



## General Cleaning Instructions for Contacting Conductivity Sensors

FOR AST10 & AST51 1/2" Type Cells:

In order to ensure proper readings, it is necessary to scrub the center electrode, vent hole and in general the lower half of the outer body around the cross-hole of the sensor upon sufficient fouling in service.

- (1) Use a soft tuft pipe cleaner or wooden shaft (because their tips are smaller) Q-tips to wipe down the center electrode. The pipe cleaner is best. In a pinch tear off a piece of paper towel and roll it into a tight rod small enough to fit in the hole. It will of course deform on being wetted, just shove it in the cross-hole and rotate to scrub. You could also use a cut piece of cloth for this.
- (2) Clean the sensor with your choice of hot detergent in water or solvent. All sensors can be cleaned with isopropyl alcohol solvent. All sensor except those with CPVC insulators or sensor body material of construction can also be cleaned with acetone as well (this is typically the AST50 or AST52 models that have either a CVPC insulator or sensor body).
- (3) In the event of a hard scale, try vinegar first, or some mild acid solution. Any solution that will dissolve what is coating the surface is encouraged so long as it does not otherwise damage the electrodes, insulator or sensor body.
- (4) It is possible to get clear coatings of a hard substance in some processes. If such a coating is suspected, a very thin cut sliver of high grit (400 grade or higher) sandpaper can be used to remove it. This procedure should not be done routinely as it removes metal from the already small electrode. To check for such a coating, have the sensor as clean and dry as you can achieve and perform the following test; connect one lead of an ohmmeter to the black lead of the sensor and touch the center electrode in the cross hole gently with a pin-tip lead. If you see high resistance, carefully try to press the sharp pin tip into the surface of the electrode. If this results in a low conductivity reading you can suspect a clear non-conductive coating. They are rare outside of boiler applications, and it's also tricky to press the tip into a 1/16" diameter round rod inside a small hole without slipping and damaging the insulator surface.

The same cleaning remedies and tests apply to the body of the sensor, which is the outer electrode, except you don't have to worry about access or Q-tips.

If they have an ultrasonic cleaning bath, try that with an all-purpose surface cleaning solution or detergent and hot water.

The all purpose commercial detergents 409 or Simple Green can also work effectively for such cleaning tasks.

For biological fouling a solution of 50% bleach and 50% water will do a good stripping job with warm or hot water giving best results. Soak the tip in this solution for anywhere from 30 to 60 minutes for most situations.

A good detergent cleaning without rinsing will minimize bubble on reinsertion if the detergent residue can be tolerated. Although the potential issue of entrenched air bubbles is considered a separate topic altogether, a short treatment is below since this issue can often be remedied together with a cleaning procedure.

On the chance that bubbles are the whole problem there is a good way to check for them. The sensor entry from the top of a line or vessel often results in an air-trapping cavity around the short sensor stem. If this sort of installation was used, examine it and make sure that the sensor tip is completely submerged at all times. To check for the presence of bubbles rap the sensor back cap sharply from the side several times with the plastic or wooden handle of a screwdriver. This will sometimes dislodge outgassing bubbles that form on all the surfaces of a sensor and you can observe a sudden increase in conductivity when the sensor is struck a few times. Use common sense about how hard to hit it. Hold the screwdriver loosely by the blade between your thumb and forefinger to control the amount of muscle that goes into the raps. Naturally, there is no warranty for hammer blows that result in mechanical damage to the sensor.