NELSON™ CM.comm

Host Communications Software for Heat Tracing Control

SPECIFICATION / APPLICATION
INFORMATION

The CM Host Communications software package is comprised of two 32-bit applications designed to run on Windows 95/NT PC platforms. These applications work together allowing the user to monitor and update multiple CM2 temperature controllers via an RS-485 network from a central PC.

Now you can utilize the point and click ease of Windows to manage your entire heat tracing system from a central location. With CM.comm you can:

- **Monitor alarm status from a single location for all panels**
- **Acknowledge alarms centrally**
- **Modify setpoints for all controllers in the system within minutes**
- **Add informational notes about the status of various heat trace circuits**

CM-Alarm Monitor

The CM-Alarm Monitor application continuously scans all of the controllers connected to the network and updates the control loop database with real time operating data. In addition, all alarm conditions are posted in the alarm log for easy viewing.

The following features are supported:

- Up to 4 separate control loops can be communicated with from a single PC. Each control loop can have up to 32 CM2 temperature controllers attached to it.

- *Acknowledge* or *Reset* all alarms in the entire heat tracing system with a single mouse click.

- Supports most Windows 95/NT compatible RS-485 adapter cards and port converters.

- *Read only access* to the control loop setup database. No need to worry about unauthorized personnel changing controller or channel operating parameters.

- *Auto Configure* feature permits easy setup by scanning for all controllers connected to the network and recording their current settings.

- Each control loop can be configured to use any serial port from COM1 through COM8.
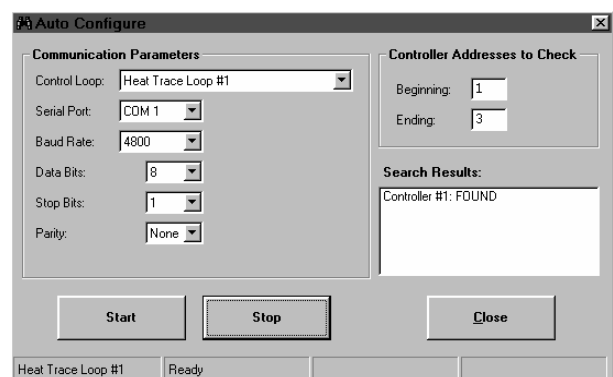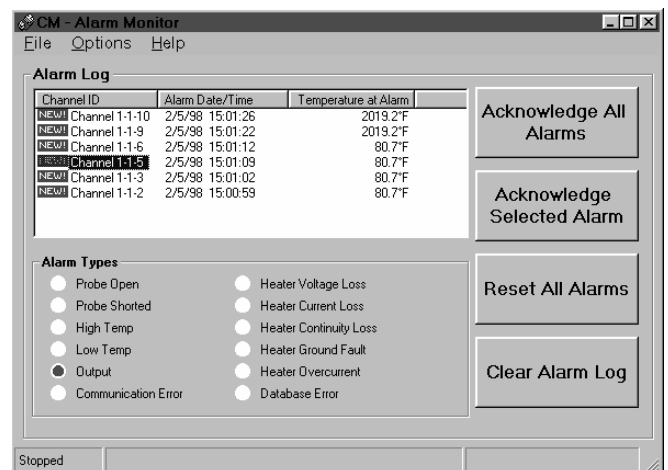
CM-Data Explorer

The CM-Data Explorer application allows read/write access to the control loop database. This allows you to view and modify a wide variety of operating and informational parameters.

- Easily move or copy controller settings from one control loop to another using drag and drop.

- Enable/disable scanning for entire control loops, controllers or individual channels.

- Displays alarm condition(s) and operating parameters obtained during the last scan.

- Edit informational data for each channel. Includes *Channel Name, Location, Drawing No.* and *Comments.*
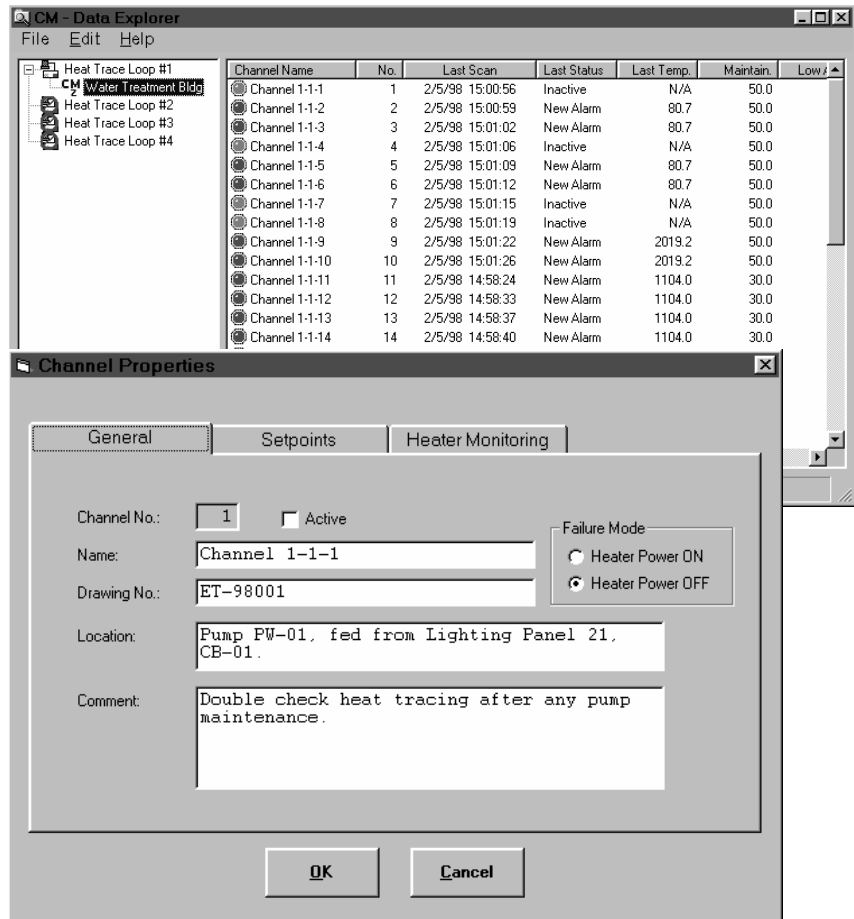
System Requirements

- Standard PC running Windows 95 or NT 4.0
- 8MB of RAM
- 10MB free hard disk space
- 1 to 4 serial ports configured as RS-485

Communications

- True RS-485 communications interface
- Modbus protocol
- Asynchronous, half duplex communications
- Scan rate of 20 channels / minute

SETUP

PC Set Up

To complete the data transmission system, an RS-485 interface card (internal) or a port converter may be used.

RS-485 card

1. Install the RS-485 card per manufacturer's instructions. **Caution: Interrupt conflicts are the most common problem when setting up serial communications devices.** Card should be configured for 2 wire (half duplex) operation.
2. Configuration of serial com ports refer to the card manufacturer's instructions.

Port Converter

1. Insure that the converter is for RS-232 to RS-485 use and is designed for half-duplex operation.

CM2 Communications Set Up

1. Installation of communications terminal block. Mount block within 3 feet of CM2 display and keep away from any power relays or wiring (door mounting is acceptable).
2. Connect communications terminal block to CM2 serial port (on the back of the display unit), using twisted pair ribbon cable included with kit. **Caution: Connectors are keyed for proper orientation, do not force connector.**
3. No changes required in CM2 set up for RS-485.
4. Each unit must be assigned a unique address from 1 to 98. Adjusting rotary switches on back of display unit sets address. Top switch is tens and bottom is ones. Following is example for address 01:
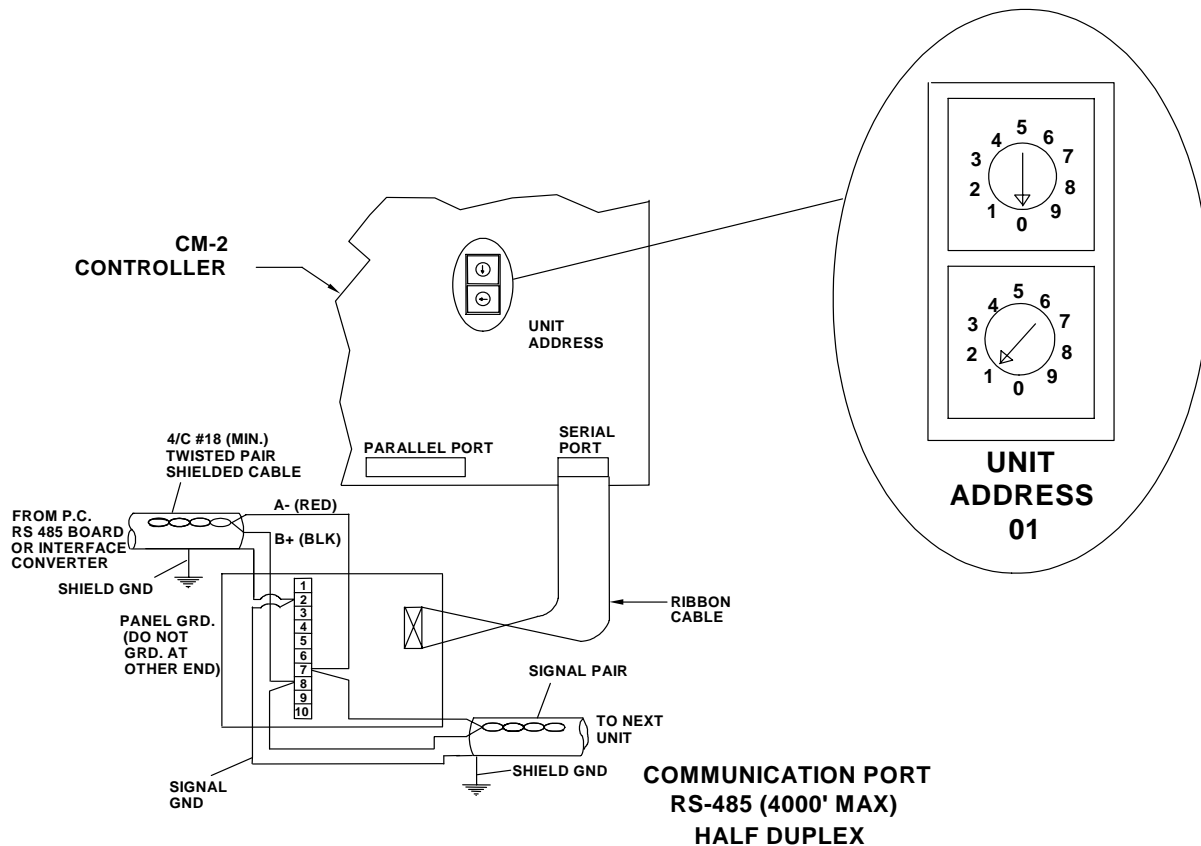
Wiring

1. Use standard 18 gauge, 2 pair twisted, multi-strand shielded connection cable.
2. 120 Ω resistor termination supplied in kit.
3. Connection designed for daisy chain per control loop.
4. Maximum wire length is 4000 feet (1220 meters) for the entire communications loop.
5. Wiring methods for hazardous areas are dependent on RS-485 card or port converter used. Standard cards or port converters could require the same wiring protection methods as other electrical wiring.

Software Setup

1. Install CM Communications software.
2. Run the alarm monitor application.
3. Select auto configure.
4. Select heat trace control loop to configure.
5. Select com port this control loop will use. Note: Each loop must be assigned its own com port. The com port selected must correspond to one of the installed RS-485 communications ports.
6. Specify the starting and ending addresses that you would like the software to look for on this control loop.
7. Click on Start.
8. Software will locate each CM2 within the specified address range. This may take several minutes.
9. Select next control loop to be configured, if applicable.
10. Close auto configure.

OPERATION

From the file menu select Start Scanning.

The current version of the software provides visibility of alarms from any of the units as well as the ability to acknowledge those alarms.