TMN-100 Temperature Probe

Overview

The TMN-100 is a sensor that can monitor temperatures between 15 °C above and 15 °C below room temperature. The TMN-100 is capable of responding to changes in temperature within a few seconds. The sensor element is water-resistant, the tip of the TM-100 can be immersed in aqueous solutions, including saline solutions, for a few hours.

Photo

Specifications:

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Temperate Range:	0 - 50 deg C

Operating Instructions:

1. Plug the IX-MYDAQ into the NI mydaq. Plug the mini din 7 end of the TMN-100 into CH 1 or CH 2 of the IX-MYDAQ.
2. Plug in the USB cable and set the input range of the channel being used to +/-5V.
3. The slope and offset must be found to convert the measured voltages to temperatures. The following procedure illustrates how this is done.
4. Prepare two beakers of water, one at 10°C, and the other at 40°C. Measure the temperature of the cold water with a thermometer just before the TMN-100 temperature sensor is placed in the beaker. Record it as T1.
5. Place the tip of the TMN-100 temperature sensor in the center of the beaker of

cold water, record the voltage and label it V1.
6. Measure the temperature of the warm water with a thermometer just before the TMN-100 temperature sensor is placed in the beaker. Record it as T2.
7. Place the tip of the TMN-100 temperature sensor in the center of the beaker of warm water, record the voltage and label it V2.
8. Using the recorded information the slope and offset can be found. To find the slope perform the following calculation and label it as m,
m = ((T2-T1)/(V2-V1)). Record the value in your notes.
9. To find the offset perform the following calculation and call it b,
b = (T1-(m*V1)). Record the value in your notes.
10. Use the TMN-100 to measure the unknown temperature and record that voltage as Vmeasured.
11. The unknown temperature can be found by following the formula below,
Unknown Temperature = ((m*Vmeasured) + b).