

## Thermocouple Troubleshooting

Troubleshooting is for current customers needing assistance with their SURE CURE systems. These are just common problems. If problems keep occurring, please call Products Engineering at (303)679-9635.

Thermocouple problems are the most common among the work place.

**‘Note’ – Looking at the ‘Making a Thermocouple’ document in the ‘HowTo’ section will solve most all thermocouple issues that may be encountered.**

Problem 1 - The first, most common problem is that the thermocouple wire is stripped too far back before it is screwed into a plug or jack. The wires will touch too early causing wrong temperature readings than expected.

Solution 1 – Undo the thermocouple plug or jack and unscrew the thermocouple wires. Cut back some of the wire so that less of the metallic part of the wire is showing. Re-screw the thermocouple wire into the correct screws, making sure the metallic parts of the wire are not touching before the screw posts.

Problem 2 – Constant spikes keep occurring in my Time vs. Temperature graphs. The most common problem causing temperature spikes is grounding problems.

Solution 2 - To test this, unplug the thermocouple wire out of the controller (for a Mini or Micro Curing Controller, just unplug the thermocouple plug; for a Standard Curing Controller, unscrew the thermocouple wires from the terminal strip). Obtain a volt meter and turn the dial to resistance ( $\Omega$ ). Put one probe on one of the thermocouple wires and put the other probe on the ground in the curing controller (put the probe on one of the ground lugs if you have a Mini or Micro Curing Controller, or one of the ground screws in the Standard Curing Controller). The resistance reading should be close to infinite. If there is a reading of anything less than 250K $\Omega$ , then the thermocouple line should be checked for nicks in the wire. If you are using a shielded thermocouple wire in your product, the ground wire may come into contact with water in the mixture and cause spikes. Make sure that the wires in the product are water tight with shrink tubing or any other means of water sealing.

Problem 3 – My thermocouple channel is reading the ambient temperature.

Solution 3 – This means that the two wires are crossed somewhere and are exposed to the ambient temperature. Make sure to check the wires at the thermocouple plugs. Often the situation is what is described in Problem 1. If this is not the case, check along the entire thermocouple wire to check for breaks in the wire.