**Oh** Fault Code

This document pertains to all sizes of Mentor II and Quantum III drives.

**Problem**

The **Oh** (Over Heated) thermal trip (or 107 in parameter #10.25 trip log) normally results due to a high temperature condition as read from a heat sink mounted thermistor. The thermistor is a resistive device that changes resistance as a function of temperature. By measuring the resistance (or the voltage in a simple voltage-divided network) an approximate temperature can be derived.

In troubleshooting an **Oh** trip (code 107) one needs to determine if the trip is real (if indeed the heatsink is getting hot) or if it is a false indication.

**Causes**

- The SCR heatsink must be clear of debris and the fans must be clean and spinning. Air flow should be verified. Insufficient air flow across the heatsink can result in **Oh** trips.

- One could observe parameter #7.07 in the drive as it will read the drive temperature as reported by the thermistor. This parameter is the digital representation of the thermistor. If the drive is at room temperature is should read about 20°C to 26°C. This readout is in degrees Celsius where 100 = 100°C.

- **Oh** trips can also result from sustained high loads while operating in a closed cabinet with insufficient cooling especially on hot days within hot factories. One could temporarily open cabinet doors and perhaps blow some additional cooling air across the drive. A longer term solution would call for chilled air by some method (heat exchanger).

- Quantum III Size 1 Models 9500-8302, 8303 and 9500-8602 and 8603 and Mentor II Size 1 models M25(R), M45(R), M75(R) and M105(R) do not use a thermistor. In order for these models not to create an **Oh** fault, parameter #10.33 must be set to 1 to disable heatsink trips.

- A good thermistor will measure about 5.5 K Ohms when it is attached to the drive and about 11K Ohms detached from the drive. These resistances represent the thermistor at room temperature. The resistance will change when the thermistor is heated or cooled. The resistance decreases as temperature increases. The drive will trip with an **Oh** fault when the sensor reaches about 95°C.
Heatsink Temperature Sensor Location

Thermistor is used on FAN COOLED MODELS ONLY

The Thermistor is not customer accessible on Fan Cooled Quantum III Size 1
Heatsink Temperature Sensor Location

QIII Size 2

Thermistor location when installed in the drive.

Size 2 and Size 3 Plug PL18

Location of PL18 on the MDA6 power board.

PL18 can be found at this location on Issue 3 MDA6
MII/QII Size 3

Heatsink Temperature Sensor Location

A quick disconnect is used to remove the thermistor without disturbing the wiring to the MDA6 power board.

Thermistor connects to the heatsink with the Torx screw shown here.

Routing path of the thermistor wiring

PL18 connection to the MDA6 power board
With connector un-plugged (power off of course)- resistance should measure approx 10K ohms at room temp ~ 70F. If you need to order refer to P/N 1310-1269 and call Control Techniques Parts Dept at 1-800-367-8067

While waiting for a replacement Thermistor, one could elect to temporarily disable the Oh trip by setting #10.33=1. One would need to be certain that the ambient temperature is low and that the indication was really a false one caused by an erroneous temperature transducer (thermistor).

For actual Replacement Instructions click on the link below: http://www.emersonct.com/download_usa/replacementInstructions/CTRI207.pdf

Americas Service Center 1-800-367-8067

Questions ?? Ask the Author:

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