

# CTC AppNotes

A series of technical documents written by members of the CTC community

## Checking TA100 series sensors and cables installed with a dual channel switchbox

Sometimes it is necessary to do a quick check in the field of sensors and cables to troubleshoot the most probable cause of questionable data. Usually this can be quickly accomplished with CTC's TM1018 meter, however when dual output sensors are involved a few extra steps are required to check the temperature circuit along with the vibration circuit.

### Step one: Testing the vibration circuit

The first step to fully checking the sensors involves testing the vibration circuit. To do this, simply connect the BNC to BNC cable from the TM1018 to the

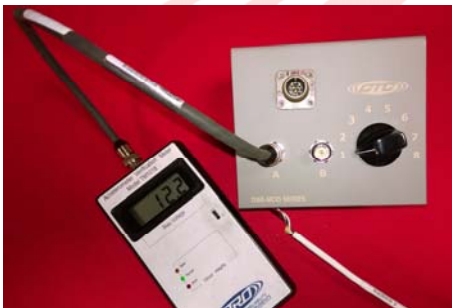


Figure 1— DSB Module showing TM1018 cable connected to test vibration circuit only.

vibration BNC on the dual output switchbox (upper BNC on SB142/242 series boxes, left hand BNC on DSB series modules and boxes). Check each connected channel by cycling through the



Figure 2— DSB Module showing TM1018 cable connected to test temperature circuit only.

switch and checking the LED on the TM1018. Follow the guidelines in the TM1018 manual to evaluate sensor status based on the LED color and the displayed voltage.

### Step two: Testing the temperature circuit (TA17x series)

Testing TA17x series sensors is fairly easy utilizing only the TM1018 instrument. Temperature output for the TA17x series sensors is in mV/K and is a separately powered circuit

from the vibration circuit. To test TA17x series sensors connect the BNC cable from the TM1018 to the temp BNC (lower BNC on SB142/242 series boxes, right hand BNC on DSB series modules and boxes). Cycle through all connected channels to check each sensor. Normal readings for ambient room temperatures (65-85°F, 18-29°C) would be 2.8 to 3.0 volts. If the sensor is located in an area of elevated temperature, then the voltage reading should read proportionally higher (150°F/65°C would read as approximately 3.38 volts).

### Step two: Testing the temperature circuit (TA10x, TA13x and TA18x series)

In order to check the temperature circuit for sensors that output temperature in mV/°C (TA10x, TA13x and TA18x series sensors), connect your data collector to the left hand BNC (vibration) on the dual output switch mod-



Figure 3— Testing the temperature circuit with a data collector and digital multi-meter on a DSB-MOD-08 Module.

ule (upper BNC on SB142/242) and make sure that the sensor is powered up. Next, connect a digital multi-meter (set to read DC voltage) to the temperature output BNC (right hand BNC on DSB modules, lower BNC on SB142/242 switch boxes). With the sensor powered, the multi-meter should read between 0.16 and 0.30 volts for sensor temperatures between 60°F and 85°F (16 to 30°C).

If you have any questions or for further information please feel free to contact CTC directly via Email [techsupport@ctconline.com](mailto:techsupport@ctconline.com) or call 1-800-999-5290 in the US and Canada or +1-585-924-5900 internationally.

If any CTC vibration analysis hardware product should ever fail, we will repair or replace it at no charge.