

TIP #3 Preventative Measures

Tips for pH Sensor Users

The challenges of a tough application...

When your normal measuring environment is rock slurry comparable to mud you have real challenges getting good stable pH readings. In the previous tips we talked about cleaning, so in this missive lets talk about preventative measures.

Our solution to resist plugging in rock slurry:

IC Controls reasoned 30 years ago that if a tree's root would not plug in soil then if we used a wood reference junction it would resist plugging in a rock slurry. Thirty years and many thousands of happy 642 pH sensors users later we can confidently say that is so. So apply wood reference junctions for longer periods between cleanings when your reference is drifting. Apply larger wood reference junctions also to delay the day when even they will slowly plug. With rock slurry there is a large abrasion fact that causes problems too. Problems like wearing through the sensors thin pH sensitive glass. This can be addressed by picking a sensor location away from any significant flow, but at the cost of slower response to pH changes because the sensor location is out of the way, plus less product recovery. Another approach that gives better pH control and recoveries is to use a sensor with heavy body extensions to protect the tip and keep it where you get representative responsive pH readings. The IC Controls 642 mining pH sensor was designed with heavy flutes to provide wear protection for the pH glass.

How to resolve drifting pH readings?

Some mining applications present powerful chemicals mixed in with the rock slurry to achieve the desired results and those applications often are plagued by drifting pH readings. Such chemicals enter the reference sensor through the reference junction and dilutes it causing drift from chemical shift, it is no longer a reference. This can be addressed by specifying a tinny junction to slow the chemical down. That however is a conundrum because you want the largest possible wood junction to deal with the rock slurry and also the tiniest junction to slow the chemical. IC Controls solved this problem for you in the 642 with a unique backup junction attached to the wood junction. There are also double junction and solid state reference options available if needed.

The Human factor

Most mining applications also suffer from the human factor. Plants are big and dirty so humans treat things rough and fragile pH sensors do not last very long. IC Controls addressed the human factor by making a big rugged robust mining sensor the 642. Developed from heavy wall CPVC pipe, the pH glass is recessed in a protective pocket so it can be dropped on the bottom of a pail of acid, in a beaker, on the floor or into a gutter, all without breaking. For your assistance we are enclosing a specification sheet on the 642 which describes the complete listing of all its built in benefits.

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

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Our most popular pH SENSORS include :

IC CONTROLS Model 642
Robust submersible mining sensor



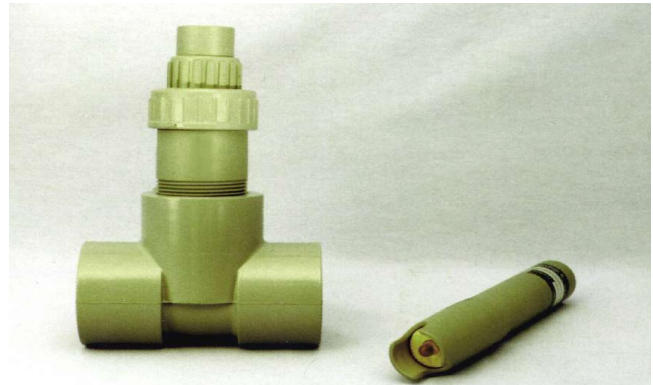
Mounts on 3/4" fnpt pipe (2/3 actual size)

IC CONTROLS Model 642
Optional flange mounting



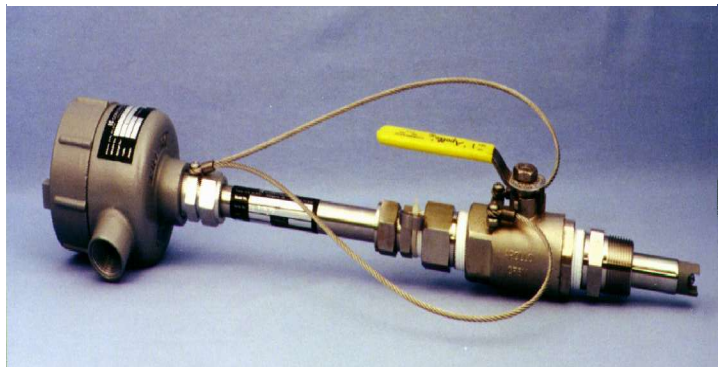
Mounts in 2" flanged pipe tee (1/3 actual size)

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)