

APPLICATION NOTE

JUNIOR THERMOCOUPLE LENGTH AND ACCURACY

The Junior provides inputs that can be connected to a wide range of NTC resistors or thermocouples. It also provides open circuit and short circuit fault detection.

To provide this fault capability a change is made to the standard input circuitry than can cause a temperature offset to appear in the readings, that is related to the length and resistance of the thermocouple that is being used. This is most obvious if two identical thermocouples are used but having very different cable lengths. The longer cable will give a higher temperature reading compared to the shorter one assuming that both thermocouples are at the same temperature.

This temperature offset can be reduced by using the calibration facility that is available for each channel. To do this measure the offset temperature and then enter this as the offset for the appropriate channel, set the gain to 1.0.