

Advantage III

Gold Series by Ebtron

Installation Guide GTD116, GTD108

Data Logger Option Card for
“Plug & Play” Transmitters

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Models GTC116 and GTM116

Part Number 930-0230

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1 GTD116, GTD108 TRANSMITTER INSTALLATION

The GTD116 and GTD108 transmitters are designed for use in an environment between -20° F to 120° F (-28.8° C to 48.8° C) where it will not be exposed to rain or snow. Install transmitter upright and in a field accessible location. The enclosure accepts 1/2 in. (12.7 mm) electrical fittings for signal and power wiring at both sides at the top of the enclosure.

Locate the transmitter so that the connecting cables from all of the sensor probes will reach the receptacles on the bottom of the transmitter enclosure.



In locations exposed to direct rain and/or snow, the transmitter must be enclosed in a NEMA4 enclosure.



Leave unobstructed space of at least 9 in. (228.6 mm) above, 2 in. (50.8 mm) to each side and 3.5 in. (88.9 mm) below the transmitter to allow for cover removal, bleed sensor connections and heat dissipation.

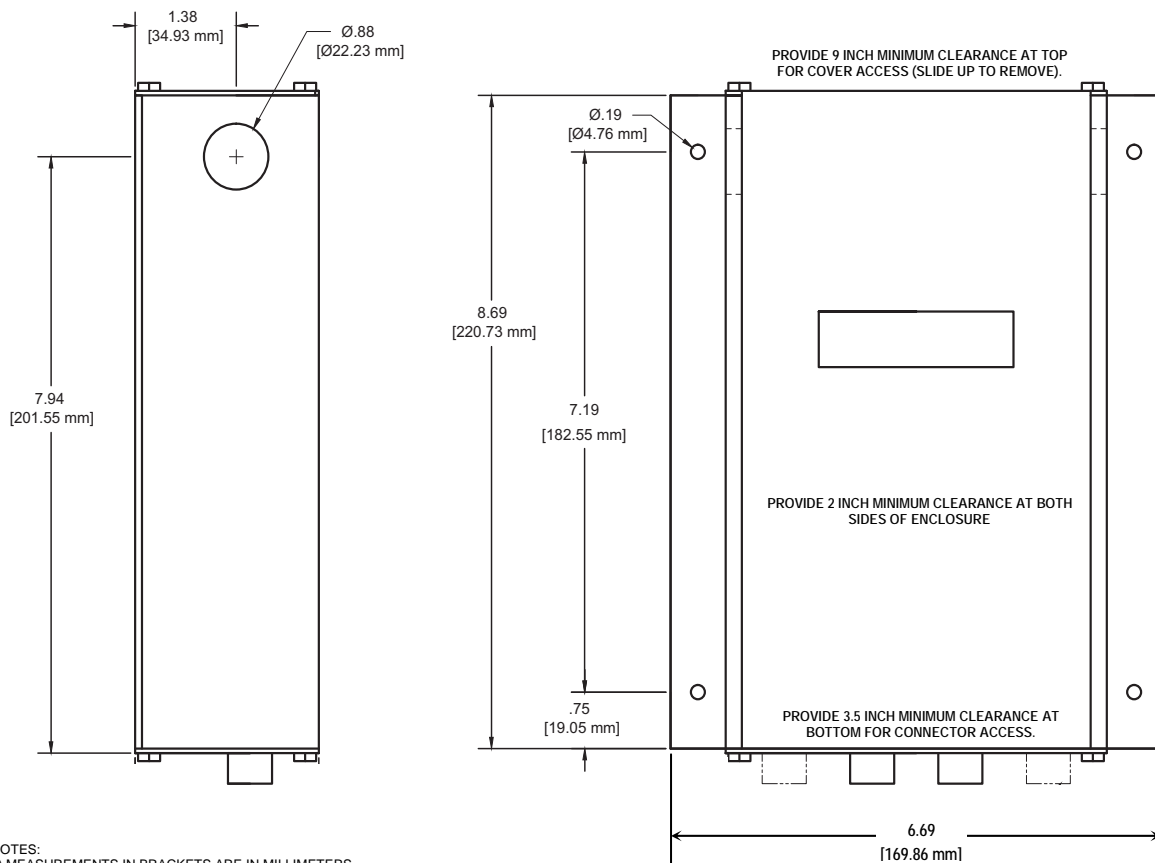


Locate the transmitter in a location that can be reached by all connecting cables from the sensor probes.



Do not drill into the transmitter enclosure since metal shavings could damage the electronics.

1.1 GTD108, GTD116 Mechanical Dimensions



NOTES:

- 1) MEASUREMENTS IN BRACKETS ARE IN MILLIMETERS.
- 2) GTx116 TRANSMITTER WITH 2 PROBE CONNECTIONS IS TYPE 'A'.
- GTx116 TRANSMITTER WITH 4 PROBE CONNECTIONS IS TYPE 'B'.
- GTx108 TRANSMITTER WITH 4 PROBE CONNECTIONS IS TYPE 'B'.
- GTx108 TRANSMITTER WITH 8 PROBE CONNECTIONS IS TYPE 'C'.

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Figure 1. GTD116, GTD108 Mechanical Dimensions

2 GTD116, GTD108 TRANSMITTER INTERIOR VIEW/FEATURES

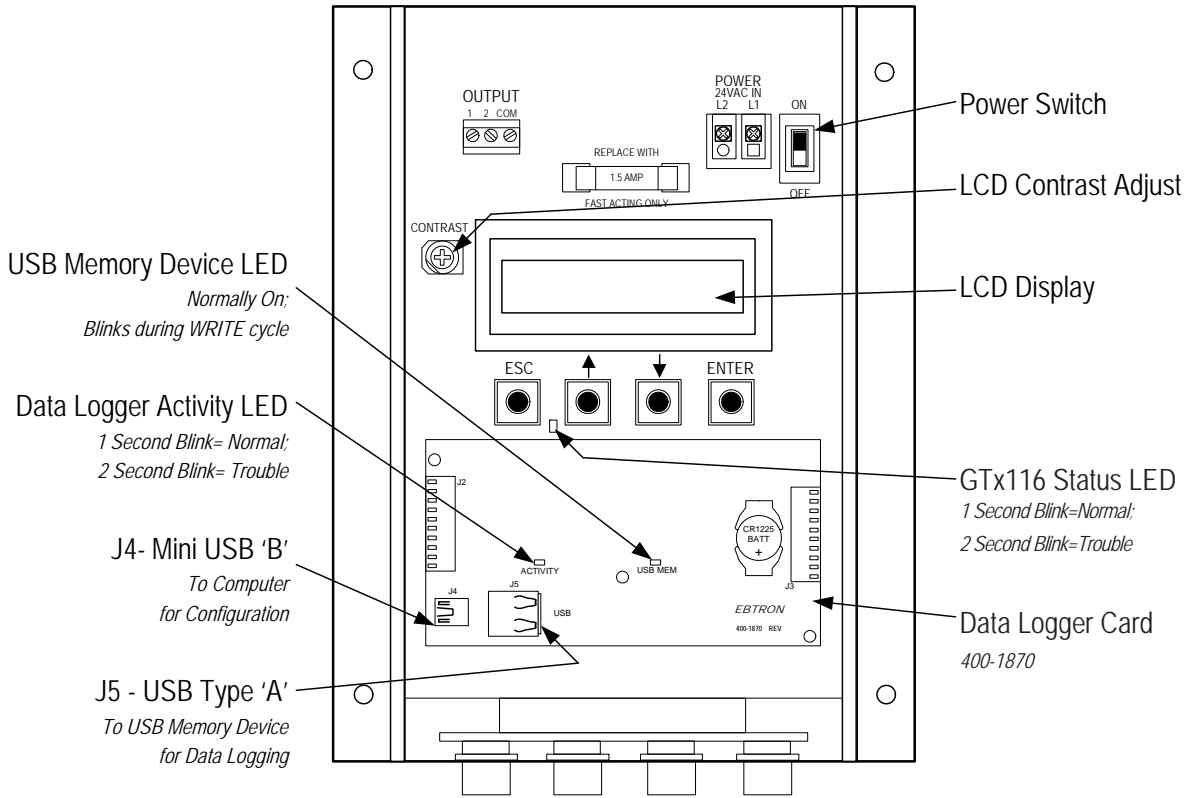


Figure 2. GTD116 Transmitter Interior View/Features

3 GTD116, GTD108 TRANSMITTER POWER AND PROBE CONNECTIONS

3.1 GTD116, GTD108 Power Transformer Selection

Select a 24 VAC transformer based on the maximum power requirements indicated on the transmitter label (20 VA) or from the table below. The operating supply voltage (transmitter power “ON” with all sensor probes connected) should not be less than 22.8 VAC or greater than 26.4 VAC.

NOTE

In order to retain the GTx108 device CE marking, GTx108 transmitters must be powered by a transformer that also carries the CE mark.

Table 1. GTD116/GTD108 Power Transformer Selection Guide

Total Sensors	Minimum VA Req.	Total Sensors	Minimum VA Req.	Total Sensors	Minimum VA Req.	Total Sensors	Minimum VA Req.
1	12	5	14	9	17	13	19
2	13	6	15	10	17	14	19
3	13	7	15	11	18	15	20
4	14	8	16	12	18	16	20

3.2 Connecting Power to the Transmitter

Connect 24 VAC power to the large, two position power input terminal labeled “POWER” on the upper right hand side of the main circuit board (Figure 3). Since the output signals are isolated from the power supply, it is not necessary to provide an isolated (secondary not grounded) power source.



Multiple transmitters wired to a single transformer must be wired “in-phase” (L1 to L1, L2 to L2).

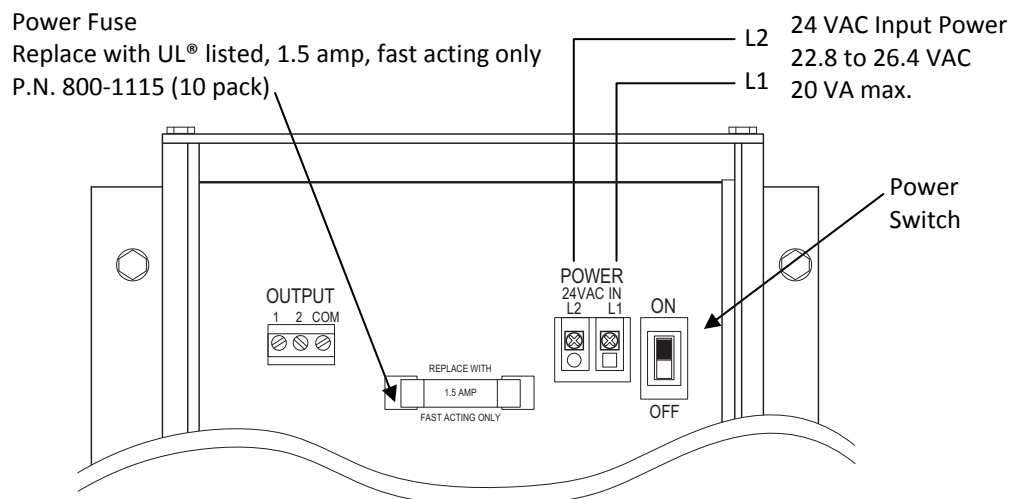


Figure 3. Connecting Power to the Transmitter

3.3 Connecting Sensor Probes to the Transmitter

After installing the sensor probes and transmitter, connect each of the sensor probe cable plugs to the circular receptacles located at the bottom of the transmitter enclosure. Probes are “Plug and Play” and do not have to be connected to a specific receptacle on the transmitter unless traverse data is desired (see note below).



Provide a “drip loop” at the transmitter if there will be the potential for water runoff or condensation along the sensor probe cable(s).



Sensor probe cable plugs are “keyed” as shown below. Line up plug with receptacle and push straight on to receptacle.



DO NOT TWIST. Squeeze cable plug “ribs” towards receptacle when removing. Forcing the cable plug in or out of the receptacle will damage the connectors and void warranty.



When traverse data is desired (especially when using the EB-Link Reader), probes should be installed and connected to the transmitter using the mounting convention specified in the separate sensor probe Installation Guide. Proper installation simplifies sensor location decoding during data analysis.

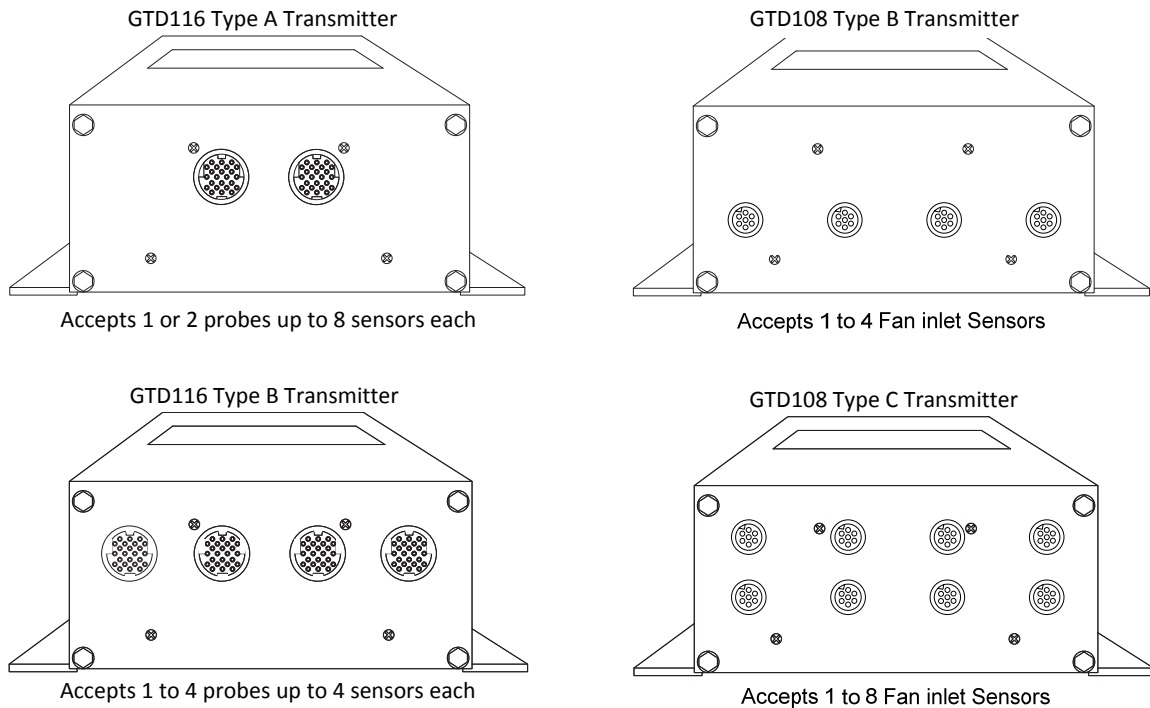


Figure 4. Type A and Type B Transmitter Connector Panel Detail

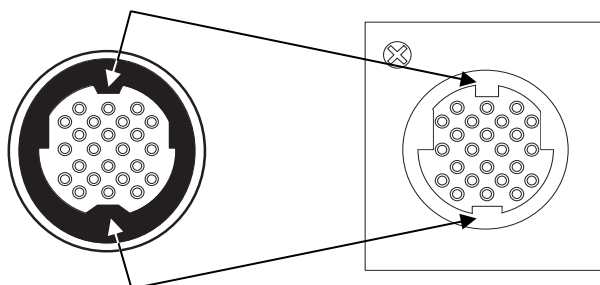
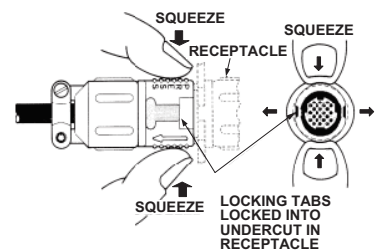


Figure 5. Connector Detail



Squeeze and then pull to remove
DO NOT TWIST!

4 GTD116, GTD108 DATA LOGGER USB DRIVE CONNECTION

1. If the default 'UTC' time setting, or the default '5-minute sample rate' are to be changed, ensure that the data logger software has been properly installed and configured. Refer to Section 5 of this document (CHANGING DATA LOGGER FACTORY DEFAULT SETTINGS) for instructions on downloading and installing the configuration software required to make these changes.
2. Install a customer supplied USB memory device onto the data logger USB port shown in Figure 1.

4.1 DATA LOGGER CARD VERIFICATION AND NORMAL OPERATION

Verify data logger card operation as follows. Refer to Figure 2.

1. Set the transmitter POWER switch to the ON position.
2. Verify that the transmitter status indicator D3 and the data logger ACTIVITY indicator D4 are both blinking at 1 second intervals. If either indicator does not appear to be operating as described, set POWER switch to OFF, and recheck data logger installation.
3. Verify that the data logger USB MEM indicator is steadily illuminated. The USB MEM indicator remains steadily lit until data is transferred to the USB device, when it blinks rapidly while the data transfer is in progress. Note that some memory sticks require a "hot start" to initialize. So, if the USB MEM indicator is not on, simply removing and re-connecting the USB device while the transmitter is powered on may do the trick. If the USB MEM indicator blinks constantly, this indicates that the USB device was not successfully configured. If the USB MEM indicator does not operate as described, set the transmitter POWER switch to OFF, and re-check USB memory device type and installation.

***Note:**

The USB memory device selected must be formatted with a FAT16 or FAT32 file structure within the capacity limitations of the operating system that will be used to read its data.

4. Verify that the transmitter display is indicating the flow and temperature it has been configured for. If display is not indicating flow or temperature, ensure that all probes are properly connected to the transmitter. Refer to the separate transmitter Technical Manual for additional troubleshooting, configuration and set up information.
5. If you wish to verify that data has been stored to the USB memory device, wait until at least one sample rate interval has passed to ensure that data has been transferred to the USB device.
6. Set the transmitter POWER switch to OFF.
7. Remove the USB device, and install it into a compatible USB port on a computer. The data logger stores the measured data at the selected sample intervals in files named DATAF.CSV (for airflow) and DATAT.CSV (for temperature). They are comma separated value files that can be opened using any common spreadsheet program or text editor.
8. Open the DATAF.CSV file and examine the contents to ensure that measurement data has been stored, that the time is set to the desired format, and that data has been recorded at the selected sample intervals.
9. When verification of data logger operation is complete, set the transmitter power to OFF and re-install the USB memory device onto the data logger card.
10. The transmitter can now be powered ON and placed into service to monitor and record measurement data as required. Replace transmitter cover plate during operation.

5 CHANGING DATA LOGGER FACTORY DEFAULT SETTINGS

If desired, the default time zone can be changed from 'UTC' to your local time zone or to any other time zone. In addition, the default 5-minute sample rate interval can be adjusted from 1 minute to 999 minutes using EBTRON GTD communications software, available for download at www.ebtron.com/downloads/. Install the software and prepare the data logger for use as detailed in the following paragraphs. Observe all ESD precautions when handling the circuit boards.

5.1.1 Installing the Data Logger Software

The following procedure is optional, and is only required if changes to the factory default UTC time setting and/or 5-minute sample interval are necessary.

1. Obtain the latest GTD data logger software at www.ebtron.com/downloads/. The software consists of the following two files:

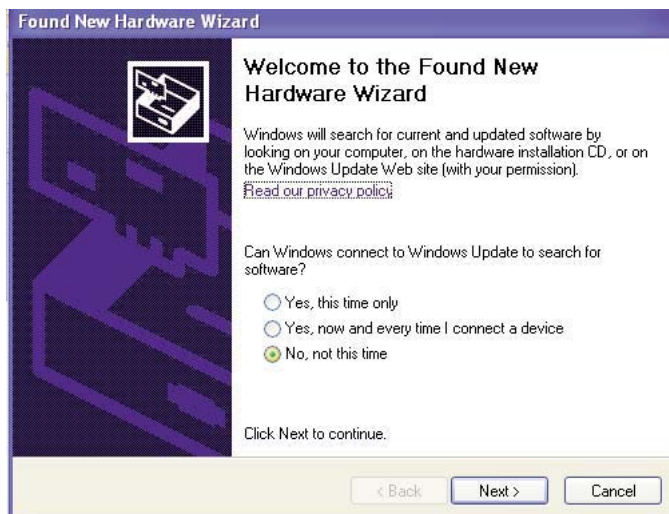
gtd_instl.inf which is the Program setup information file
and
GTD.exe which is the Program launcher executable file.

2. Download the files to a folder on your computer desktop and note the location for later use.

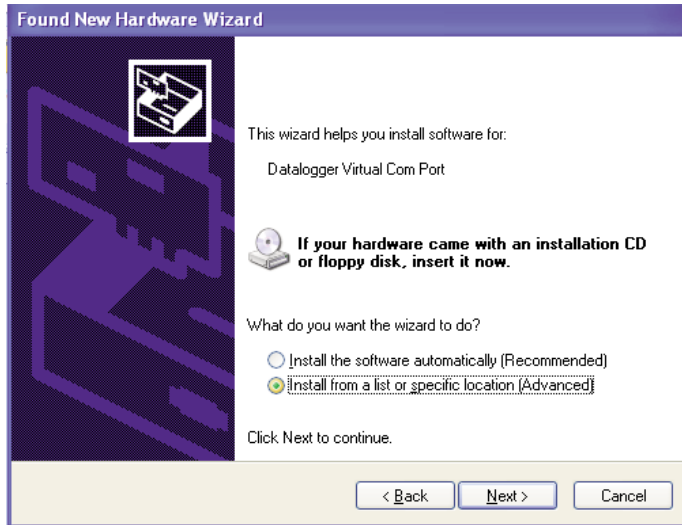
3. Carefully open the data logger ESD package and inspect the board for any signs of damage. If damage is noted, immediately file claim with carrier. Retain the ESD protective packaging for storage of the transmitter output card that the data logger will replace.

4. With the computer operating normally, connect the (customer supplied) USB cable Type 'A' end to a standard Type 'A' port on the computer. Connect the smaller Type 'B' cable connector at the small USB Type 'B' connector J4 on the data logger card.

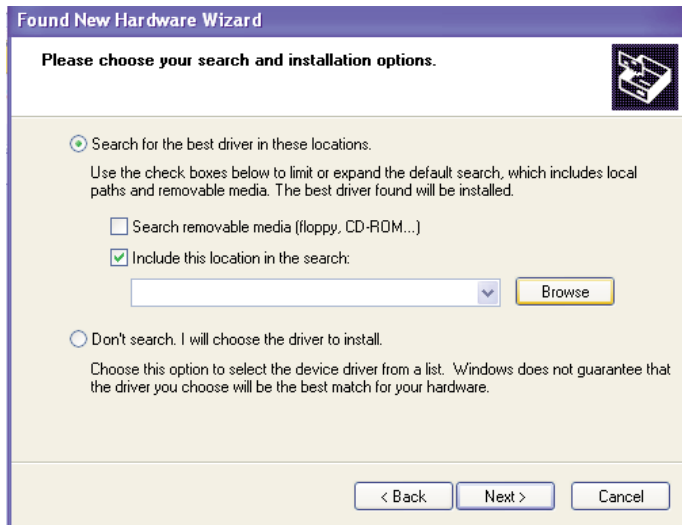
5. When the cable is attached to the data logger, the 'Found New Hardware Wizard' will appear on the computer screen, and the green ACTIVITY indicator on the data logger will begin blinking at 1 second intervals. (If this does not occur, connect the USB cable to another USB port on the computer.) Select "No, not this time" when asked if Windows should connect and search for software, then click on "Next".



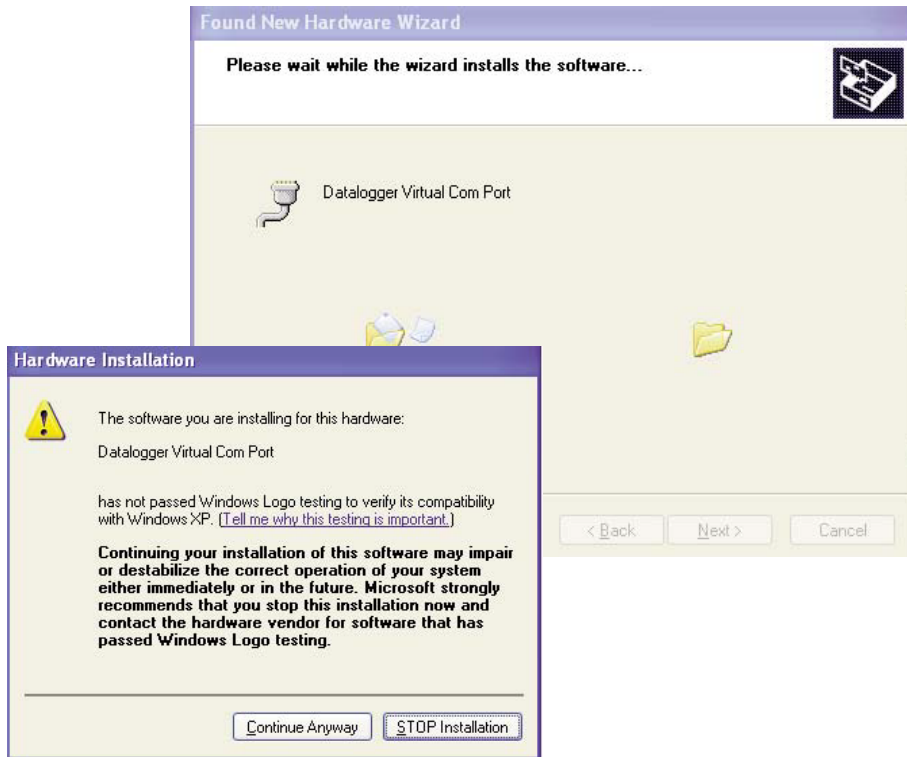
6. The Found New Hardware Wizard window will identify the device and present the following screen. Select the option “Install from a list or specific location” option, and then click “Next”.



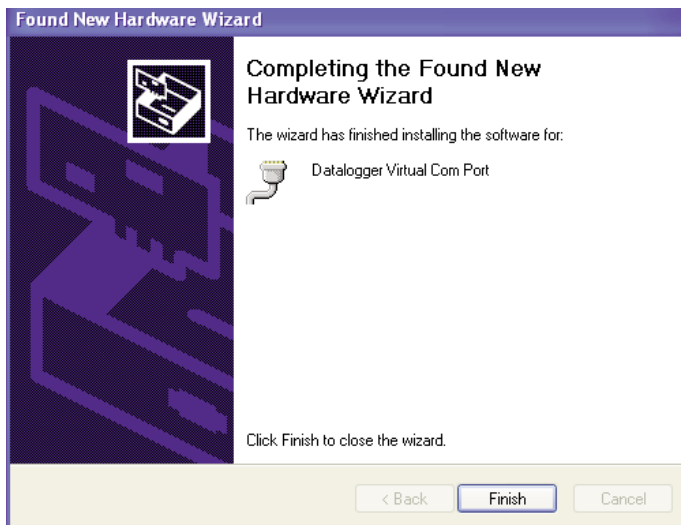
7. When presented with the next screen, select “Include this location in search” option, select the “Browse” button to go to the directory where the downloaded GTDsoftware is stored, then click “Next”.



8. The following screen indicates that software is being installed, and is followed by the “Hardware Installation” alert indicating that the software has not passed Windows Logo Testing. Select the “Continue Anyway” button in this window, then the “Next” button when software installation is complete.



9. The following screen will be displayed, indicating that the software has been successfully installed. Select the “Finish” button to close the wizard and complete software installation.



10. Proceed to the following Data Logger Card Configuration procedure to set time and sample interval.

a measurable difference!

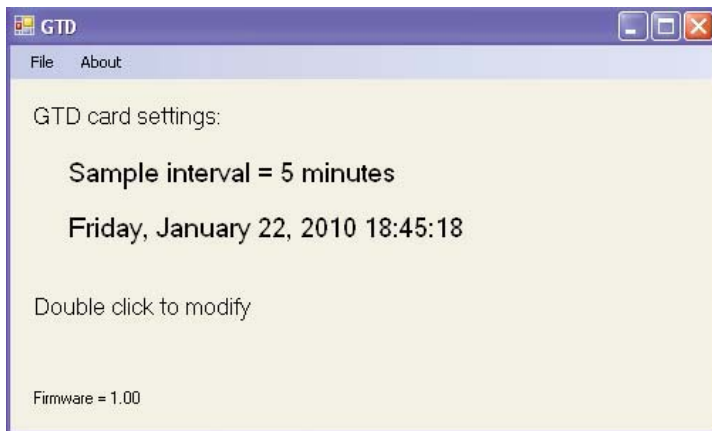
5.1.2 Data Logger Card Configuration

The following procedure is optional, and is only required if changes to the factory default UTC time setting and 5-minute sample interval are necessary.

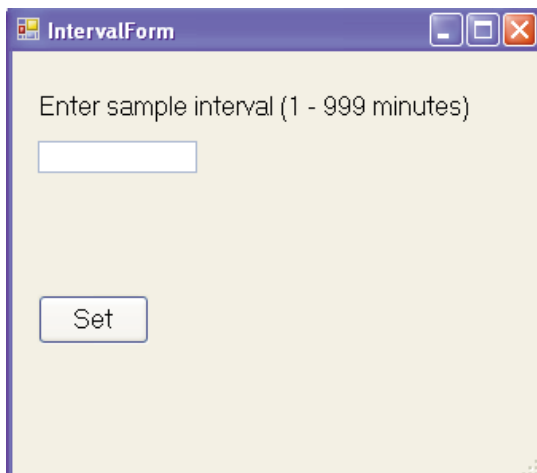
***Note:**

The data logger requires a USB device with FAT16 or FAT Data logger configuration must be accomplished with the data logger card operating alone, and not installed in the transmitter.

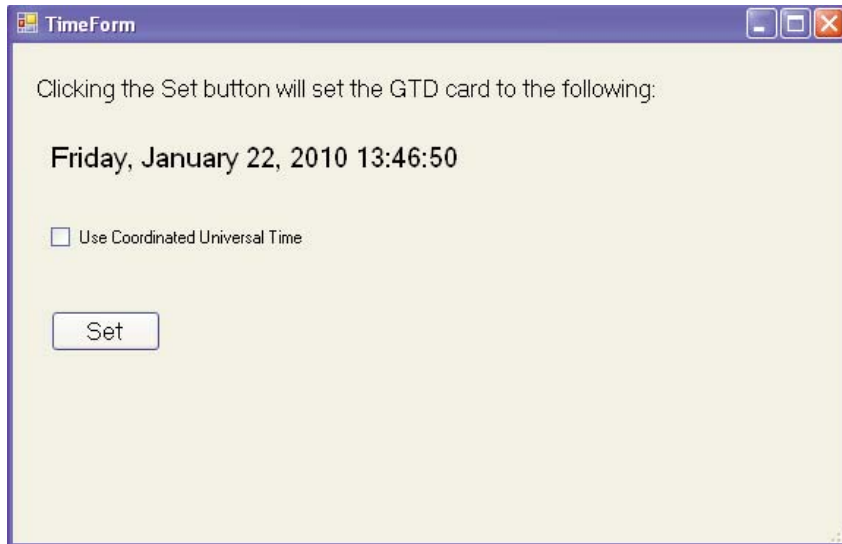
1. Ensure that the data logger software has been properly installed as outlined in the Data Logger Software installation section of this document.
2. With the computer operating normally, connect the (customer supplied) USB cable Type 'A' end to a standard Type 'A' port on the computer. Connect the smaller Type 'B' cable connector at the small USB Type 'B' connector J4 on the data logger card.
3. Locate the directory where the downloaded files were stored on the computer, and using your mouse, double-click the GTD.exe file (or right-click the file and then select Open). This will launch the data logger setup program (below).



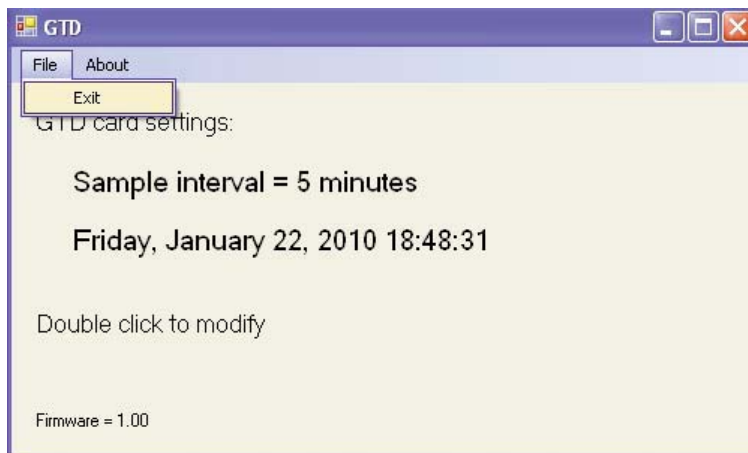
4. To change the sample interval, double click anywhere over the "Sample Interval= 5 minutes" text, and the IntervalForm screen will appear (see below). In the blank box, enter the new sample interval in whole minutes (no decimals) from 1 to 999 minutes, and then click on the "set" button to set the new value and close the IntervalForm screen.



5. To set the time on the data logger card, double click anywhere over the text showing the current day, date and time. The following TimeForm screen will appear. Selecting the check box marked "Use Coordinated Universal Time" will synchronize the data logger clock to the computer clock adjusted to UTC. Leave the check box unmarked to synchronize the data logger clock to the computer clock. Click on the "set" button to set the new time value and close the TimeForm screen.



6. To exit the GTD data logger setup program, move mouse cursor and select the "file" category at the upper left of the GTD window and then select "exit".



7. This completes configuration and set up of the data logger card. Proceed to the Section 3 (DATA LOGGER CARD INSTALLATION) to install the data logger card into the transmitter.

6 ADDITIONAL INFORMATION

For additional information on setup and operation of the GTD116 or GTD108 Transmitter, refer to the respective Transmitter Technical Manuals under separate cover.

For technical support, please contact the EBTRON Customer Support team at 1-800-2EBTRON (1-800-232-8766).

7 SETUP MENUS

Refer to the GTx116 or GTx108 Transmitter Technical Manuals under separate cover for setup menus and submenus specific to each transmitter output type.

8 WIRING DIAGRAM

Appendix B contains the wiring diagram for the GTD116 transmitter.

APPENDIX A - GTD116, GTD108 WIRING DIAGRAM

