

**LUDLUM MEASUREMENTS, INC.  
DIMENSION CONFIGURATION MANAGER  
SOFTWARE MANUAL**

**July 2011**

**Version 1.0.0**



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## Section

## 1

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## 1.0 Introduction

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The Ludlum Dimension Configuration Manager software is a software package that calibrates any of the Dimension product line of instruments. Calibration and configuration of the Dimension product line requires a special USB cable for communications between the Dimension Configuration Manager software and the instrument. This manual covers the installation and configuration of the Dimension Configuration Manager software.

See section 4.0 Dimension Configuration Manager Software Installation for installation instructions.

## Section

## 2

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## Section

## 3

## 3.0 Getting Started

The Dimension Configuration Manager software can run on both desktop and server operating systems and also can be installed on a virtual machine. It is not necessary for all components to be installed on a single computer. SQL Server, Internet Information Service (IIS), and the Universal software can be installed on different systems.

### 3.1 Software Prerequisites

The following software must be installed on the network and working before installing the LMI Universal software. Any software prerequisites that are from Microsoft can be downloaded at <http://www.microsoft.com/download/>.

- ☛ Windows Installer 3.1 or later. Windows Installer is not included on the installation media.
- ☛ Internet Explorer 5.01 or later. Internet Explorer is not included on the installation media.
- ☛ .NET Framework 4 Client Profile or later. .NET Framework 4 Client Profile is included on the installation media.
- ☛ FTDI Virtual COM Port Driver version 2.08.14 or later. FTDI Virtual COM Port Driver is included on the installation media and can be downloaded automatically from Windows Update (with an available Internet connection) or manually downloaded from FTDI's web site <http://www.ftdichip.com/Drivers/VCP.htm>.

See the appropriate installation documentation for the above items.

### 3.2 Minimum Requirements

- ☛ **Supported Operating Systems:** Windows 7, Windows 7 Service Pack 1, Windows Server 2003 Service Pack 2, Windows Server 2008, Windows Server 2008 R2, Windows Server 2008 R2 SP1, Windows Vista Service Pack 1, Windows XP Service Pack 3

- ☛ Recommended Minimum: Pentium 1 GHz or higher with 512 MB RAM or more (1 GB or more is recommended)
- ☛ 2.5 GB of free hard disk space

### 3.3 Installation Overview

The installation requires all of the components to be installed on a single computer or virtual machine. The steps are:

1. Install any required prerequisites.
2. Install the Dimension Configuration Manager software.

## Section

## 4

## 4.0 Dimension Configuration Manager Software Installation

### 4.1 Installing the Dimension Configuration Manager software

To install, run LMIDimCfgMgr.EXE (which can be found on the installation media) and follow the on-screen prompts.

The installation program requires administrator privileges. Some versions of Windows, usually Professional and above, will prompt you to allow the installation program to make changes on this computer:

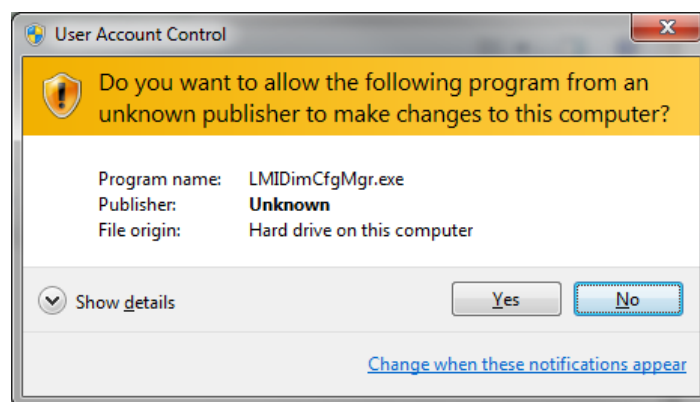


Figure 1 - User Account Control window on Windows 7 Professional

Click on the Yes button to continue the installation.

You will be prompted for a language to use during the installation process.

Next, you will be prompted to accept the End User License Agreement. Should you choose not to accept the agreement, the installation will exit without installing the application.

Then you will be prompted for a folder to install the application.

The default installation location is:

System Type	Location
32 bit Windows	C:\Program Files\Ludlum Measurements, Inc\Dimension Configuration Manager
64 bit Windows	C:\Program Files (x86)\Ludlum Measurements, Inc\Dimension Configuration Manager

At this point, you will be prompted for a folder to use in the Start Menu.

Finally, you will be prompted to create icons on the desktop, and depending on your version of Windows, in the Quick Launch menu.

You are ready to install the application.

When the application installation completes successfully, a window with the latest information about the application will be displayed.

## Section

## 5

## 5.0 Dimension Configuration Manager Software Configuration

### 5.1 Configuring the Dimension Configuration Manager

The Dimension Configuration Manager software currently has two settings that can be configured:

- Theme
- Logging

#### 5.1.1 Configuring Themes

You can configure the color theme used by the Dimension Configuration Manager software by choosing from the menu Options → Theme → *theme color*.

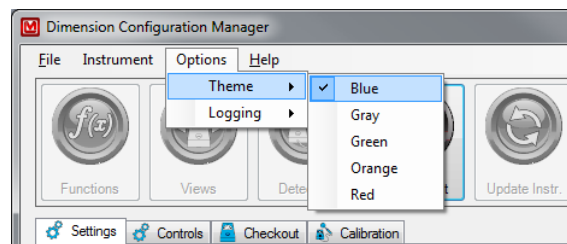


Figure 2 - Selecting the color theme

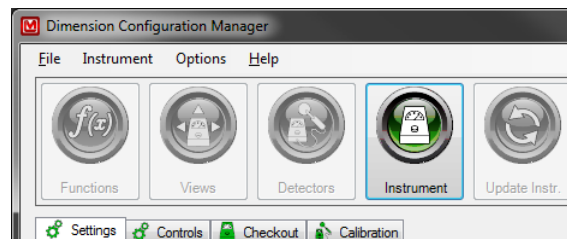


Figure 3 - Example of the green theme in use

#### 5.1.2 Configuring Logging

You can configure the level of logging to be performed by the Dimension Configuration Manager software by choosing from the menu Options → Logging → *logging level*.

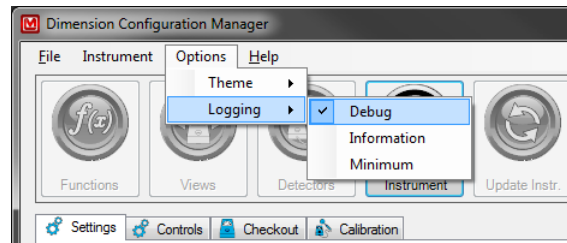


Figure 4 - Selecting the logging level

The Dimension Configuration Manager software currently has three logging levels:

Level	Description
Debug	Performs the most detailed logging of the application events and communications. This level of logging includes all of the logging level(s) listed below. This is the recommended logging level to use when there are communication issues with the instrument. This setting will generate a significant number of log entries that, over time, will cause the log files to become very large.
Information	Performs a lesser detailed logging of the application events and communications. This level of logging includes all of the logging level(s) listed below. This is the recommended logging level to use when there are no communication issues with the instrument.
Minimum	Performs the bare minimum logging of the application events and communications that are always recorded ( <i>e.g.</i> , application start-up). This logging level is recommended to use when there are no communication issues, and the user has sufficient experience with the application to determine when to switch to a more detailed logging level.



## Section

## 6

## 6.0 Quick Tour

## 6.1 Main Window

The main window has several sections of note:

- Menu bar
- Tab selection buttons
- Tab pages
- Status bar

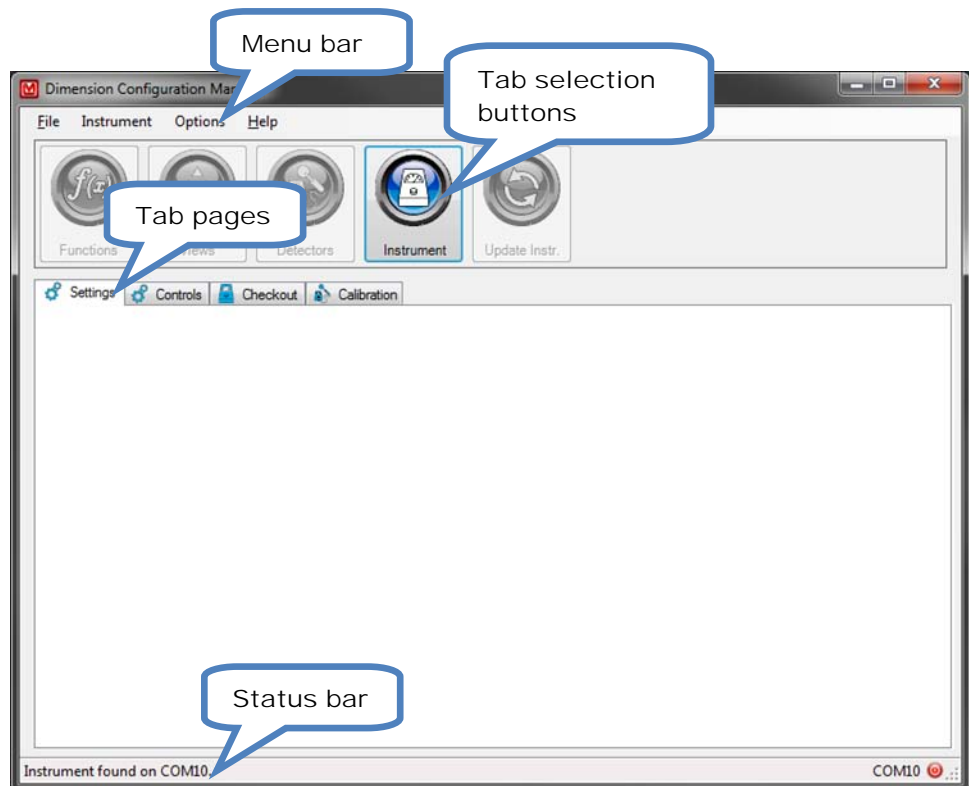


Figure 5 - Main window

## 6.1.1 Menus

## 6.1.1.1 FILE MENU

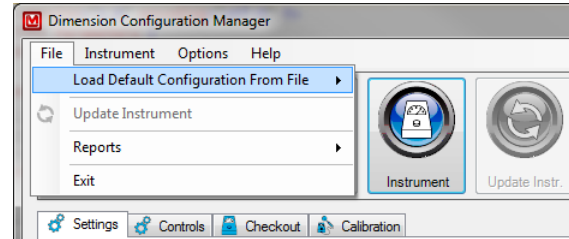
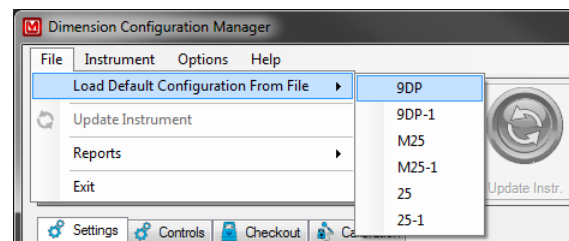


Figure 6 - File menu

☛ Load Default Configuration From File → *available instrument models*

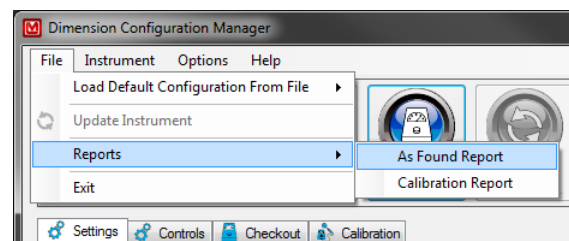
Figure 7 - File menu → Load Default Configuration From File → *available instrument models*

Pick a model from the menu and the application loads a factory default configuration. No instrument or cable is required to be connected for this to function. You will not be able to perform any updates or real time readings using this method to load a configuration.

☛ Update Instrument

Communicate changes to the instrument. This menu item is equivalent to the Update Instrument button on the Tab Selection buttons.

☛ Reports → *available reports*

Figure 8 - Reports → *available reports*

The application currently has two reports that can be generated from a connected instrument: As Found; and Calibration. You will receive a warning if you attempt to print a report without a connected instrument.

#### ☢ Exit

Disconnects from the instrument and shuts down the application.

### 6.1.1.2 INSTRUMENT MENU

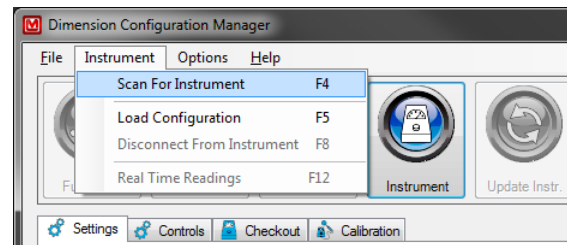


Figure 9 - Instrument menu

#### ☢ Scan For Instrument

Perform a scan of all available serial ports (RS-232 and virtual) for an instrument. Results of the scan will be displayed in the status bar. If an instrument is found, the port name will be displayed next to the connection status indicator. Otherwise, it will display “N/A”.

#### ☢ Load Configuration

Connect to the instrument. Some instruments will change the display to indicate a connected state. The connection status indicator will change to green. The application will query the instrument for its current settings, displaying them on various tab pages.

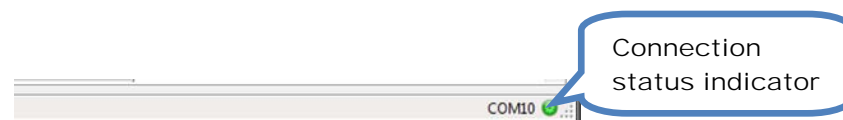


Figure 10 - Connection status showing connected

#### ☢ Disconnect From Instrument

Disconnect from the instrument. This will also stop the real time readings (if currently started). Some instruments will change the display to indicate a disconnected state. The connection status indicator will change to red.

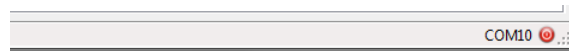


Figure 11 - Connection status showing disconnected

### ☢ Real Time Readings

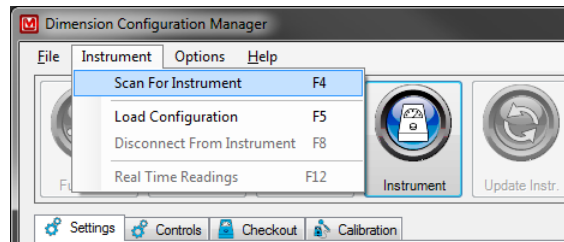


Figure 12 - Instrument menu

Turn on or off the real time readings being sent from the instrument. Real time readings are displayed on any scale/meter face being displayed. This menu item is disabled until a connection to an instrument is made.

#### 6.1.1.3 OPTIONS MENU

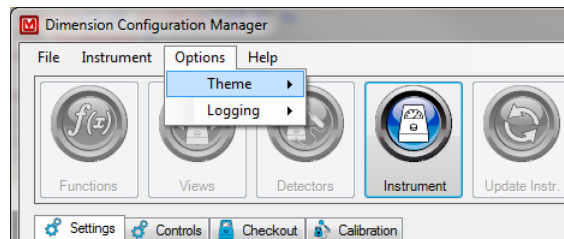


Figure 13 - Options menu

This menu and its options are covered in section 5.1 Configuring the Dimension Configuration Manager.

#### 6.1.1.4 HELP MENU

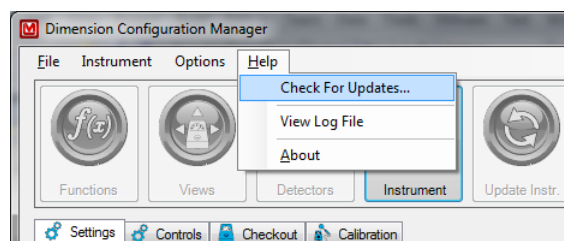


Figure 14 - Help menu

### ☢ Check for updates

Check for application and configuration updates through the Internet.

☢ View Log File

View the log file contents.

☢ About

Open a window that shows version information about the application and configuration files.

### 6.1.2 Tab Selection Buttons

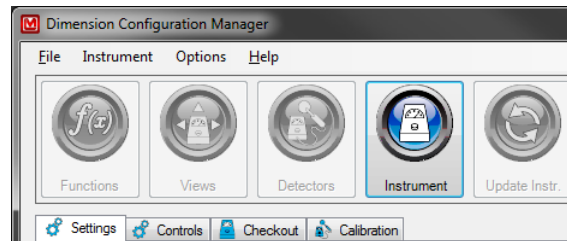


Figure 15 - Tab Selection buttons

Click on one of the tab selection buttons to make that set of tabs visible. With this version of the application, only the Instrument tabs are available.

### 6.1.3 Tab Pages

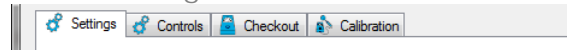


Figure 16 - Tab Pages

Each of the tab pages contains controls for different configuration items on the instrument. Each instrument model (9DP, 9DP-1, 3D, 3D+, etc.) will have different controls displayed on each of the tabs. While some of the tabs may contain exactly the same controls between models, this should not be expected.

☢ Settings

This tab page will contain controls that are used to configure the instrument's primary settings. This is primarily for the instrument identification, date and time settings, calibration and due dates, and instrument passwords.

☢ Controls

This tab page will contain controls that are used to configure the instrument's control settings. This is primarily for the display backlight and audio settings.

☢ Checkout

This tab page will contain controls that are used to configure the instrument's main board settings. This is primarily for the voltage and battery settings.

#### Calibration

This tab page will contain controls that are used to configure the instrument's detector calibration settings. This is primarily for the calibration constants settings. The real-time readings display is usually on this tab page.

#### 6.1.4 Status Bar

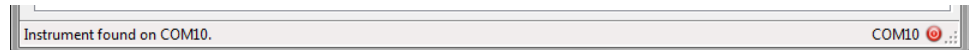


Figure 17 - Status bar

The status bar is divided into three sections. The left side is the status message area. On the right side are the serial communications port name and the connection status icon.

Performing various actions within the application will change the status message. Some actions will also display a pop-up window with detailed information.

## Section

## 7

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## 7.0 Operation

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The Dimension Configuration Manager software performs a specific function utilizing generic methodologies. Application operations are discussed from a generic instrument standpoint. Instrument specific operations (checkout and calibration) are documented separately.

### 7.1 Start Up

When the application starts, many functions are performed automatically for you. At the start of the application, the application will scan for the instrument. If the instrument is connected and powered up, the application will display the serial communications port name in the right section of the status bar. If your computer is connected to the Internet, the application will also check for any updates.

### 7.2 Loading An Instrument Configuration

If a serial communications port name is displayed in the right section of the status bar, you can load an instrument configuration by choosing Instrument → Load Configuration from the menus or by pressing the F5 key on your keyboard. The application will set the instrument into a connected state. On some instruments, this will change the instrument display. Fields will be loaded onto the tab pages with the current settings from the instrument. Please refer to the instrument specific documentation for checkout and calibration for a list of fields, acceptable values, and definitions that will be on each tab page.

**Note:** If the instrument model loads a current date and/or time, the date/time field will be at the time the application requested the information from the instrument. Current date/time fields do not update as time progresses.

When the application is in a connected state with the instrument, the connection status indicator will change to green. While the connection status indicator is green, you should not physically disconnect the instrument from the computer without first instructing the application to disconnect from the instrument.

### 7.3 Changing A Field Value



Figure 18 - A blank text field value

Changing the value of a field is dependent on the type of field being displayed. Text fields can display any type of text available. While the field entry is not restricted to a specific type of text (e.g., numbers), the purpose of the field may require that the field be numeric.

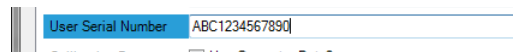


Figure 19 - A text field that has been changed

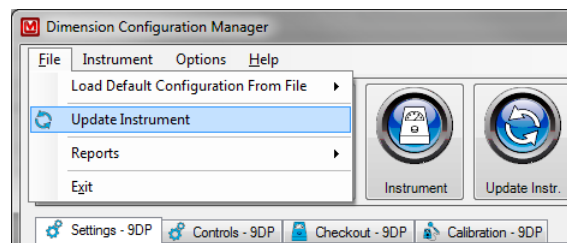


Figure 20 - Update Instrument button and menu item available

Once a field value has been changed from the value loaded from the instrument, the background color of the field will change colors (to a theme based color). The Update Instrument menu item and button in the tab selection buttons will become available. Click on either the Update Instrument button or menu item to save the changes to the instrument.

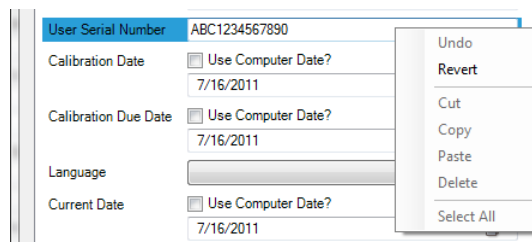


Figure 21 – Pop-up menu for a field

You can revert an individual field's value back to the current value on the instrument. To revert, opposite button click on that field. Click Revert on the pop-up menu that appears to change the value to the current value from the instrument. Menu items will vary with the field type and what actions have been performed.



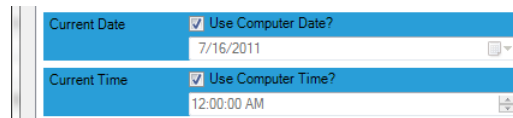


Figure 22 - Using the computer's date and time to set the instrument's value

Date and time fields have a check mark that instructs the application to use the computer's date or time when setting the instrument's values. Tick the check mark to use the computer's date or time. Untick the check mark to manually set the date or time.

## 7.4 Updating The Instrument

Click on the Update Instrument menu item, or button in the tab selection buttons, to send the changes to the instrument. After the instrument has been updated successfully, the field will change the background color to its default color. The Update Instrument menu item and button will become disabled (grayed out).

If a field does not update successfully, a window will be shown listing all of the fields that did not update. The most common cause of a field not updating is trying to change a read-only field.

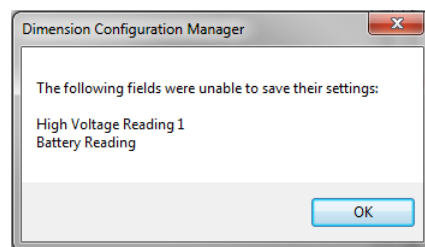


Figure 23 - Fields that did not update

## 7.5 Real Time Readings

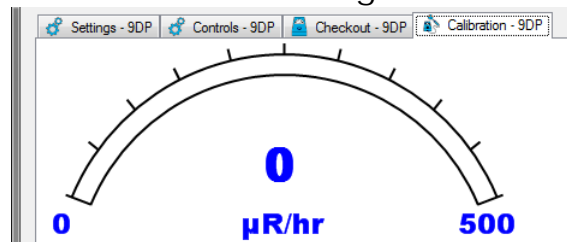


Figure 24 - Real time readings meter face

Real time readings from the instrument can be started only when an instrument is in a connected state with the application. Refer to section 6.1.1.2 Instrument Menu for more information about the connected state. The real time readings

meter face will display the same information as your instrument. If your instrument is set to automatically change ranges, the meter face will mimic the changes as they occur.

**Important:** Failing to disconnect from the instrument can cause real time readings from the instrument to have communication issues with the application.

**Note:** The real time readings meter face will change with the instrument model that is being connected.

## 7.6 Disconnecting The Instrument

You can disconnect from the instrument by using the Instrument menu (see 6.1.1.2 Instrument Menu) or by shutting down the application through normal means (e.g., clicking the red X at the top of the window). This step is required before returning the instrument to a service status.

**Important:** Failing to disconnect from the instrument can cause real time readings from the instrument to have communication issues with the application.

## Section

## 8

## 8.0 Troubleshooting

## 8.1 Instrument Not Found At Application Start-Up

There are several possible reasons that an instrument cannot be found when starting the application:

Reason	Solution
Cable is loose or missing	Reconnect the cable at both ends. Scan for the instrument again. If the application is being run on a virtual machine, configure the virtual machine to have access to the cable.
Cable is not the supplied cable	The Dimension product line requires a special USB cable for communications between the Dimension Configuration Manager and the instrument. An off-the-shelf USB cable will not communicate correctly with the instrument. Find the special cable supplied with the software. If your cable is lost or damaged, you can order another cable (LMI part number 21-8758) directly from LMI or your local distributor.
Instrument not powered up	Turn the instrument on. Scan for the instrument again.
Interference with another serial device	Disconnect the other serial device's cable (if external). Disable the device within Windows using the Device Manager.

## 8.2 Tab Pages Display Unusual Instrument Information

This can happen when an instrument was in the real time readings mode and not disconnected from the application. To correct this, power down the instrument for a moment and then power it back up. Insure the cable is properly connected. Load the instrument configuration again.