HART SCIENTIFIC

9972 INFO-CON

Download Adapter Software
User's Guide

Rev. 243002

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1 Introduction

1.1 What is the INFO-CON Download Adapter Software?

The Model 9972 INFO-CON Download Adapter Software is used with the Model 2372 INFO-CON Download Adapter to program an INFO-CON connector with new probe calibration coefficients without using the Model 1521 LLK Handheld Thermometer readout or Model 1522 LLL Handheld Thermometer readout.

The Model 2372 INFO-CON Download Adapter is a small metal box that has a 9-pin serial cable. The serial cable connects to a serial (COM) port on a PC. The software can then be used to read, edit, and write changes to the INFO-CON connector.

Each probe that is used with the Model 1521 LLK or Model 1522 LLL thermometer readout is attached to an INFO-CON connector. The connector is programmed with the calibration information specific to that probe. When a probe is attached to the thermometer, the thermometer automatically reads the calibration information from the connector, thus eliminating the need for the technician to manually enter the calibration information into the thermometer.

This software allows the serial number, calibration date, expiration date, conversion type, probe wires, and conversion coefficients to be read in, viewed, edited and written back out to the connector. This software also allows the information to be saved to a file on disk.

1.2 Features

The INFO-CON Download Adapter Software provides a fast, convenient way to program the Hart Scientific INFO-CON connector.

The INFO-CON connector was designed by Hart Scientific for use with the Model 1521 LLK and Model 1522 LLL Thermometer readouts. The connector is used to store information about the probe that is attached to it. This information includes:

- Probe Serial Number
- Probe Calibration Date
- Probe Calibration Expiration Date
- Conversion Type
- Probe Wires
- Conversion Coefficients

This software provides an easy-to-use Windows interface for setting this information. This software also provides some other features for handling this information including:

- Formatting/Erasing connectors
- Saving information to binary file
- Reading information from binary file
- Saving all information to text file
- Saving coefficients to text file
- Reading coefficients from text file

1.3 Requirements

The following minimum hardware and software requirements are expected to run the INFO-CON Download Adapter Software.

1.3.1 Computer Hardware Requirements

The following minimum computer configuration is required to run the software:

- IBM compatible 486 PC or better with 8MB RAM (Pentium class processor with 16MB RAM or more recommended)
- VGA monitor or better
- CD-ROM drive for installation
- 1- RS-232 serial communication port (COM port)
- Minimum 7 MB Hard Disk space

1.3.2 Computer Software Requirements

This software requires the following operating system:

- Windows® 95/98/ME or
- Windows® NT/2000/XP

1.3.3 Other Requirements

This software also requires the following:

- 1- Model 2372 INFO-CON Download Adapter (included)
- INFO-CON connector(s)

1.4 Software Installation

A backup should always be made of your hard disk drive before installing any software and all running applications should be closed.

Note: If this software has been previously installed on this computer, follow the Uninstalling the Software instructions below before proceeding!

1.4.1 Installing from CD

1. Insert the INFO-CON Download Adapter Software CD-ROM into your CD-ROM drive. The Setup program should run automatically.
2. Follow the on-screen instructions. The README file will be displayed. Read this file for important information that was not available when the manual was printed.
3. The software files are copied to the specified folder.
4. The installation creates a menu option in the Programs menu called Hart Scientific 9972. The program, help file and README icons are all located in this menu.

1.5 Uninstalling the Software

The INFO-CON Download Adapter Software installation creates an entry for uninstallation in the Add/Remove Programs option in the Control Panel. To uninstall the software, follow the instructions below:

1. Open the Control Panel by selecting the Settings | Control Panel option in the Start menu.

2. In the Control Panel, double-click the Add/Remove Programs icon to open the Add/Remove Programs dialog.

3. In the list that appears, locate and click on the 9972 INFO-CON entry.

4. Click the Add/Remove (Windows® 9x/ME/NT) or Change/Remove (Windows® 2000/XP) button.

5. Follow the on-screen instructions to remove the software.

   Note: Removing this software does NOT delete any files that have been saved since the software was installed. These files must be deleted manually using Windows® Explorer.

   Note: When removing the software, you may receive one or more prompts to choose whether or not to delete a specific file from the system as the software is being removed. Be careful not to remove a file that is required by another application. To be safe, you may wish to choose NOT to remove one or all of these files. If you are sure the files are not used by any other applica-

tions, they may be removed. For a list of files that this software installs on your system, see Section 1.7, Required .DLL and .OCX Files.

6. When finished removing the software, close the Add/Remove Programs dialog by clicking the OK (Windows® 9x/ME/NT) or Close (Windows® 2000/XP) button.

1.6 Running the Software

To run the Model 9972 INFO-CON Download Adapter Software, click the Start button, then select Programs | Hart Scientific 9972 and click on the 9972 INFO-CON Software icon.

Every time this software is run, it checks to make sure that all of the required .DLL and .OCX files are found on your computer. If the software detects that an older file has replaced one or more of these files or that the file is not found, the Shared Files Conflict dialog (Figure 1) appears detailing the problems found.

Every time you install any software on your computer, it is a good idea to make a backup of your important files, including all files in the \WINDOWS (or \WINNT) and \WINDOWS\SYSTEM (or \WINNT\System32) folders. Sometimes during the installation process, a file may be replaced with an older version that is not 100% compatible with the first. This may cause the software to perform unexpectedly or fail to run at all. Replacing a .DLL or .OCX file with a

newer version does not usually cause any problems because these files are typically backward-compatible. There are, however, exceptions to this rule.

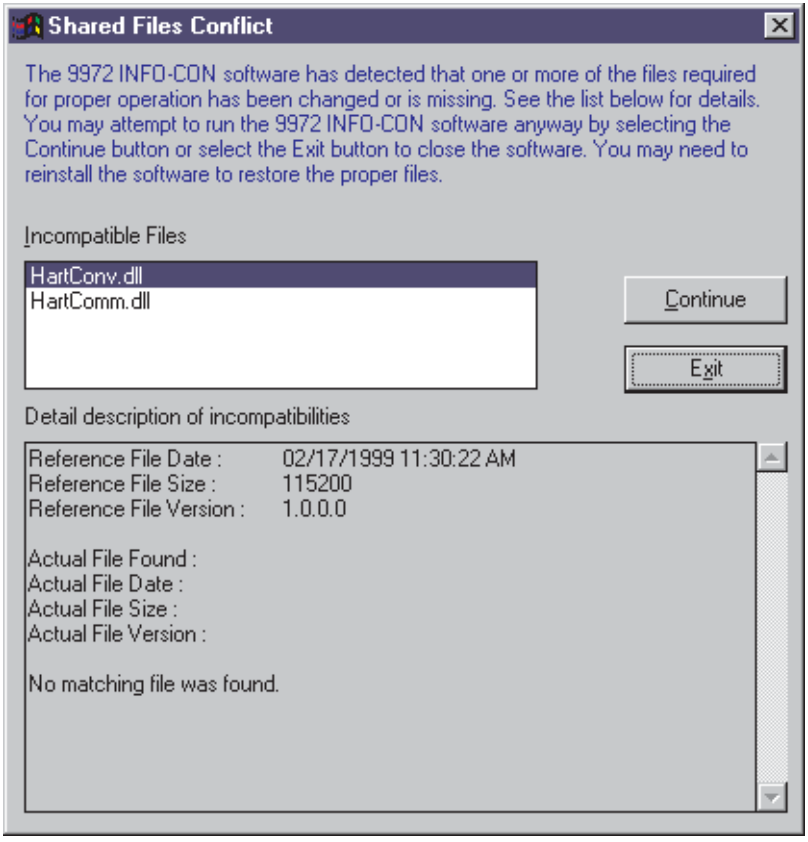

Figure 1 *Shared Files Conflict Dialog*

If the Shared Files Conflict dialog is displayed when you run the software, a list of the files is shown in the Incompatible Files list. Select each of the files, one at a time, and read the information that appears in the bottom half of the dialog. Depending on the information given, you must decide what to do. The software may continue to run without problems, however there is no guarantee of this. If some files are missing, the best option is usually to uninstall and reinstall the software.

The .DLL and .OCX files are typically located in the \WINDOWS\SYSTEM (or \WinNT\System32) folder. If you find it necessary to avoid conflicts, these files can be copied to the folder where the software was installed. Be sure to compare the files on your computer with the list of required .DLL and .OCX files (see Section 1.7).

After selecting the Continue button or if there were no file conflicts, the INFO-CON Download Adapter Software Main Display is shown.

1.7 Required .DLL and .OCX Files

This software requires certain .DLL and .OCX files to function properly. All required files are shipped on the installation CD-ROM. A list of these files and their required date stamp follows:

.DLL Files	Date
HARTCOMM.DLL‡	04/13/1999
HARTCONV.DLL‡	06/21/1999
IB97E32.DLL‡	04/01/1998
IBFS32.DLL‡	04/01/1998
MFC40.DLL†	04/24/1998
MFC42.DLL†	09/26/1998
MSSTDFMT.DLL†	06/18/1998
MSVBVM60.DLL†	09/25/1998
MSVCRT.DLL†	01/05/1999
MSVCRT40.DLL†	05/31/1998
SCRRUN.DLL†	05/26/1998
.OCX Files	**Date**
COMDLG32.OCX†	06/24/1998
DWVSTP32.OCX†	03/26/1999
MSCOMCT2.OCX†	05/07/1999
MSCOMCTL.OCX†	06/26/1998
SSCALA32.OCX†	01/12/1999

†These files are very likely to be used by other applications. When uninstalling this software, you may wish to choose not to remove these files from your system if prompted.

‡These files are specific to this software and are very unlikely to be used by other applications. When uninstalling this software, you should choose to remove these files from your system if prompted.

1.8 Quick Start

The following information is intended to provide a brief overview on how to get the INFO-CON Download Adapter Software up and running quickly.

1. Click the Start button and select Programs | Hart Scientific 9972 | 9972 INFO-CON Software.
2. Connect the Model 2372 INFO-CON Download Adapter to one of the COM ports on the computer.
3. Insert an INFO-CON connector into the adapter. The probe information is read in automatically.
4. To change the information, use the options under the Edit menu. The software prompts to confirm writing changes out to the INFO-CON connector.
5. Remove the INFO-CON connector when finished.
6. Repeat steps 3 - 5 for other INFO-CON connectors.

1.9 INFO-CON Download Adapter Software Main Display

The INFO-CON Download Adapter Software expects to communicate with an INFO-CON connector through the Model 2372 INFO-CON Download Adapter. This adapter must be connected to a serial (COM) port on the computer. When running this softwre for the first time, the software displays a prompt to select the appropriate COM port. Connect the adapter to a COM port at this time and select the appropriate COM port from the dialog displayed.

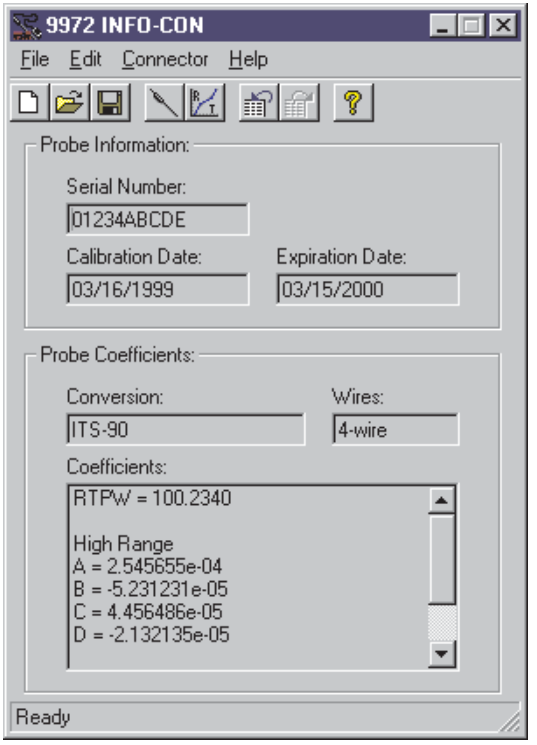

Figure 2 *Main Display*

When the software detects the presence of the Model 2372 INFO-CON Download Adapter, a prompt is displayed stating that an INFO-CON connector may be plugged into the adapter at any time. The software constantly monitors the adapter to determine when an INFO-CON connector has been plugged in.

When the software detects an INFO-CON connector, it automatically attempts to read the probe information from the connector and displays it on the screen. The settings can then be modified using the Edit menu options.

If any of the connector information has been changed but not written back to the INFO-CON connector, the text color for that information changes to red.

When the information is written to the INFO-CON connector using the Connector menu, the text color changes back to black.

1.10 Toolbar

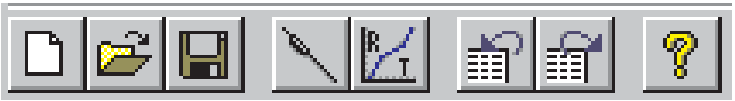

Figure 3 Toolbar

The toolbar (Figure 3) provides quick access to many of the most common functions of the software.

The following buttons are available on the toolbar.

New - Erases current probe and coefficient information from the connector

Open - Opens a previously saved file containing probe and coefficient information

Save As - Saves the current probe and coefficient information to a file

Edit Serial Number and Dates - Allows the serial number and calibration dates information to be changed

Edit Coefficients - Allows the conversion type and coefficients to be changed

Read Connector - Reads in the probe information from the INFO-CON connector

Write Connector - Writes changes that have been made to the INFO-CON connector

Help - Opens the Model 9972 INFO-CON Download Adapter Software Help File

2 File Menu

The File menu (Figure 4) provides options for creating a new configuration, opening an existing INFO-CON file, saving an INFO-CON file, setting up program defaults and exiting the program.

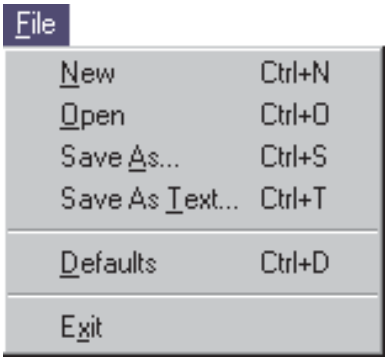

Figure 4 *File Menu*

2.1 New

The New option erases the settings in the INFO-CON connector so that the settings for a new probe can be entered. The software always prompts for confirmation before erasing the current settings.

Once a connector has been erased, it no longer contains any information about a probe.

This feature is useful when a probe must be disconnected from an INFO-CON connector so that a new probe can be connected to it. Erasing the current settings ensures that the INFO-CON connector will not contain any incorrect information about the probe that is connected to it.

Selecting New from the File menu performs the same function as selecting Format from the Connector menu.

2.2 Open

The Open menu option allows a previously saved INFO-CON file (.ICF) containing probe and coefficient information to be opened and written to the INFO-CON connector.

This feature is useful for restoring probe information to an INFO-CON connector in case the connector gets erased or damaged and must be replaced.

Selecting the Open menu option displays the Open INFO-CON File dialog. Select the .ICF file that contains the probe information that should be written to the INFO-CON connector. Then click the Open button to open the file. The current settings of the INFO-CON connector will be overwritten with the information in the .ICF file.

Note: The Open menu option will open only .ICF files written by this software. Attempting to open any other type of file may cause unpredictable results.

2.3  Save As

The Save As menu option allows the current INFO-CON connector settings to be saved to an INFO-CON file (.ICF). These files are binary files and cannot be read by a text editor.

This feature is useful for keeping a copy of the information stored on the INFO-CON connector in a file on the computer in case the connector gets erased or damaged and must be replaced.

Selecting the Save As menu option displays the Save INFO-CON File dialog. Enter a descriptive, unique filename that identifies the probe information being saved in the file (i.e. possibly include the probe model and/or serial number in the filename). These filenames can be up to 256 characters in length. The file MUST have a .ICF extension, however. This software will not allow files without a .ICF extension to be opened using the Open menu option.

2.4 Save As Text

The Save As Text menu option allows the current INFO-CON connector settings to be saved to a text file which can then be opened by any text editor and printed. The probe information is arranged in a report-style format (Figure 5).

This feature is useful for keeping a hardcopy (printout) of the information stored on the INFO-CON connector.

Selecting the Save As Text menu option displays the Save INFO-CON Text File dialog. Enter a descriptive, unique filename that identifies the probe information being saved in the file (i.e. possibly include the probe model and/or serial number in the filename). These filenames can be up to 256 characters in length.

After the file has been saved, it can be opened and printed from any text editor such as Notepad or WordPad (which are both shipped with Windows®).

```
C:\Hart9972\ITS90.TXT

Serial Number: 01234ABCDE
Calibration Date: 3/16/99
Expiration Date: 3/15/00

Conversion Type: ITS-90
Wires: 4-wire

Coefficients:
RTPW: 100.234

High Range:
A: 2.545655E-04
B: -5.231231E-05
C: 4.456486E-05
D: -2.132135E-05

Low Range:
A: 1.246547E-04
B: 6.132168E-05
```

Figure 5 *Example File Created Using the Save As Text Menu Option*

This software cannot open or read these text files. However, this software can read text files that contain only coefficients. For more information, see the Coefficients - Open menu option in Section 3.2.4.

2.5 Defaults

The Defaults dialog (Figure 6) is displayed when the Defaults option in the File menu is selected.

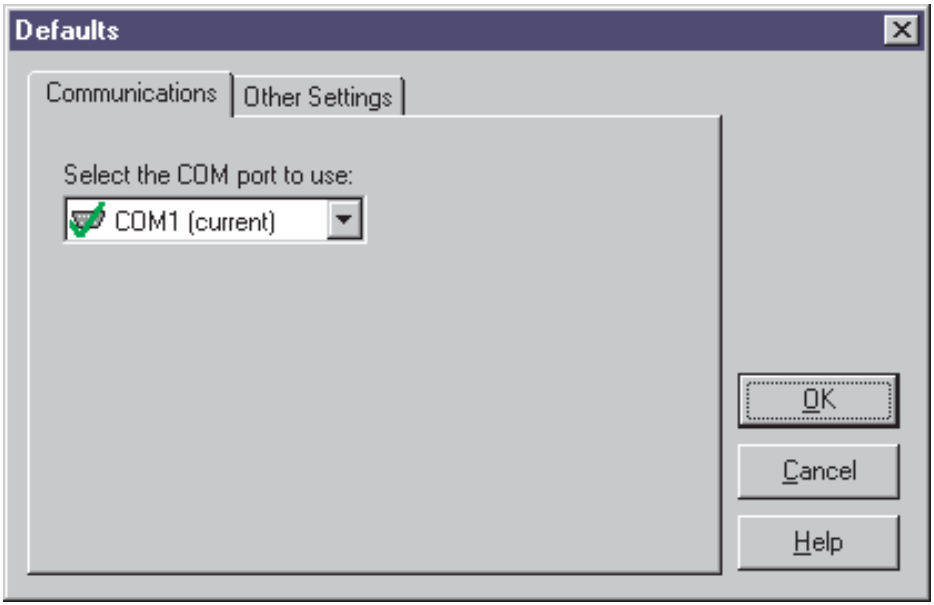

Figure 6 *Defaults Dialog*

2.5.1 Communications

The Communications tab allows the user to select the COM port to communicate between the computer and the Model 2372 INFO-CON Download Adapter.

Select the serial (COM) port to which the Model 2372 INFO-CON Download Adapter is connected by clicking the down arrow on the drop-down list. All of the COM ports on the computer should appear in the drop-down list. Each

COM port is accompanied by a symbol that reflects the current state of the COM port as follows.

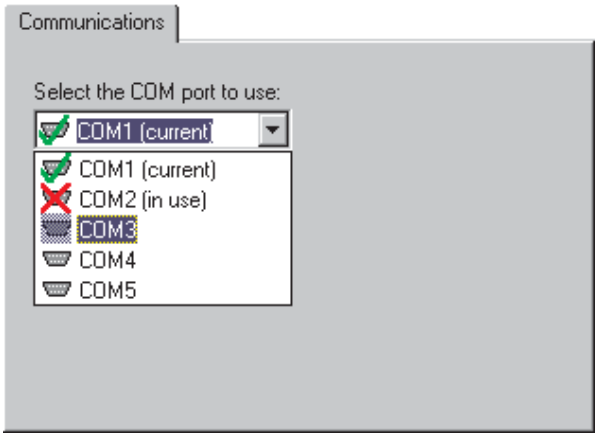

Figure 7 *Communications Tab*

COM ports with this symbol are available on this computer and can be selected.

The COM port with this symbol is currently being used by this software.

COM ports with this symbol are in use by another application and cannot be used by this software at this time.

Choose the COM port that the Model 2372 INFO-CON Download Adapter is connected to and select the OK button to accept the change and close the dialog. Selecting the Cancel button discards any changes made and closes the dialog.

2.5.2 Other Settings

The Other Settings tab allows the user to select whether or not current settings are overwritten.

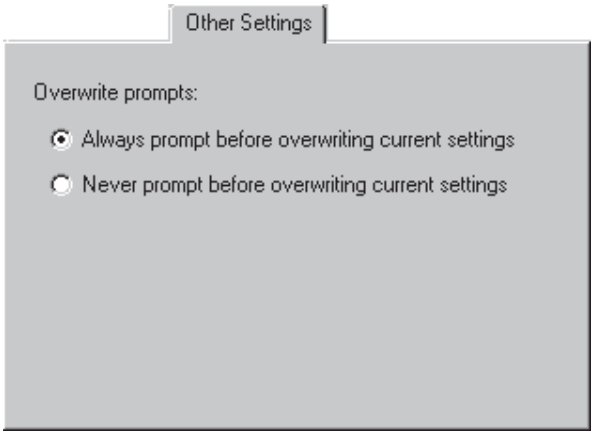

***Figure 8** Other Settings Tab*

The Overwrite prompts option allows the user to choose how the software should handle writing changes back out to the INFO-CON connector. Select one of the following options.

- Always prompt before overwriting current settings
- Never prompt before overwriting current settings

Selecting the Always prompt before overwriting current settings option forces the software to display a prompt to confirm writing changes out to the INFO-CON connector. This option is selected by default.

Selecting the Never prompt before overwriting current settings option suppresses the confirmation prompts. Changes are automatically written out to the INFO-CON connector.

2.6 Exit

Select the Exit option from the File menu to close the software.

If any changes have been made to the current INFO-CON connector settings, the software displays a prompt to write the settings to the connector before exiting.

3 Edit Menu

The Edit menu (Figure 9) provides options for entering and modifying the information stored in the INFO-CON connector.

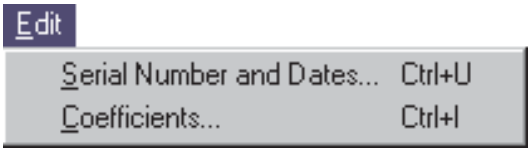

Figure 9 *Edit Menu*

3.1 Serial Number and Dates

The Serial Number and Dates dialog allows the user to enter and/or modify the serial number, calibration date and expiration date information that is stored in the INFO-CON connector.

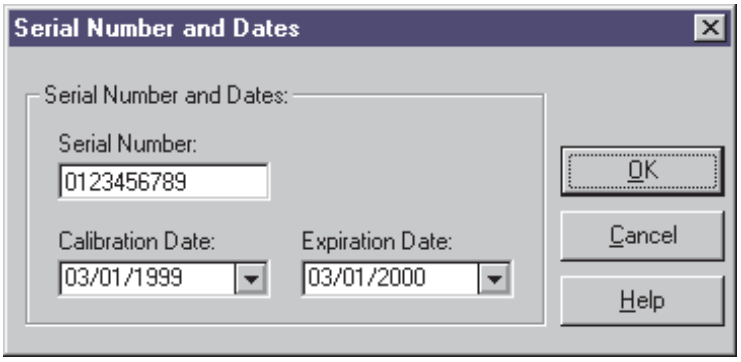

Figure 10 *Serial Number and Dates Dialog*

After the necessary changes have been made, select the OK button to write the new settings out to the INFO-CON connector. Depending on the setting of the Overwrite prompts option on the Defaults dialog, see Section 2.5.2, a prompt may be displayed asking for confirmation to write the new settings to the INFO-CON connector.

Select the Cancel button to discard any changes made and to return to the main display.

Select the Help button to display the appropriate help topic for this dialog.

3.1.1 Serial Number

Enter the serial number of the probe attached to the INFO-CON connector. The serial number can be up to 10 characters long and can contain any combination of numbers (0–9), letters (A–Z), dashes (-), slashes(/), and periods (.).

3.1.2 Calibration Date

Select or enter the date that the probe attached to the INFO-CON connector was last calibrated. The range of allowable dates is from 01/01/1970 to 12/31/2100.

3.1.3 Expiration Date

Select or enter the date that the calibration of the probe attached to the INFO-CON expires or is due for another calibration. The range of allowable dates is from 01/01/1970 to 12/31/2100.

Note: The 1521 and 1522 Thermometer readouts will display a message indicating that the probe calibration has expired if this date is prior to the current date in the 1521 or 1522 thermometer readout.

3.2 Coefficients

The Coefficients dialog allows the user to enter and/or modify the conversion type and coefficient information that is stored in the INFO-CON connector.

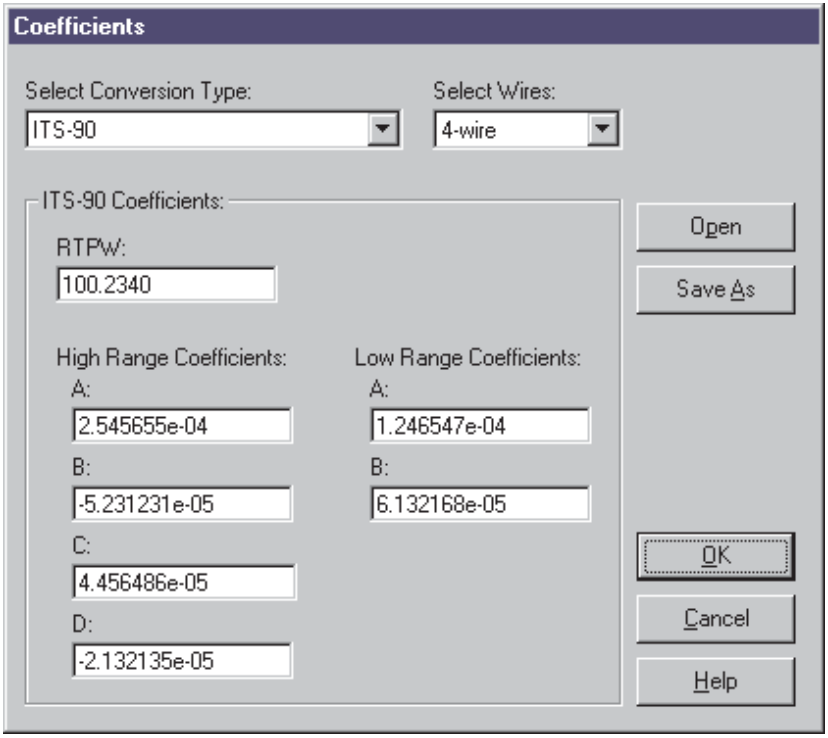

Figure 11 *Coefficients Dialog*

After the necessary changes have been made, select the OK button to write the new settings out to the INFO-CON connector. Depending on the setting of the Overwrite prompts option on the Defaults dialog, see Section 2.5.2, a prompt may be displayed asking for confirmation to write the new settings to the INFO-CON connector.

Select the Cancel button to discard any changes made and to return to the main display.

Select the Help button to display the appropriate help topic for this dialog.

3.2.1 Conversion Type

Select the conversion type for the attached probe based on the information on the Report of Calibration for that probe. The allowable choices are:

- Callendar-Van Dusen
- IEC-751
- ITS-90
- Thermistor
- YSI-400

3.2.2 Wires

Select the wires settings that matches how the attached probe is connected to the INFO-CON connector.

3.2.3 Coefficients

The coefficients that must be entered change depending on the selected conversion type. Enter the coefficients for the probe that is attached to the INFO-CON connector. The coefficients can be found on the Report of Calibration for the probe.

Note: All coefficients are automatically rounded off to the maximum number of digits that the 1521 or 1522 thermometer readout will allow.

A description of each of the different sets of coefficients is given below.

3.2.3.1 ITS-90

When the conversion type is set to ITS-90, the following coefficients must be entered:

- **RTPW** - Enter the value for the **R**esistance at the **T**riple **P**oint of **W**ater from the Report of Calibration.
- **High Range Coefficients A, B, C, and D** - Enter the High Range coefficients (range 6 - 11) from the Report of Calibration into the appropriate boxes. High range coefficients are denoted by the coefficient letter followed by a number indicating the temperature range over which the probe was calibrated (i.e. A9, B8 or C7).
- **Low Range Coefficients A and B** - Enter the Low Range coefficients (range 4 - 5) from the Report of Calibration into the appropriate boxes. Low range coefficients are denoted by the coefficient letter followed by a number indicating the temperature range over which the probe was calibrated (i.e. A4 or B5).

3.2.3.2 Callendar-Van Dusen

When the conversion type is set to Callendar-Van Dusen, the following coefficients must be entered:

- **R0** - Enter the **R**esistance at **0**°C from the Report of Calibration.
- **ALPHA** - Enter the ALPHA coefficient from the Report of Calibration.
- **DELTA** - Enter the DELTA coefficient from the Report of Calibration.
- **BETA** - Enter the BETA coefficient from the Report of Calibration. If there is no BETA coefficient on the Report of Calibration, enter 0.0.

3.2.3.3 IEC-751

When the conversion type is set to IEC-751, the values for R0, ALPHA, DELTA and BETA are fixed and cannot be changed by the user. The following describes the default values for each of these coefficients:

- **R0** - 100.000
- **ALPHA** - 0.00385
- **DELTA** - 1.507
- **BETA** - 0.111

Note: The Open and Save As buttons are disabled when IEC-751 is selected as the Conversion Type.

3.2.3.4 Thermistor

When the conversion type is set to Thermistor, the following coefficients must be entered:

- **b0** - Enter the b0 coefficient from the Report of Calibration.
- **b1** - Enter the b1 coefficient from the Report of Calibration.
- **b2** - Enter the b2 coefficient from the Report of Calibration.
- **b3** - Enter the b3 coefficient from the Report of Calibration.

Note: If the Report of calibration does not list any one of these coefficients, set that coefficient to 0.0 (i.e. the Steinhart-Hart method requires the b2 coefficient to be set to 0.0). These are the T(R) coefficients for the probe and are sometimes also referred to as a, b, c, and d.

3.2.3.5 YSI-400

When the conversion type is set to YSI-400, the values for b0, b1, b2 and b3 are fixed and cannot be changed by the user. The following describes the default values for each of these coefficients.

- **b0** - –6.63329214e00
- **b1** - 4.57873226e03
- **b2** - –6.49255492e04
- **b3** - –7.27819196e06

Note: The Open and Save As buttons are disabled when YSI-400 is selected as the Conversion Type.

3.2.4 Open

The Open button allows a previously saved coefficients text file to be opened. Coefficients text files can be saved by selecting the Save As button. Before opening a coefficients text file, set the Conversion Type option to the type of coefficients that are stored in the file. See Coefficients Text Files in Section 3.2.6 for more information on the uses and format of these files.

Selecting the Open button displays the Open *Conversion Type* File dialog. Select the file that contains the probe coefficients that should be written to the INFO-CON connector.

Note: Opening a file with an extension other that that shown in the Files of Type box may cause unpredictable results. Then click the Open button to open the file.

3.2.5 Save As

The Save As button allows the current coefficients to be saved to a text file. Coefficients text files can be opened by selecting the Open button. See Coefficients Text Files in Section 3.2.6 for more information on the uses and format of these files.

Selecting the Save As button displays the Save *Conversion Type* File As dialog. Enter a descriptive, unique filename that identifies the probe information being saved in the file (i.e. possibly include the probe model and/or serial number in the filename). These filenames can be up to 256 characters in length. The file extension must reflect the type of coefficients stored in the file if the file is to be opened by this software.

3.2.6 Coefficients Text Files

Coefficients Text Files provide a way for probe coefficients to be saved to a disk file independent of other information about the probe. These files can also be opened, edited and printed using any text editor such as Notepad or WordPad (which are both shipped with Windows®).

When saving Coefficients Text Files, use the extension that appears in the Files of Type box. The default extension depends on the currently selected conversion type as described below. The format of each of the file types is explained in Sections 3.2.6.1, 3.2.6.2, and 3.2.6.3.

Conversion Type	File Extension
Callendar-Van Dusen	.CVD
ITS-90	.I90
Thermistor	.THR

Note: The Open and Save As buttons are disabled when either IEC-751 or YSI-400 is selected as the Conversion Type.

3.2.6.1 CVD Files

The following is an example of the format of the .CVD file.

```
100.1234
.00385
1.507
.111
```

Figure 12 .CVD File Format

- The first line of a .CVD file is the value of the **R0** coefficient.
- The second line of a .CVD file is the value of the **ALPHA** coefficient.
- The third line of a .CVD file is the value of the **DELTA** coefficient.
- The fourth line of a .CVD file is the value of the **BETA** coefficient. If your probe does not have a BETA coefficient, this value should be set to 0.0.

3.2.6.2 I90 Files

The following is an example of the format of the .I90 file.

```
100.0012
6
-4.212155E-04
5.201212E-05
1.234565E-06
-9.213214E-05
4
5.213131E-04
-2.132132E-05
```

Figure 13 *.I90 File Format*

- The first line of a .I90 file is the value of the **RTPW** (Resistance at the Triple Point of Water) coefficient.
- The second line of a .I90 file indicates which **High Range** is used. For this software, this value should always be set to 6 regardless of the actual range.
- The third line of a .I90 file is the value of the **High Range A** coefficient (i.e. A6, A7, A8, A9, A10 or A11).
- The fourth line of a .I90 file is the value of the **High Range B** coefficient (i.e. B6, B7, B8 or B9). If using range 10 or 11, set this value to 0.0.
- The fifth line of a .I90 file is the value of the **High Range C** coefficient (i.e. C6 or C7). If using range 8, 9, 10 or 11, set this value to 0.0.
- The sixth line of a .I90 file is the value of the **High Range D** coefficient. If not using range 6, set this value to 0.0.
- The seventh line of a .I90 file indicates which **Low Range** is used. For this software, this value should always be set to 4 regardless of the actual range.

  Note: Ranges 1, 2, and 3 are not supported by the 1521 LLK or 1522 LLL Handheld Thermometer readouts.
- The eighth line of a .I90 file is the value of the **Low Range A** coefficient (i.e. A4 or A5).
- The ninth line of a .I90 file is the value of the **Low Range** B coefficient (i.e. B4 or B5).

3.2.6.3 THR Files

The following is an example of the format of the .THR file.

```
0
-4.214547
4164.546
-31454.65
5.154646E+07
```

Figure 14 .THR File Format

- The first line of a .THR file must always be set to 0 to indicate a thermistor polynomial.
- The second line of a .THR file is the value of the T(R) coefficient **b0** (sometimes called "a").
- The third line of a .THR file is the value of the T(R) coefficient **b1** (sometimes called "b").
- The fourth line of a .THR file is the value of the T(R) coefficient **b2** (sometimes called "c").
- The fifth line of a .THR file is the value of the T(R) coefficient **b3** (sometimes called "d").

4 Connector Menu

The Connector menu (Figure 15) provides options for formatting, reading, and writing INFO-CON connector settings

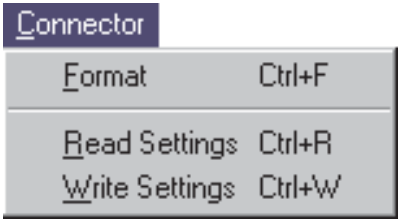

Figure 15 *Connector Menu*

4.1 Format

The Format option erases the settings in the INFO-CON connector so that the settings for a new probe can be entered. The software always prompts for confirmation before erasing the current settings.

Once a connector has been erased, it no longer contains any information about a probe.

This feature is useful when a probe must be disconnected from an INFO-CON connector so that a new probe can be connected to it. Erasing the current settings ensures that the INFO-CON connector will not contain any incorrect information about the connected probe.

Selecting Format from the Connector menu performs the same function as selecting New from the File menu.

4.2 Read Settings

The Read Settings menu option forces the software to read in the current settings from the INFO-CON connector. This feature is useful for discarding any changes that have been made to the settings but have not yet been written out to the INFO-CON connector.

4.3 Write Settings

The Write Settings menu option writes any changes that have been made to the INFO-CON connector information since the last time the information was read.

By default, any time changes are made to the INFO-CON connector information, the software prompts the user to choose whether to write the changes to

the connector or not. If the changes are not written to the connector at this time, the Write Settings menu option and toolbar button are enabled. These changes must then be written to the connector manually by selecting the Write Settings menu option or by selecting the Write Settings toolbar button.

Note: If the INFO-CON connector is detached from the Model 2372 INFO-CON Download Adapter before changes have been written to the connector, a warning message is displayed. All changes that have been made will be lost unless the INFO-CON connector is reconnected and the changes are written to the connector.

5 Help Menu

The Help menu (Figure 16) provides options for displaying the Help file, technical support information, and general software information including the software version.

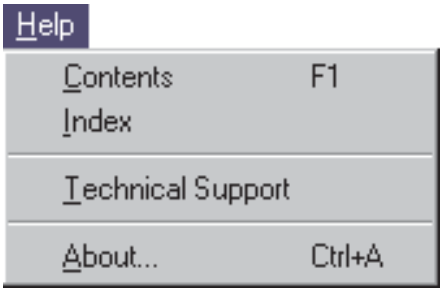

***Figure 16** Help Menu*

5.1 Contents

The Contents menu option displays the Contents topic of the Help file.

5.2 Index

The Index menu option displays the Index dialog for the Help file.

5.3 Technical Support

The Technical Support menu option displays Technical Support information.

Technical support can be obtained by calling or faxing Hart Scientific Technical Support:

- Phone: (801) 763-1600
- Toll Free: 1-800-GET-HART (1-800-438-4278)
- Fax: (801) 763-1010
- E-mail: support@hartscientific.com
- Internet: www.hartscientific.com (Check our website on the Internet regularly for answers to Frequently Asked Questions, updates, and Service Releases.)

Before calling for Technical Support, check the topics listed below to see if the problem you are having is described there.

- Requirements (see Section 1.3)
- Software Installation (see Section 1.4)
- Running the Software (see Section 1.6)
- Required .DLL and .OCX Files (see Section 1.7)

When calling or sending a fax, please send or have the following information ready:

- Name of the software
- Software version (as found on the Help|About dialog)
- Detailed description of the problem
- What you were doing when the problem arose
- The exact wording of any error message you received
- Any other information that may help to solve the problem

5.4 About

The About dialog displays specific information about the software. This information includes:

- Software Icon
- Software Model Number
- Software Name
- Software Version
- Software Information.

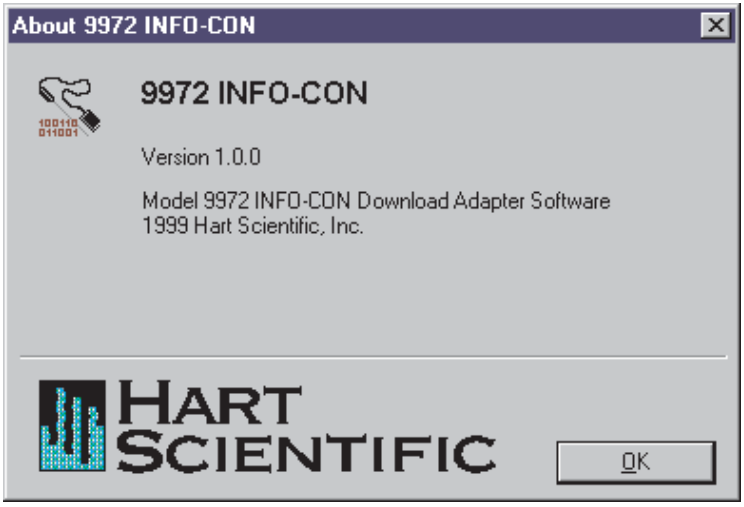

Figure 17 *About Dialog*

6 Glossary

ALPHA
The value of the ALPHA coefficient for the Callendar-Van Dusen or IEC-751 conversion type.

BETA
The value of the BETA coefficient for the Callendar-Van Dusen or IEC-751 conversion type.

b0
The value of the b0 coefficient for the Thermistor conversion type.

b1
The value of the b1 coefficient for the Thermistor conversion type.

b2
The value of the b2 coefficient for the Thermistor conversion type.

b3
The value of the b3 coefficient for the Thermistor conversion type.

Calibration Date
The date that the probe attached to the INFO-CON connector was last calibrated.

Coefficients
The values that represent the characterization of a probe. Every probe has its own unique set of coefficients.

COM Port
An RS-232 connector on a computer to which the Model 2372 INFO-CON Download Adapter muse be connected.

Conversion Type
Determines what type of coefficients can be entered for a probe.

DELTA
The value of the DELTA coefficient for the Callendar-Van Dusen or IEC-751 conversion type.

Expiration Date
The date that the calibration of the probe attached to the INFO-CON connector expires.

High Range
This refers to the High Range for the ITS-90 conversion type. The ITS-90 conversion type consists of high ranges 6, 7, 8, 9, 10, and 11.

High Range A Coefficient
The value of the High Range A coefficient (i.e. A6, A7, ... or A11) for the ITS-90 conversion type.

High Range B Coefficient
The value of the High Range B coefficient (i.e. B5, B6, B7, ... or B9) for the ITS-90 conversion type.

High Range C Coefficient
The value of the High Range C coefficient (i.e. C6 or C7) for the ITS-90 conversion type.

High Range D Coefficient
The value of the High Range D coefficient for the ITS-90 conversion type.

ICF Files
Binary files which contain the information exactly as it is stored in an INFO-CON connector. These files are very compact (typically only 100 bytes in size). Because these files are binary (as opposed to text), they cannot be read by a text editor.

Incompatible Files
A list of files that are required by the software that either could not be found on the system or have been changed.

Incompatible File Details
Details of the conflicts found with the file selected from the Incompatible Files list.

Low Range
This refers to the Low Range for the ITS-90 conversion type. The ITS-90 conversion type consists of high ranges 1, 2, 3, 4, and 5. Only ranges 4 and 5 are supported by the software.

Low Range A Coefficient
The value of the Low Range A coefficient (i.e. A4 or A5) for the ITS-90 conversion type.

Low Range B Coefficient
The value of the Low Range B coefficient (i.e. B4 or B5) for the ITS-90 conversion type.

Menu Bar
Provides access to all of the features of the software.

R0
The value of the R0 coefficient for the Callendar-Van Dusen or IEC-751 conversion type.

RTPW
The value of the Resistance at the Triple Point of Water for the ITS-90 conversion type.

Select Wires
Specifies how the probe is attached to the INFO-CON connector.

Status Bar
Displays information concerning the operation that the software is currently performing.

Toolbar
Provides quick access to the most common functions of the software.