



## Reversed Thermocouple Detection

In situations where a thermocouple has been replaced, it is possible that the replacement thermocouple sensor is wired incorrectly. This will cause the temperature reading to decrease as the temperature increases (or vice versus) resulting in a temperature runaway condition.

Watlow offers a feature on the multi-loop products to detect this situation called **Reversed T/C Detection**. Reversed thermocouple detection is available in most Watlow multi-loop controllers except for the PPC 2000 and the CAS200 alarm scanner.

In the CLS200 series and the MLS300 Series controllers the reversed thermocouple detection is disabled by default. In the CPC400 and D8 the feature is enabled by default.

The reversed T/C detection is a safety feature that will detect when the TC has been connected with the positive wire attached to the negative input and the negative input attached to the positive input. This will cause the input reading of the controller to decrease when the process is actually heating. This causes the output to apply 100% power to the heaters, which can cause damage to product, machine, plant or even personnel.

DO NOT substitute the need for redundant safety limit protection with this feature.

Set **Reversed T/C Detection** parameter to ON to enable polarity checking for thermocouples. If a reversed thermocouple is detected, the controller sets the loop to manual control at the SENSOR FAIL OUTPUT power level and displays the alarm.

This feature is located in the Setup Loop Input menu of each controller.