mTB001
Field Interconnect

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Revision Notes

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1. Overview

The mTB001 Field Interconnect is part of the CMCIEL industrial temperature monitoring system. The unit provides a means of terminating the sensor bus cables in a commercial environment. The mTB001 Field Interconnect can terminates up to three bus cables and includes 110 style punch-down blocks. Four RJ11 jacks are provided for quick connection of the field sensors.

The mTB001 has branch-disconnect switches to assist in network diagnostics. In addition, power and data LED's display the current status of the network.

The enclosure kit is part of a complete temperature monitoring system. The entire system has been specified by CMCIEL. Components of the system include:

- mTS0xx series of temperature sensors
- sensors for humidity, RPM, AC current, thermocouples and analog voltage/current
- mBC081 and mBC082 Bus Converters
- mTB001, mTB005 and mTB006 Field Wiring Interconnects
- mTI085 and Panel Meter Operator Interface
- mOI215 Browser Based Operator Interface

The field sensor bus system is rated Intrinsically Safe when used with the mBC081 Bus Converter.

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2. Planning Your Network

Before starting the planning process, obtain and read the Technical Manuals for all of the components to be used in the system. Here are the primary issues in planning your network:

1. Each of the mTB001 Field Interconnects has three 110 punch-down connectors for bus cables. One connector is marked IN and is for the cable closest to the mBC081/82 Bus Converter. The IN connector is not used on the mTB001 connected to the mBC081/82. The other 2 connectors, marked A and B are for outbound cables to other field interconnects.
2. The network has been tested with 1000 feet (333m) of cable and up to 5 tees. A tee is where both the A and B outbound connectors are used. Good network planning will create a network with the fewest possible tees.
3. Mount the mTB001s as close to the sensors as possible. The enclosures must be less than 6 feet (1.9m) from each sensor. A maximum of four sensors can be connected to an mTB001, three if the mBC081 is connected. Do not modify the sensor cable in any way.
4. The mBC081/82 is to be connected to the mTB001 using the supplied cable.
5. Any CAT5 cable is acceptable for the sensor network backbone. If shielded CAT5 cable is used, the shields should be grounded at the field interconnect where the Bus Converter is connected. The shields should not be grounded at any other field interconnects.
6. Route cabling wherever possible away from higher voltage electrical cables. Do not place cables in the same tray or conduits as cable from VFDs or other electrically noisy equipment.
7. Make sure you allow for serviceability. Mount all components where they can be accessed for service. Mount the sensors using double nut systems so they can be replaced without disassembling the machine. Mount the field interconnects so the diagnostic indicators can be observed.
8. Provide a network layout drawing showing the cable routing to facilitate service.
9. Use only an approved 110 punch down tool to connect the CAT5 cable to the field interconnects. Failure to use the correct tool will damage the connector and cause intermittent connections.
10. Make sure all cables are securely clamped and are protected from accidental damage. Protect the components from weather during and after installation.

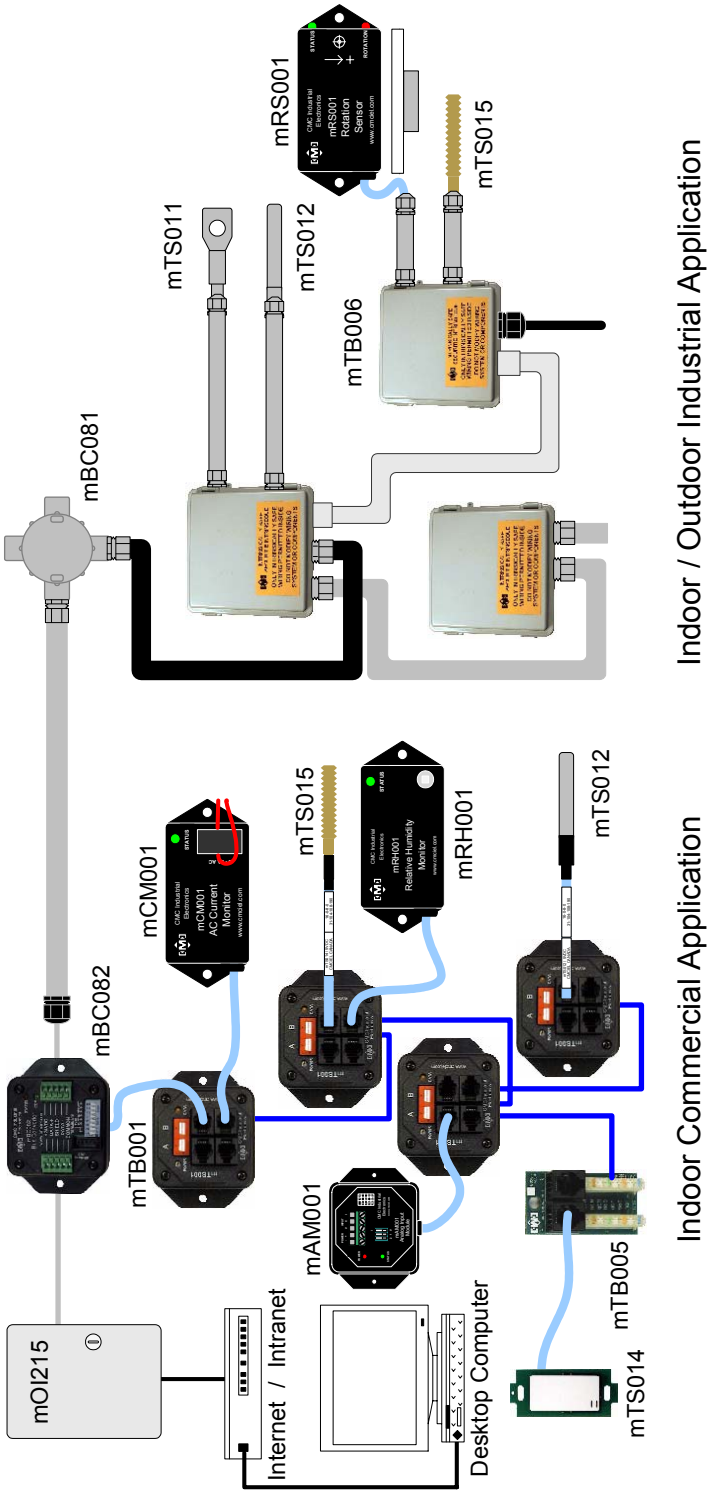

Figure 1 – Typical Network Overview

3. Installation Instructions

The following steps are required for installation:

1. Ensure that the diagnostic indicators can be easily viewed once mounted. Use stainless or plated screws for mounting.
2. If you are using shielded CAT5 cable, connect the drain wires to ground at the field interconnect where the bus converter is connected. Ensure the drain wires are connected together at each field interconnect. Do not ground the drain wires at any of the other field interconnects.
3. Remove the lid and circuit board of the mTB001. Turn the circuit board over and using the supplied cable ties, secure the CAT5 cable to the mTB001. Remember the A and B connectors will be reversed on the back side of the assembly, cross the cables before tying them down.
4. Use the mTB001 housing as a temporary rest while punching down the cables. Use only an approved 110 tool to punch down the cables. Do not use a screwdriver or other tool to punch down the connections. Using the incorrect tool will damage the connectors and cause intermittent connections.
5. Reverse the mTB001 circuit board assembly making sure the cables are in their respective slots in the housing. Replace the lid and screws.
6. Plug the sensors into the mTB001 using the supplied connectors.
7. Ensure that the disconnect switches for the outbound network cables are turned off. Turn each switch on after applying power to the network, starting with the field interconnect closest to the bus converter. Monitor the network with the status indicators on the field interconnects. Should the power or data indicators go out after turning on a switch check that branch of the network for wiring errors.

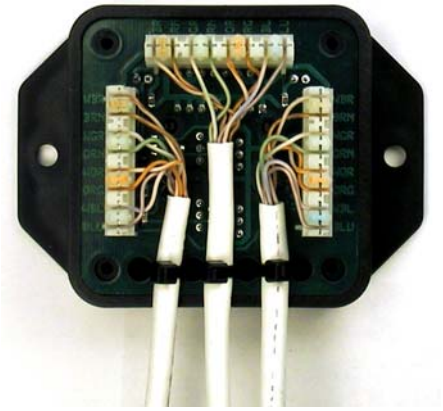

Figure 2 – Rear view showing connections

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