Testing Procedure

To perform the testing procedure using the Ohm Temperature Calibration Tool:

1. Gather the necessary equipment, including a calibrated Ohmmeter, the material to be tested, and a computer running the Ohm Temperature Calibration Tool code.
2. Measure the resistance of the material at the low end of the temperature range, using the Ohmmeter. Take at least 10 measurements to ensure repeatability.
3. Record the measurements and calculate the average resistance, using the Ohm Temperature Calibration Tool code. This will be the "Low Test Resistance Average" (Ro).
4. Measure the resistance of the material at the high end of the temperature range, using the Ohmmeter. Take at least 10 measurements to ensure repeatability.
5. Record the measurements and calculate the average resistance, using the Ohm Temperature Calibration Tool code. This will be the "High Test Resistance Average" (RT).
6. Calculate the temperature coefficient of resistance (TCR) using the Ohm Temperature Calibration Tool code, using the following formula: TCR = (RT - Ro) / (T - To) * (1 / Ro), where T is the high test temperature average, To is the low test temperature average, RT is the high test resistance average, and Ro is the low test resistance average.
7. Use the TCR to predict the resistance of the material at a specific temperature, using the Ohm Temperature Calibration Tool code. The program has a loop function that will give you a list of the temperature and the corresponding resistance measurements.
8. Use the results of the predicted resistances to calibrate automated computer systems that measure electrical assemblies in environments with moving temperatures.

Low Test Data

Use a precision Ohmmeter with a NIST Traceable calibration from a 17025 certified calibration laboratory. Identify the temperature range that you're going to be working in. For this test we're going to be working at the lower end of the temperature range. Take 10 measurements of your material with the Ohmmeter and enter the results in the "ohms" column." Use a precision temperature sensor to collect the corresponding temperature measurements.

lowtestnumber	temperature	ohms
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

High Test Data

Use a precision Ohmmeter with a NIST Traceable calibration from a 17025 certified calibration laboratory. Identify the temperature range that you're going to be working in. For this test we're going to be working at the higher end of the temperature range. Take 10 measurements of your material with the Ohmmeter and enter the results in the "ohms" column." Use a precision temperature sensor to collect the corresponding temperature measurements.

hightestnumber	temperature	ohms