenience, a maintenance kit that covers approximately one year's maintenance requirements can be added to any order.

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