

## Topic – Boiler Probe Temperature compensation to Non-Temperature compensation.

This Technical Bulletin shows you how to change a temperature compensated probe to a non-temperature compensated probe.

Temperature compensation is a vital part of acquiring an accurate measure of the TDS (total dissolved solids) in a boiler system. Liquid is subject to expansion and shrinkage as a result of temperature changes. This expansion and shrinkage affects how a boiler probe senses the TDS in the liquid and readings will be unreliable without taking this into account.

There are 2 ways temperature is taken into consideration in the MicroVision boiler controller.

- 1.) ATC (Automatic Temperature Compensation)  
As manufactured from Pulsafeeder: The unit is supplied with a temperature compensated probe which uses a sensor in the probe, along with circuitry and software in the controller, to automatically compensate for the temperature of the liquid. ATC is most effective in boilers that are at or below 30psi. Boilers at higher pressures/temperatures are more likely to steam flash the temperature compensation sensor in the probe and cause damage to the sensor.
- 2.) Manual Temperature Compensation  
Sensors used in boilers above 30psi may be configured to bypass the ATC by jumping the white and green wires and entering the temperature manually. It is recommended to add the jumper in the controller rather than in junction boxes to ensure the proper connection is made.



Temp Comp enabled (no jumper)



Temp comp disabled (jumper installed)

Once the jumper is installed, power should be cycled and the probe must be re-calibrated. The controller will sense the jumper and automatically add the prompt for temperature input. The Microvision Boiler manual has a steam chart that can be used as a reference for the proper temperature to enter. If a sensor temperature compensation has already been damaged by steam flash, bypassing the ATC with a jumper will allow the existing probe to be used without the need for probe replacement.