

TIP #1 Cleaning pH Sensors

Tips for pH Sensor Users

Did you know...

When pH glass is measuring, it undergoes a chemical reaction at the surface where an H⁺ ion exchange reaction takes place. In some applications there are constituents that coat the glass, such as Calcium Carbonate. Coating of the glass stops H⁺ ion contact between the pH glass and the process. With partial contact, the pH reading becomes inaccurate and/or drifts.

Factors that affect the pH accuracy in this way include:

Scale, biological growth, oils, wax, gum, etc.. They all reduce the area for the hydrogen ions to react with the glass. Biological microbe growths can also produce localized pH environments inside their growth deposit, which can be quite different from the true process pH. Periodic cleaning of pH sensors will remove these deposits, restore the pH glass surface and reference junction, and thus the pH accuracy.

When to clean your sensor?

For best results, pH sensors can benefit by being checked monthly in 7 and 4 or 10 buffer. Remove the sensor, rinse in water, remove any significant debris deposits, and then check in 7 pH for zero (0 mv is at 7 pH) and then 4 pH or 10 pH buffer for slope (gain or efficiency of pH glass performance). If in 7 the reading is off by more than ± 0.1 , the reference needs cleaning. If the reading in 4 or 10 is off by more than ± 0.1 , in addition to the ± 0.1 from 7, the pH glass needs cleaning and calibration.

Methods of Cleaning

Method 1: Mechanical cleaning

Mechanical cleaning can be used on sludge, slime, or other deposits in the internal cavities of the sensor. Clean with a soft brush and a beaker or bucket of water. General debris and non-tenacious deposits can be removed in this way. A standard flat screwdriver blade can be used to carefully scrape scale and other tenacious deposits off the reference junction quickly. The IC Controls open tip design also allows a screwdriver to carefully score and crack hard scale against the glass shaft, then carefully slide it up and off the pH glass tip without touching the pH glass. After mechanical cleaning, again check the sensor against a pH buffer. If the sensor is still not developing the proper pH reading in the buffer you can proceed to a second cleaning method.

Method 2: Chemical cleaning

Chemical cleaning is a bit more involved, so IC Controls has made available a "Chemical Cleaning Kit" P/N A1600054. This kit contains all required supplies along with a complete instruction sheet to enable you to complete a chemical cleaning on your sensors. Please see the instruction sheet attached.

**For further information on this or any IC Controls products
please check our website or contact us at 1-800-265-9161.**

Our most popular pH SENSORS include :

IC CONTROLS Model 642
Robust submersible mining sensor



Mounts on 3/4" fnpt pipe (2/3 actual size)

IC CONTROLS Model 642
Optional flange mounting



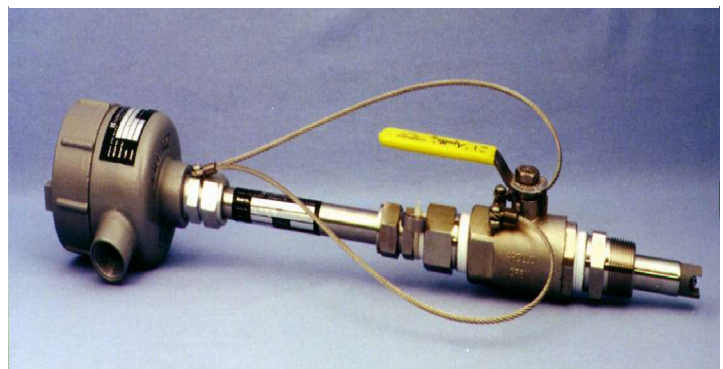
Mounts in 2" flanged pipe tee (1/3 actual size)

IC CONTROLS Model 625



Quick union in-line insertion (1.5" MNPT tee)

IC CONTROLS Model 605



Ball valve retractable cartridge pH sensor (1" MNPT)