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TEST PROCEDURES FOR HB AND RB SERIES SENSORS

THIS IS FOR PTC BASED SENSORS ONLY

Your Maxi-Tronic Hazard Monitoring System can be a valuable tool to help you improve your odds of preventing equipment failure. It is extremely important that the system is installed correctly and tested to maximize equipment reliability. Each station indicator on the control unit housing must be wired to the corresponding station being monitored, i.e. Leg 1, Head Bearing East, etc., should be wired to the corresponding control housing indicator.

WHEN SHOWING THE PROPER INDICATOR LOCATION DURING AN ALARM SITUATION:

- The operator will determine the Hot Bearing or Belt Mis-Alignment point quickly by checking the control housing for the alarm point station by name.
- The operator will take corrective action quickly to minimize equipment damage.

Please note: that if a station is wired incorrectly to an indicator, (1) the user may check out an alarm situation at the wrong station; (2) find no problem at the wrong station; (3) silence the alarm because the operator believes the unit is malfunctioning; (4) experience a major equipment breakdown at the actual alarm location.

TO INSURE THE INDICATOR IS SHOWING THE PROPER LOCATION OF THE SENSOR:

- Select a sensor station.
- Go to the point where sensor leads (at sensor) are connected to wires going to electronic housing from that sensor.
- Disconnect one of sensor leads from connecting wire to the electronic housing (at sensor).
- Indicator on electronic housing should turn on showing proper location of sensor.

TO INSURE THE INDICATOR IS SHOWING THE PROPER LOCATION OF THE SENSOR:

(Continued)

Example: Checking sensor located HEAD LEFT: Indicator for HEAD LEFT should light up on the control housing.

When indicator lights up:

- Verify alarm sounds.**
- Press SILENCE BUTTON and alarm should stop and indicator will begin to flash.**
- Reconnect sensor wire.**
- Press Reset. (Flashing indicator will stop and indicator light will now be off).**

The sensing element used for both RB series belt mis-alignment and HB series temperature sensing are PTC (Positive Temperature Coefficient) thermistor. The characteristic of the PTC is that the resistance increases with temperature increase.

The normal (base) resistance of the PTC sensor should be 50-200 Ohms of resistance at 70 degrees as measured from the two 4" leads of the sensor.

As the temperature of the sensor increases, so does the resistance of the sensor. In a PTC five times base resistance equals the preset temperature of the sensor. When this resistance is reached, the indicator will light up and the alarm will sound. Turning on the sensor causes the following events:

- The control housing station indicator lights up.**
- The station light will remain on until the sensor temperature drops 20% below the turn-on temperature.**
- If the station has not been silenced, the indicator will reset itself at 80% of the alarm set point temperature. The alarm and station light will turn off.**
- If the silence button has been pressed, the indicator will change from a steady light to a blinking light.**

- If the station has been silenced, the reset button must be pressed. If the sensor temperature is still within 80% or more of the activation temperature, the blinking light will change to a steady light and the alarm will re-energize and sound. The steady light and alarm indicates that the problem causing the original alarm is still active.

ALARM:

The system should have an alarm connected. Even though the indicator will come on and show where the problem is, it only takes moments for damage to occur to monitored equipment. If someone is not watching the monitor continuously, disaster may occur. With the alarm connected, the moment the indicator shows a problem area; the alarm will sound and draw attention so the problem may be immediately corrected.

TO CHECK FOR PROPER OPERATION OF SENSOR:

Because thermistor is semiconductors, they can be tested for proper operation by conducting resistance checks with an OHM METER or by an external heat source.

To Test Sensor with OHM Meter:

Resistance Check:

- Disconnect both sensor lead wires at sensor.
- Using the OHM meter, connect one lead of the meter to one of the sensor leads.
- Connect the other OHM meter lead to the other sensor lead - (resistance should read between 50-700 ohms, depending on the temperature.
- Connect one of the OHM meter leads to the sensor housing. No meter reading should be indicated. Repeat this test so that both leads from sensor have been tested for grounds and no reading on meter was observed.

With power on main electronic housing and either sensor lead is disconnected, verify the following:

- Indicator will light up.
- Alarm will sound.

Heat Sensor Check:

Remove sensor, temperature, or mis-alignment sensor block from monitored equipment.

Using a heat source, preferably a higher wattage heat gun perform the following:

Note: Do not use heat or high voltage devices in hazardous locations.

- Apply heat to the following locations: (sensor)
 - Tip of the bearing temperature sensor insert.
 - Center of the alignment sensor block on the belt side (not on the sensor side).
- Do not hold heat source on sensor for prolonged time (3 minutes MAX).
- Allow heat to penetrate the metal of sensor housing.

Note: Allow heat to be evenly distributed throughout the metal housing. (This process will take a few seconds).

- Verify control housing station indicator will light up and an alarm will sound.
- Allow sensor to cool.
- Indicator will turn off and alarm will stop.
- Re-install the sensor into the correct location.

Test Procedures Completed.