FLUKE ®

Hart Scientific ®

9936 LogWare III

User's Guide

Table of Contents

Figures

1 Introduction

1.1 Symbols used

Table 1 lists the symbols that are used throughout this User Guide and their meanings.

Table 1 *Symbols*

Symbol	Description
A	This symbol indicates you must be logged into the Log*Ware* database as an administrator to perform the task.
1	This symbol indicates you must be logged into the Log*Ware* database with an access level of 1 or higher to perform the task.
2	This symbol indicates you must be logged into the Log*Ware* database with an access level of 2 or higher to perform the task.
3	This symbol indicates you must be logged into the Log*Ware* database with an access level of 3 to perform the task.
i	This symbol indicates important information.
⚠	This symbol indicates cautions or warnings.

1.2 Conventions

The following conventions are used throughout this User Guide.

Temperature scale	Italics denote menu names, menu options, and field names on dialogs and windows
Real-Time Log Session Settings	Dialog and window titles are capitalized
File | Print | Report	The pipe symbol '|' denotes submenu options
Play .WAV file	Bold type denotes selectable options
<unknown format>	Angle brackets '<>' denote special markers

1.3 What is Log*Ware*

Log*Ware* is a Windows® application that retrieves, stores, and analyzes data from Hart Scientific's 1620 "DewK" Thermo-Hygrometer.

Log*Ware* can import data batches from PC cards or download data directly from the DewK's memory. In addition, Log*Ware* can log data in real time via an RS-232 cable. Real-time data may be logged from one or both of a DewK's sensors, providing up to two temperature and two humidity inputs.

All data is stored in a single database and is easily retrievable based on date and time ranges and sensor names (which can be modified to indicate locations). Configurable user accounts and access levels can ensure appropriate security and integrity of all stored data.

Real-time data may be viewed in customizable graphic and statistical formats. Graphs can be displayed for both temperature and humidity for one or both sensor inputs in user-selectable time-increments. A variety of critical statistical functions can also be shown for each input, including min, max, average, and standard deviation. Alarm settings accompany imported, downloaded or real-time data and can be highlighted in the graphs and displayed statistics. Alarm events can also be triggered from the software while logging data in real-time.

Log*Ware* allows onscreen viewing of logged data. It also prints reports and exports data easily to multiple file formats that can be viewed in Excel or other common spreadsheet and database programs.

1.4 License agreement

For information and details regarding the software End User License Agreement (EULA), refer to the online help file's License Agreement topic.

1.5 Features

Log*Ware*'s data logging features include:

- Quick and easy configuration
- Ability to save and open configuration files
- Selectable sample interval from 1 second to 24 hours
- Selectable delayed start date/time for off-hours real-time logging
- Selectable end log options (to stop session after specified time or number of readings)
- Logs all readings to database
- Graphs readings and calculates statistics as they are being logged
- Selectable high and low alarm settings with user defined events (Can be configured to play .WAV file or launch an application, such as pager software, when an alarm trips)
- User-customizable graph settings
- Graph temperature and humidity on same graph or on separate graphs

Log*Ware*'s data analysis features include:

- Select data to display based on location or sensor and date/time range
- Spreadsheet-style grid to view all logged readings

- Graph zooming capability
- Statistical calculations
- Printing graphs and reports
- Export logged data to various file types
- Annotations can be appended to any reading
- Checksum calculations identify data that has been potentially tampered with
- Can have multiple windows open simultaneously

Log*Ware*'s security features include:

- Built-in administrator account for performing administrative functions
- User accounts for individual users or teams
- Selectable access level for each user account to restrict access to software features
- User name and password required for login to database
- Activate/Deactivate individual user accounts to allow/prevent login
- Activate/Deactivate individual loggers, sensors, and locations to allow/prevent use

Log*Ware* also provides additional utilities for:

- Downloading data from the logger's memory via RS-232
- Importing data from files written by the logger to a PC card
- Viewing data stored in the database
- Exporting data to multiple file types
- Printing reports and graphs
- Appending annotations to data points

Version 1.2

- Support for automatic logins
- Option to synchronize logger's clock with computer's clock when starting a real-time log session
- Option to use logger's date/time stamp when logging data in real-time
- Option to overwrite matching data in database when downloading or importing logged data
- Progress indicator when committing downloaded or imported data to the database

1.6   Requirements

Log*Ware* is designed to work with Hart Scientific's 1620 "DewK" Thermo-Hygrometer (logger).

1.6.1   Communications requirements

To perform real-time logging or to download data from the logger's memory, the logger must be connected to an RS-232 serial port (COM port) on a computer using a "null modem" cable. For more information on this type of cable, refer to the logger's User's Guide. When using serial (RS-232) communications, Log*Ware* is designed to auto-detect the baud rate that the logger is operating at. For best results, set the logger to use a fast baud rate (9600 baud or higher).

INFO: If there is no COM port available on the computer but the computer has a USB port, you may be able to use a USB to RS-232 adapter such as the IOGEAR Model G-UC232A USB PDA/Serial Adapter. Not all USB to RS-232 adapters may work. The adapter mentioned above has been tested and determined to work properly.

Log*Ware* does not currently support communicating with the logger using the IR port.

1.6.2   Computer requirements

The following minimum computer configuration is required to install and use Log*Ware*:

- IBM Compatible Pentium PC or better with minimum 32MB RAM
- VGA monitor or better
- CD-ROM drive for installation
- 1 - RS-232 serial (COM) port
- Minimum of about 35MB of disk space for installation - Additional disk space required to store data

In addition, Log*Ware* requires one of the following operating systems:

- Windows® 98 Second Edition
- Windows® ME
- Windows® NT (Service Pack 6 or later recommended). Windows® NT requires Internet Explorer v5 or later be installed prior to installing Log*Ware*.
- Windows® 2000
- Windows® XP

Note: In order to successfully use LogWare, Windows login accounts MUST be granted full access to the folder to which LogWare is installed and all subfolders!

1.7　　Installation

Note: Before installing LogWare, be sure to read the License Agreement and Warranty topics.

A backup should always be made of your hard disk drive and registry before installing any software and all running applications should be closed. If Log*Ware* is currently installed on the computer, follow the Repairing or Removing Log*Ware* instructions below.

Note: To successfully install LogWare, you must be logged into Windows® as an Administrator.

Installing Log*Ware*

1　　Insert the Log*Ware* CD-ROM into your CD-ROM drive. The Setup program should run automatically.

2　　Follow the on-screen instructions to install Log*Ware*.

3　　Read the installation notes file that is displayed for important information regarding known installation issues.

4　　When prompted, enter the product serial number. The serial number is provided on a sticker typically located on the CD pouch on the inside back cover of the Log*Ware* User's Guide. The serial number should follow the format: XXXXXX-XXXXXX-XXXXXX

5　　After all files have been installed, a program group is created with icons for the software. The installation process is complete.

6　　Read the ReadMe file that is displayed after installation is complete for important information that was not available when the User Guide was printed and other important information.

7　　When the installation is finished, the computer may need to be restarted.

Note: When restarting the computer, login to Windows® as an Administrator to allow the installation to complete. You may login to Windows® normally on subsequent logins.

Repairing or removing Log*Ware*

⚠️ *Note: When repairing or removing LogWare on a computer that is running Windows® NT/2000/XP, you must login to Windows® as an Administrator.*

If Log*Ware* is currently installed on the computer, it can be repaired or removed using the Add/Remove Programs utility in the Control Panel. To repair or remove Log*Ware*, 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 Log*Ware* III entry.

4   Click the *Add/Remove* (Windows® 98/NT) or *Change/Remove* (Windows® 2000/XP) button.

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

6   When finished repairing or removing the software, close the Add/Remove Programs dialog by clicking the *OK* (Windows® 98/NT) or *Close* (Windows® 2000/XP) button.

ℹ️ *Info: Removing this software does NOT delete the database files, any user-created files including export, import, or configuration files. These files must be removed manually using Windows® Explorer. You may receive one or more prompts to choose whether or not to remove 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 all of these files. If you are sure the files are not used by any other applications, they may be removed.*

1.8   Running Log*Ware*

The following sections describe how to get Log*Ware* up and running quickly.

1.8.1   Windows Login Accounts

Log*Ware* requires read/write access to the folder to which it is installed as well as all subfolders. If Log*Ware* does not have read/write access to these folders, a message will be displayed on startup and Log*Ware* will terminate.

The best way to configure your computer to allow login accounts read/write access to these folders is by creating a security group, assigning users to the group, and giving the group full access to the Log*Ware* III folder.

⚠ *Note: In order to create a security group for LogWare III, Windows administrative rights are required. You may need to contact your system administrator for assistance.*

The following procedure may be followed to create a security group for Log*Ware* III users in Windows XP-

1   Login to Windows on the computer where Log*Ware* is installed using an account with Administrative rights.

2   Open the Control Panel by clicking the *Start* button and selecting *Control Panel* (for Windows XP style Start menu) or *Settings | Control Panel* (for Windows 2000 style Start menu).

3   In the Control Panel, select the *User Accounts* icon. The User Accounts dialog should be displayed.

4   Select the *Advanced* tab, and click the Advanced button. The Local Users and Groups window should be displayed.

5   In the left pane, select the *Groups* item in the *Local Users and Groups (Local)* tree.

6   Select the *New Group...* option in the *Action* menu to display the New Group dialog.

7   In the *Group name* field, enter the name for this group. Use a descriptive name such as **LogWare III Users.**
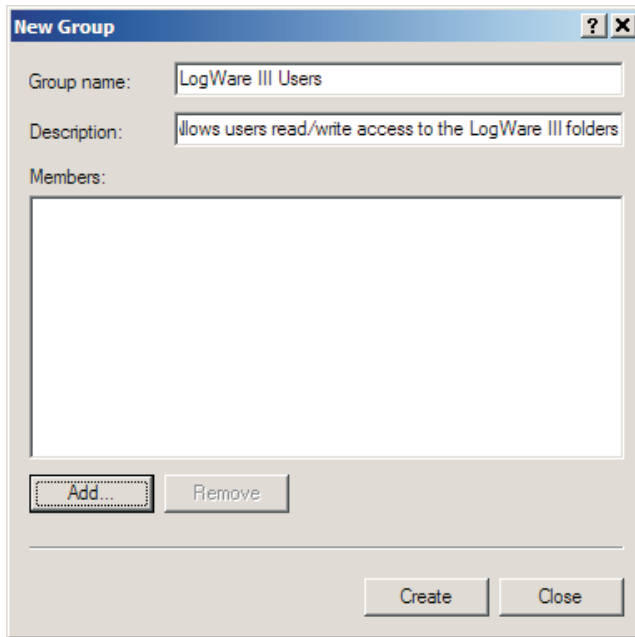
Figure 1   *New Group dialog*

8   In the *Description* field, enter something like: **Allows users read/write access to the LogWare III folders**

9   Click the *Add...* button to display the Select Users, Computers, or Groups dialog.

10   Add users to the group by entering the user names in the box provided and click *OK*.

⚠️ *Note: You may need to specify the domain or local computer name with the user name (i.e. <domain>\<username> or <localcomputername>\<username>)*
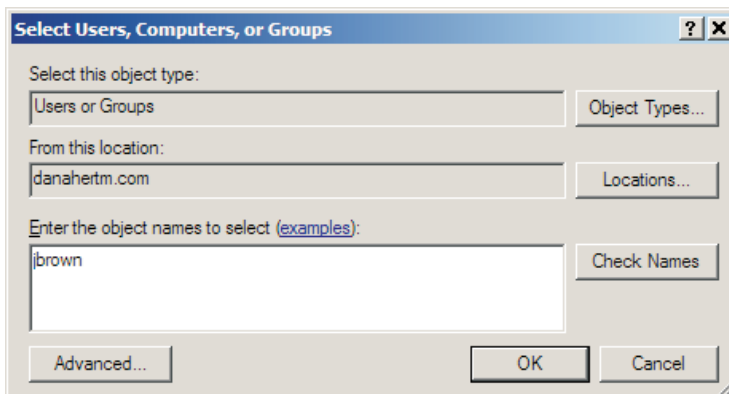
Figure 2 *Select Users, Computers, or Groups dialog*

11 After users have been added to the group, click the *Create* button on the New Group dialog to create the group.

12 Click the *Close* button to close the New Group dialog.

13 Make sure the new group appears in the right pane of the Local Users and Groups window. Close the Local Users and Groups window.

Now that the group has been created and members added to it, this group must be granted read/write access to the Log*Ware* folders.

The following procedure may be followed to grant the new group read/write access to the LogWare III folders in Windows XP-

1 Open Windows Explorer.

2 Locate the folder to which Log*Ware* III was installed (typically *C:\Program Files\Fluke-Hart Scientific\LogWare III)*

3 Right-click on the folder and select the *Properties* option from the popup menu to display the <FolderName> Properties dialog.

4 Select the *Security* tab and click the *Add...* button to display the Select Users, Computers, or Groups dialog.

5 Enter the name of the group created above (LogWare III Users) and click *OK*.

> ⚠ **Note:** *You may need to specify the domain or local computer name with the group name (i.e. <domain>\<groupname> or <localcomputername>\<groupname>)*
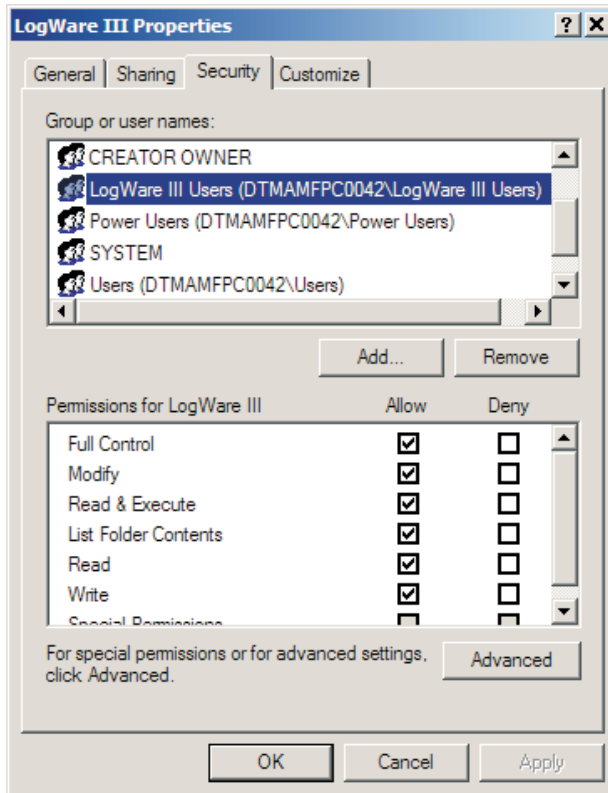
Figure 3 *Folder Properties dialog - Security tab*

6　Make sure the group appears in the *Groups or user names* list.

7　In the *Permissions for <FolderName>* list, select the check box for *Full Control* in the *Allow* column.

8　Click the *OK* button to close the dialog.

You may now logout of Windows and login using an account that was added to the security group.

1.8.2　Getting started

The following information is intended to provide a brief overview on how to get Log*Ware* up and running quickly.

⚠️ *Note: In order to successfully use LogWare, Windows login accounts MUST be granted full access to the folder to which LogWare is installed and all subfolders!*

Running Log*Ware*

1   Click or double-click the *LogWare III* icon to run Log*Ware*. An icon was placed on the desktop during installation, or locate the icon in the *Programs* option in the *Start* menu.

2   The software will start and display the Database Login dialog. Login to Log*Ware* using the built-in administrator account to create user accounts. Refer to Section 2.1, Administration, for more information on the built-in administrator account.

3   Once logged in, select the *Manage User Accounts* option from the *Tools* menu to create one or more user accounts. Assign each user account an appropriate access level. Passwords are created the first time an account is used to login to the database. Refer to Section 2.2, User Accounts, for more information on user accounts, passwords, and access levels.

ℹ️ *Info: For maximum security, check the Change password on next login option on the LogWare administrator account to change the password for the built-in administrator account on next login.*

4   Click *OK* to close the Manage User Accounts dialog and exit Log*Ware*.

5   Run Log*Ware* again and login using a newly created user account. Leave the *Password* field blank when logging in using an account for the first time. The Change Password dialog is displayed. Enter a password for this user account and click *OK* to continue. On subsequent logins, both the user name and password must be entered.

⚠️ *Note: LogWare now supports automatic logins. However, there are some limitations to using this feature. Be sure you fully understand the feature and its proper use before implementing it. For information on setting up LogWare to automatically login, see Section 2.2.2, Automatic Logins.*

⚠️ *Note: Be sure not to forget your passwords! Write down your passwords and keep them in a secure place.*

6   When Log*Ware* runs, the Real-Time Log Session Settings dialog is displayed. Use this dialog to configure a real-time log session. To prevent this window from being displayed automatically on startup, refer to Section 3, Log*Ware* III Options.

7   To start a real-time log session, connect the logger to a serial port on the computer (Log*Ware* defaults to COM1 - use Log*Ware* III Options dialog to change this setting). Click the *Query Logger* button. Log*Ware* reads in the current logger and sensor model numbers, serial numbers, alarm settings, etc. and fills in the information on the *Logger* tab. You may change this information as required.

```
┌─────────────────────────────────┐
│  New Log Session...             │
├─────────────────────────────────┤
│  Import...                      │
│  Export...                      │
├─────────────────────────────────┤
│  Print                       ▶  │
├─────────────────────────────────┤
│  Login as New User...           │
│  Exit                           │
└─────────────────────────────────┘
```
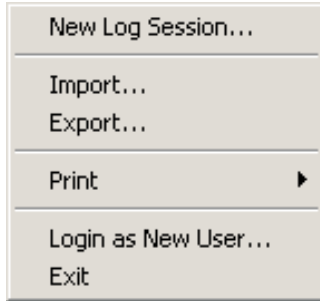
8   Click the *Session* tab. Select the logging interval and start and end criteria.

9   Click the *Start* button to start logging data in real-time.

Log session settings can be saved to a configuration file by clicking the *Save As* button on the Real-Time Log Session Settings dialog prior to starting the log session. Refer to Section 3, Log*Ware* III Options, for options on loading a configuration file and starting a log session automatically when Log*Ware* starts.

1.8.3   Log*Ware* main display

The main display consists of the menus, toolbar, a workspace area and a status bar.
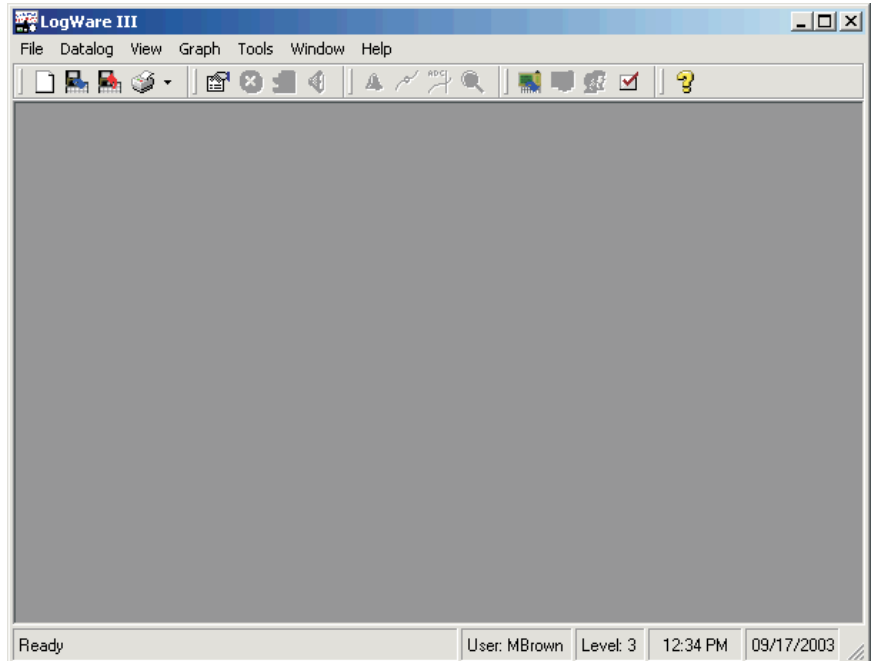
Figure 4   *Main display*

The menus allow access to the various features of the software. A general description each menu is given below:

- **File** - Create a new real-time log session, import and export data, print reports and graphs, login as new user and exit Log*Ware*
- **Datalog** - Create a new real-time log session, stop and close real-time log sessions, mute alarms
- **View** - Show/hide toolbar and status bar, view logged data in the database
- **Graph** - Show alarms, data points and annotations on the graphs, zooming and printing graphs
- **Tools** - Download data from a logger, manage equipment and user accounts, database tools, change Log*Ware* options
- **Window** - Rearrange and switch between open windows
- **Help** - Display help topics and About dialog

The toolbar allows quick access to the most common menu functions. The toolbar is divided into sections that correspond to related functions. Toolbar sections may be rearranged as desired by clicking on the vertical bar on the left side of the section and dragging it to the desired location. The following toolbars are available:

File toolbar

- **New** - Create a new real-time log session
- **Import** - Import data from record files into the database
- **Export** - Export data from the database
- **Print** - Print reports and graphs

Datalog toolbar

- **Setup** - Create a new real-time log session
- **Stop** - Abort a real-time log session
- **Close** - Close a real-time log session window
- **Mute all alarms** - Prevents alarm events from occurring

Graph toolbar

- **Show alarms** - Shows horizontal alarm lines on the graphs
- **Show data points** - Shows markers at data points on the graphs
- **Show annotations** - Shows annotations on the graphs
- **Undo zoom** - Restores the graphs to show all data

Tools toolbar

- **Download** - Download data into the database
- **Manage equipment** - Manage loggers, sensors, and locations
- **Manage user accounts** - Manage user accounts and access levels
- **Log*Ware* options** - Change Log*Ware*'s default settings

Help toolbar

- **Help** - Opens the on-line help file

The status bar indicates the function that the software is currently performing as well as the current system date and time.

 Info: The date and time displayed are based on the computer's clock settings and can be modified through the Windows® Control Panel.

1.8.4   Menus

The following sections briefly outline each of Log*Ware*'s menus and menu options.

1.8.4.1   File menu

The *File* menu contains the following options:

- **New log session** - Creates a new real-time log session; Refer to Section 4, Real-Time Data Logging
- **Import** - Imports data from files; Refer to Section 5, Importing Data
- **Export** - Exports logged data to files; Refer to Section 7.2, Exporting Logged Data
- **Print** - Provides options to print graphs and reports
    - ◆ **Graph** - Prints the graphs in the active window
    - ◆ **Report** - Prints reports of logged data; Refer to Section 7.3, Printing Reports
- **Login as New User** - Logs out of the database and displays the Database Login dialog to login as a new user
- **Exit** - Exits Log*Ware*

1.8.4.2   Datalog menu
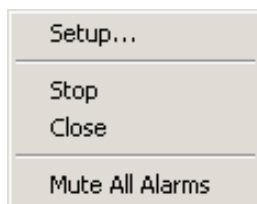
The *Datalog* menu contains the following options:

- **Setup** - Creates a new real-time log session; Refer to Section 4, Real-Time Data Logging
- **Stop** - Aborts a real-time log session; Refer to Section 4, Real-Time Data Logging
- **Close** - Closes a real-time log session window; Refer to Section 4, Real-Time Data Logging
- **Mute All Alarms** - Prevents real-time log session alarm events from occurring

1.8.4.3   View menu
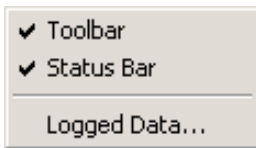
The *View* menu contains the following options:

- **Toolbar** - Shows/hides the toolbar buttons
- **Status Bar** - Shows/hides the status bar at the bottom of the main display
- **Logged Data** - Displays logged data; Refer to Section 7.1, Viewing Logged Data

1.8.4.4   Graph menu
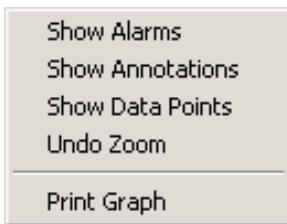
The *Graph* menu contains the following options:

- **Show Alarms** - Shows/hides horizontal alarm lines on the graphs
- **Show Annotations** - Shows/hides vertical annotation lines on the graphs
- **Show Data Points** - Shows/hides data point markers on the graphs
- **Undo Zoom** - Restores the graphs to their normal state
- **Print Graph** - Prints the graphs in the active window

1.8.4.5   Tools menu
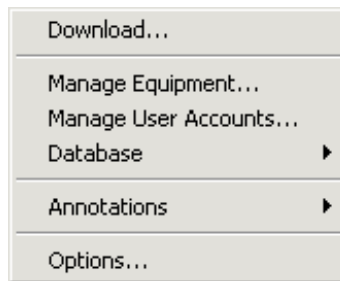
The *Tools* menu contains the following options:

- **Download** - Downloads data from the logger's memory; Refer to Section 6, Downloading Data

- **Manage Equipment** - Manages loggers, sensors, and locations; Refer to Section 2.3, Managing Equipment

- **Manage User Accounts** - Manage user accounts; Refer to Section 2.2, User Accounts

- **Database** - Provides options for maintaining the database.

   - **Compact Database** - Compacts the Log*Ware* database; Refer to Section 8, Database Maintenance

- **Annotations** - Provides optons for managing annotations.

   - **Add** - Adds an annotation to a data record; Refer to Section 7.1.3, Annotations

   - **Edit** - Edits an annotation of a data record; Refer to Section 7.1.3, Annotations

   - **Remove** - Removes an annotation from a data record; Refer to Section 7.1.3, Annotations

- **Options** - Allows access to Log*Ware*'s default options and settings; Refer to Section 3, Log*Ware* III Options

1.8.4.6 Window menu

Cascade
Tile Horizontal
Tile Vertical
Arrange Icons

✔ 1 Logged Data - LABORATORY
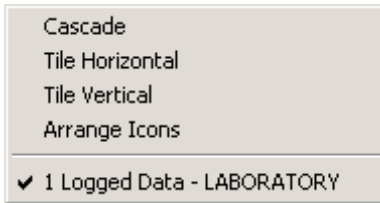
The *Window* menu contains the following options:

- **Cascade** - Cascades all open windows
- **Tile Horizontal** - Tiles all open windows horizontally
- **Tile Vertical** - Tiles all open windows vertically
- **Arrange Icons** - Arranges the icons for all minimized windows at the bottom of the main display
- **Window List** - Displays a list of all open windows

1.8.4.7 Help menu

Contents...
Technical Support
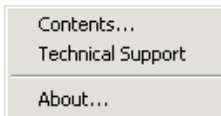
About...

The *Help* menu contains the following options:

- **Contents** - Opens the on-line help file to the Contents topic
- **Technical Support** - Opens the on-line help file to the Technical Support topic
- **About** - Displays the About dialog

1.8.5 Options

Log*Ware* has many features and settings that can be customized by the user to allow Log*Ware* to operate in certain ways. For more information on these options, please refer to Section 3, Log*Ware* III Options.

2 Security features

Log*Ware* provides security features that allow an administrator to control which users have access to certain software functions and features. Access to these features is controlled by requiring login using a user name and password. The following sections outline how to create and manage administrator and user accounts and passwords to control access to Log*Ware*'s features.

Note: LogWare may be configured to automatically login when LogWare is launched. See Section 2.2.2, Automatic Logins.

2.1 Administration

When Log*Ware* is installed on a computer for the first time, an administrator account is created. You must use this account to login to Log*Ware* to create and manage user accounts. You may also setup additional administrator accounts. The login user name and password for the default administrator account are:

User name: LogWare

Password: LogWare

Note: You should change the password for the default administrator account to prevent unauthorized user access. Passwords are case-sensitive! Refer to Section 2.2.1.6.2, Changing Account Passwords, for more details on changing account passwords.

Every time Log*Ware* runs, the Database Login dialog is displayed. Enter the default administrator user name and password as indicated above and click *OK*.

Figure 5 *Database Login*

When logged in using an administrator account, access to most of Log*Ware*'s features is restricted. Administrators cannot open real-time log sessions, import or download data, view, export, or print logged data, or use any of Log*Ware*'s other data-related functions. Administrators are only allowed to change Log*Ware*'s default settings, manage loggers, sensors, locations, and user accounts.

Select the *Manage User Accounts* option in the *Tools* menu to create and manage user accounts.

2.2   User accounts

Log*Ware* has some security features that allow an administrator to secure and control access to and use of certain functions. One of these features is user accounts.

User accounts allow Log*Ware* to identify users who perform certain tasks. They also allow the administrator to determine permissions (which users have access to certain features). Each user account consists of a user name, password, first name, last name and access level.

By default, Log*Ware* has one built-in administrator account. After Log*Ware* is installed, the administrator must use this account to login and create accounts for each person who is to use the software. Also, the administrator should

change the password for the built-in administrator account to prevent unautho-rized access to the software.

⚠️ *Note: Do not forget your passwords! They cannot be recovered, even by the administrator! If necessary, write them down and keep them in a se-cure location.*

2.2.1 Creating and managing user accounts

🅐 To create and manage user accounts, you must login using an administrator account. Select the *Manage User Accounts* option in the *Tools* menu to display the Manage User Accounts dialog.
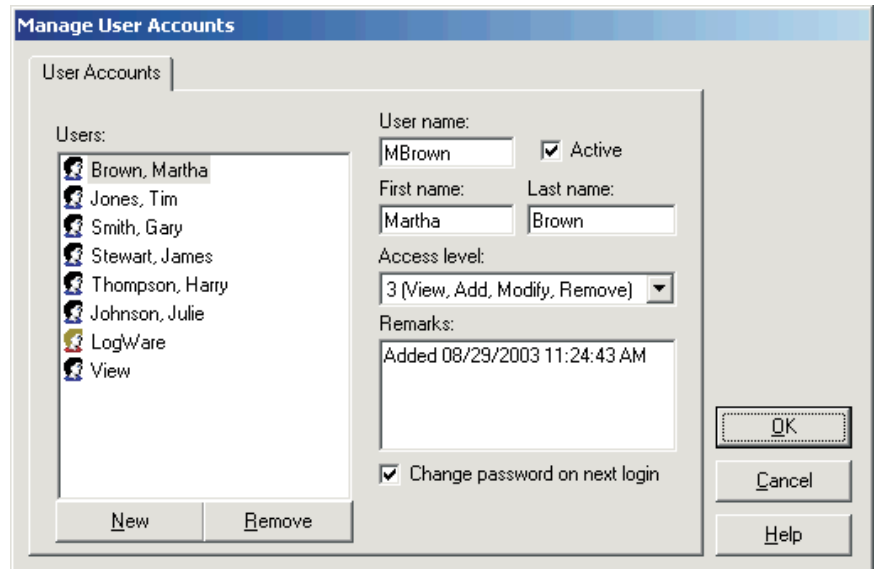
Figure 6 *Manage User Accounts*

The *Users* list displays the current user and administrator accounts. To view an account's settings, click on the account in the list. The account settings are dis-played in the fields to the right of the list.

2.2.1.1 Create new user account

To create a new user or administrator account:

1 Click the *New* button. A new account is created with a generic user name.

2　　Change the user name to the desired name.

3　　The *Active* option is checked by default, indicating that this account may be used to login. If you wish to make this account inactive, uncheck this option.

4　　**Optional** - Fill in the *First name* and *Last name* fields. These fields may be left blank if desired.

5　　Assign an access level to this account using the *Access level* drop-down list. To make this account an administrator account, assign an access level of 4 (Administer only). Otherwise, select the access level that you wish for this user to have based on the functions they are to perform. Refer to Section 2.2.1.4, Access Levels, for more details on access levels.

6　　You may add any remarks for this account to the *Remarks* field. By default, information about the creation of the account is placed here.

7　　The *Change password on next login* option indicates whether this user must change the password the next time they login using this account. For new accounts, leave this option checked to require a password for this account.

Note: For new accounts, leaving this option unchecked will allow the user to login without a password! This feature may be useful for creating a generic user account with view only access (access level 0) and is required if you are configuring LogWare for automatic login. However, for reasons of security, it is not recommended to create user accounts with an access level higher than 0 that do not require a password!

2.2.1.2　　Modify existing account

To modify the current settings of an existing account:

1　　Select the account in the *Users* list.

2　　To activate or deactivate this account (allow/prevent this account to be used to login), check or uncheck the *Active* option.

3　　To change the user's first or last name, enter the new values in the *First name* and *Last name* fields.

4　　To change this user's access level, select the new access level using the *Access level* drop-down list.

5　　To require this user to create a new password on next login, check the *Change password on next login* option.

> ⚠ *Note: The user name of existing accounts cannot be changed! If you wish to change a user name, deactivate or remove the account and create a new account with the new user name. The built-in administrator account, LogWare, cannot be modified! The password for this account, however, can and should be changed.*

2.2.1.3   Remove existing account

To remove an existing account:

1   Select the account in the *Users* list.

2   Click the *Remove* button. A prompt is displayed to confirm removing the account. Click *Yes* to remove the account.

> ⚠ *Note: A user account should only be removed if it is never to be used again. If you wish to temporarily disable an account, simply uncheck the Active option. The built-in administrator account, LogWare, cannot be removed!*

2.2.1.4   Access levels

Log*Ware* allows each user account to be assigned an access level. The access level indicates which functions of Log*Ware* a user is allowed to use. Each access level is described below.

LogWare functions/features	Access level 0	1	2	3	A
View logged data	X	X	X	X	-
Print reports and graphs	X	X	X	X	-
Export logged data	X	X	X	X	-
Real-time logging	-	X	X	X	-
Import data from files	-	X	X	X	-
Download data from logger	-	X	X	X	-
Change LogWare's default settings	-	X	X	X	X
Add annotations to logged data	-	X	X	X	-
Modify annotations to logged data	-	-	X	X	-
Remove annotations from logged data	-	-	-	X	-
Create and manage user accounts	-	-	-	-	X
Manage loggers, sensors, and locations	-	-	-	-	X

2.2.1.5 User names and passwords

Log*Ware* imposes some simple rules about user names and passwords that must be observed.

User names:

- are not case-sensitive

- must be unique

- must be between 4 and 20 characters in length

- can consist of numbers, letters, and any of the following symbols: - + . @ ! # $ % & ^ _ | ~

Passwords:

- are case-sensitive

- must be between 4 and 20 characters in length

- can consist of numbers, letters, and any of the following symbols: - + . @ ! # $ % & ^ _ | ~

Info: Currently, LogWare does not impose any restrictions regarding complexity, minimum or maximum age, or re-use of passwords.

2.2.1.6 Setting and changing account passwords

Each user account can have a password. Passwords are set and changed when a user logs in. Optionally, one or more accounts can be configured to not require a password. This feature may be useful for allowing a person or group of people to login with an access level of 0 (view only).

Note: Do not forget your passwords! They cannot be recovered, even by the administrator! If necessary, write them down and keep them in a secure location.

2.2.1.6.1 Setting account passwords

To set the password for a new account:

1   Create the user account. Make sure the *Change password on next login* option is checked.

2   Click *OK* to close the Manage User Accounts dialog.

3   Close Log*Ware*.

4   Run Log*Ware*.

5   On the Database Login dialog, enter the user name for the account. Leave the *Password* field blank. Click *OK*.

6   The Change Password dialog is displayed. Enter the new password in the *New password* and *Confirm password* fields and click *OK*. The password is now set.
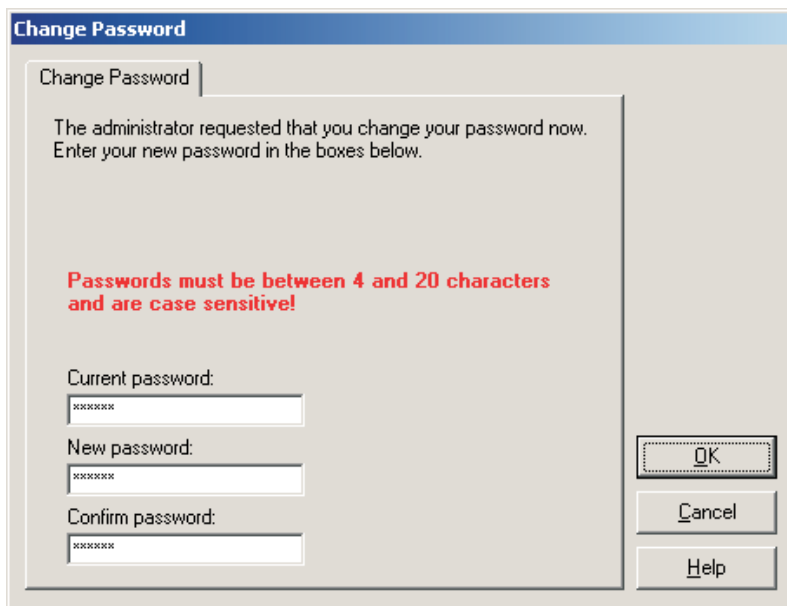
Figure 7 *Change Password*

2.2.1.6.2   **Changing account passwords**

A   **To change the password for an existing account:**

1   Run Log*Ware* and login using an administrator account.

2   Select the *Manage User Accounts* option from the *Tools* menu. The Manage User Accounts dialog is displayed.
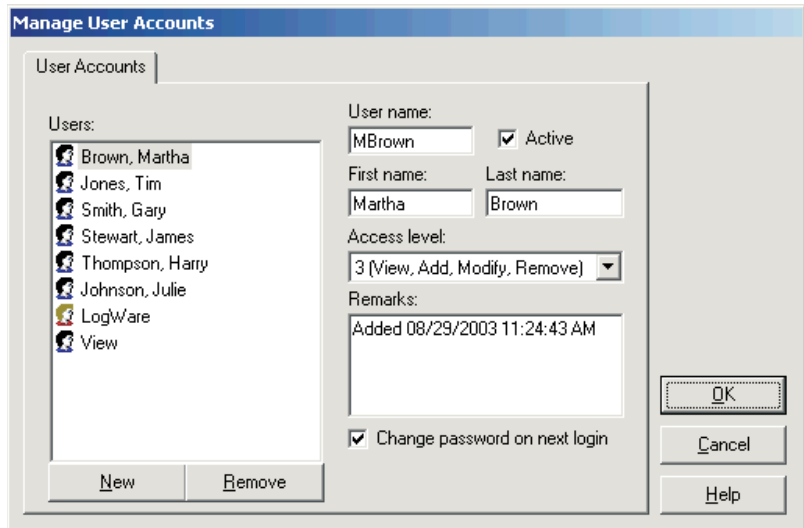
Figure 8 *Manage User Accounts*

3   In the *Users* list, select the account.

4   Check the *Change password on next login option.*

5   Repeat for other accounts as needed.

6   Click *OK* to close the Manage User Accounts dialog.

7   Select the *Login as New User* option from the *File* menu.

8 On the Database Login dialog, enter the user name and current password for the account and click *OK*.
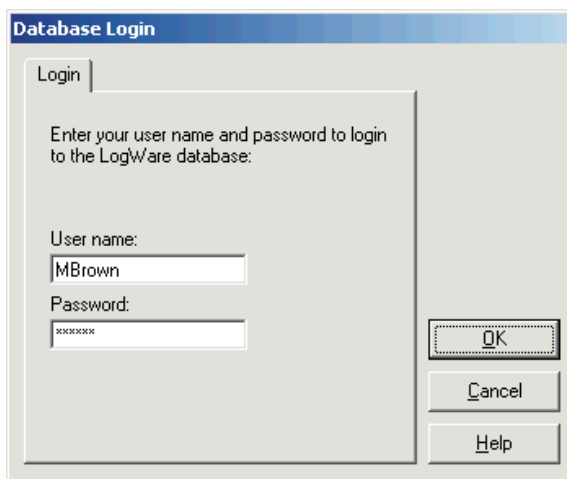
Figure 9 Database Login

9 The Change Password dialog is displayed. Enter the new password in the

New password and *Confirm password* fileds and click *OK*. The password is now changed.
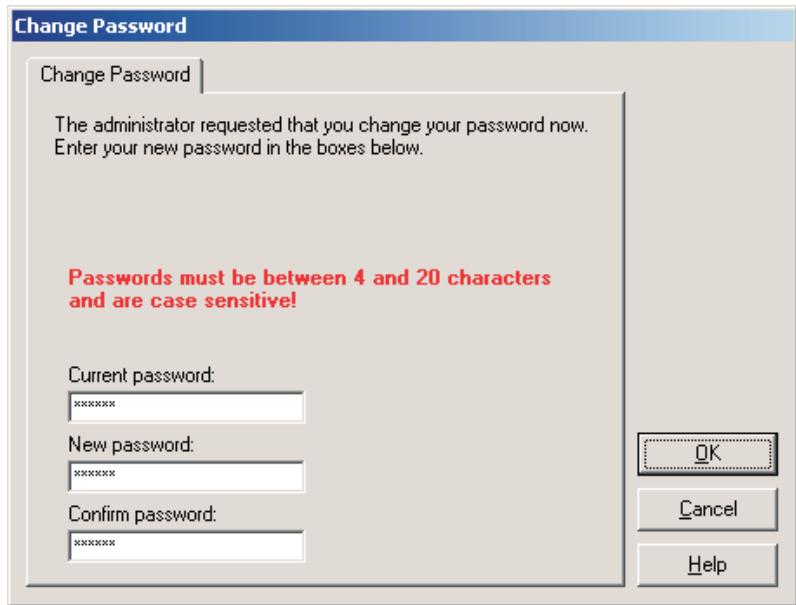
Figure 10 *Change Password*

2.2.1.6.3 Creating accounts without a password

A **To setup an account to not require a password:**

1   Create a new user account. Make sure the *Change password on next login* option is NOT checked.

2   Click *OK* to close the Manage User Accounts dialog.

3   Close Log*Ware*.

4   Run Log*Ware*.

5   On the Database Login dialog, enter the user name for the account. Leave the *Password* field blank. Click *OK*.

i   *Info: Once a password has been assigned to an account, it is not possible to remove the password from that account. The password may be changed, but it cannot be removed. You must create a new account without a password.*

⚠️ *Note: Although LogWare allows for any account to be created without requiring a password, it is not recommended to assign an access level higher than* ❶ *to any such account for security reasons. If you are configuring LogWare for automatic login, you must create an account without a password.*

⚠️ *Note: Although LogWare allows for any account to be created without requiring a password, it is not recommended to do so for security reasons.*

2.2.2   Automatic logins

⚠️ *Note: There are some limitations to using the automatic login feature. Be sure you fully understand the feature and its proper use before implementing it.*

LogWare may be configured to automatically login on startup. This feature can be very useful for:

- Automatically resuming a real-time log session after a power failure without user interaction

- Setting up a generic user account for people who need read-only access to the database

- Bypassing LogWare's security features for applications where security of the data is not important

⚠️ *Note: Configuring LogWare for automatic login requires a moderate level of knowledge regarding Windows® configuration files (INI files). If you are not familiar with INI files, contact your system administrator to assist you.*

To configure LogWare to automatically login on startup...

1   Create a user account that does not require a password as explained in Setting and Changing Account Passwords.

2   Close LogWare.

3   Using Windows® Explorer, locate the LOGWARE3.INI file. This file is located in the folder where LogWare was installed. Open this file with a text editor.

4   Locate the [General] section and add the following entries to this section exactly as indicated (case sensitive), replacing <username> with the account user name created in step 1):

AutoLogin=True

AutoLoginUser=<username>

5   Close and save the configuration file.

6   Run LogWare. LogWare should automatically login to the database (the database login prompt dialog should not be displayed) and the status bar at the bottom of the LogWare window should indicate User: <username> and all menus should be accessible (depending on access level granted to this user).

⚠️ *Note: LogWare does not restrict the access level that can be assigned to an account without a password. However, it is not recommended to assign an access level higher than* ➊ *to any such account for security reasons.*

2.3   Managing equipment

🅐   Whenever data gets logged to the database, whether in real-time, by importing, or by downloading, Log*Ware* records the logger model and serial number, sensor model and serial number, and the location. This information is always associated with the data.

Log*Ware* administrators can manage the loggers, sensors, and locations using the Manage Equipment feature. To access this feature, login as an administrator, then select the *Manage Equipment* option in the *Tools* menu. The Manage Equipment dialog is displayed.
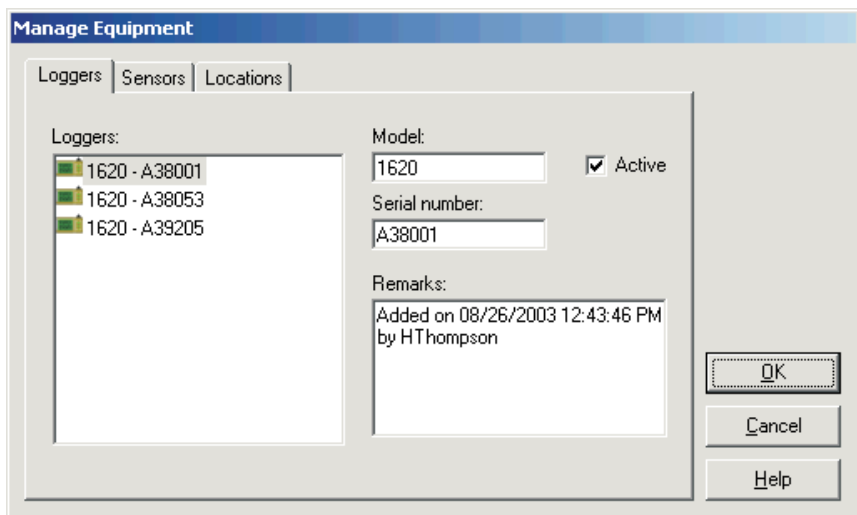
Figure 11 *Manage Equipment*

The Manage Equipment dialog has three tabs: *Loggers*, *Sensors*, and *Locations.*

2.3.1   Managing loggers

A   The *Loggers* tab includes a list of all loggers that have been used to log
data into the database.

Figure 12 *Manage Equipment - Loggers tab*

Loggers are automatically added to this list the first time they are used to log
data in real-time, or the first time data is imported or downloaded from a log-
ger. The model, serial number, active state, and remarks are shown for the log-
ger that is currently selected in the *Loggers* list. By default, when a logger is
added, it is marked as active. The *Model* and *Serial number* fields are not
editable. The *Remarks* field defaults to the date, time, and user who first used
the logger to log data to the database. The remarks information can be changed
as desired.

Administrators can prevent a logger from being used to log real-time data and
prevent data from a logger from being imported or downloaded into the data-
base by simply unchecking the *Active* option.

2.3.2   Managing sensors

A The *Sensors* tab includes a list of all sensors that have been used to log data into the database.

Figure 13 *Manage Equipment - Sensors tab*

Sensors are automatically added to this list the first time they are used to log data in real-time, or the first time data from a sensor is imported or downloaded. The model, serial number, active state, and remarks are shown for the sensor that is currently selected in the *Sensors* list. By default, when a sensor is added, it is marked as active. The *Model* and *Serial number* fields are not editable. The *Remarks* field defaults to the date, time, and user who first used the sensor to log data to the database. The remarks information can be changed as desired.

Administrators can prevent a sensor from being used to log real-time data and prevent data from a sensor from being imported or downloaded into the database by simply unchecking the *Active* option.

2.3.3   Managing locations

The *Locations* tab includes a list of all locations that have been used to log data into the database.
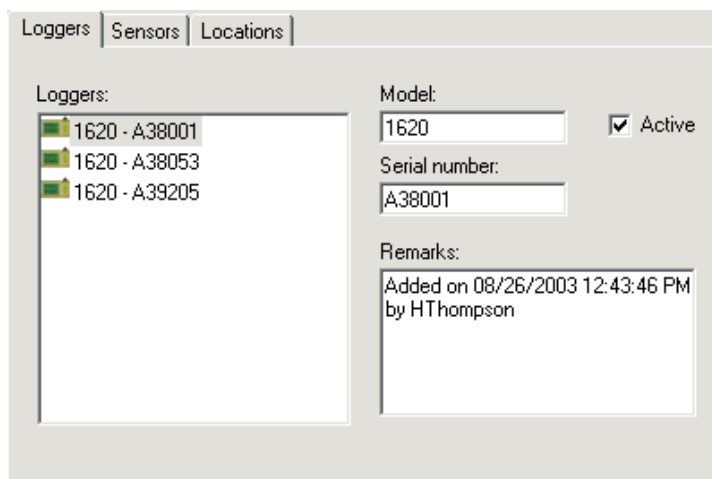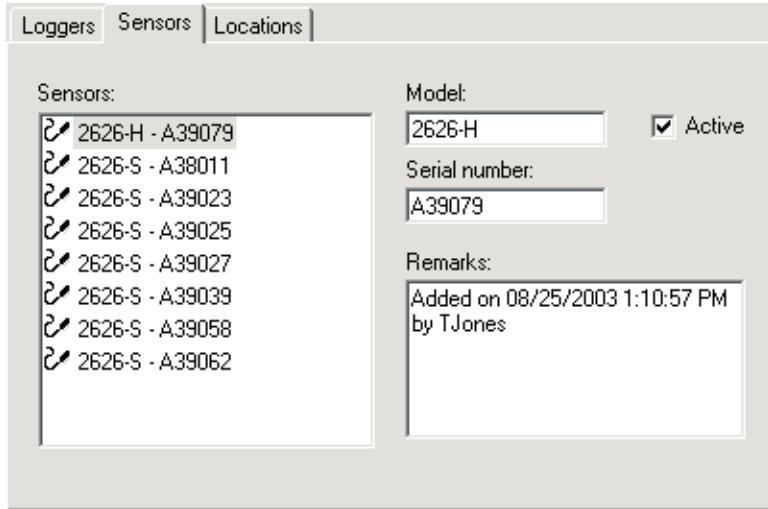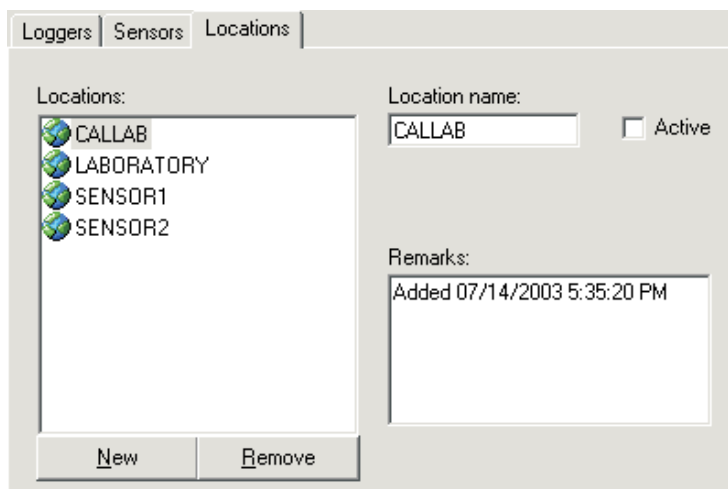

Figure 14 *Manage Equipment - Locations tab*

Locations are automatically added to this list the first time they are used to log data in real-time, or the first time data from a location is imported or downloaded. The location name, active state, and remarks are shown for the location that is currently selected in the *Locations* list. By default, when a location is added, it is marked as active. The *Location name* field is not editable. The *Remarks* field defaults to the date, time, and user who first used the location to log data to the database. The remarks information can be changed as desired.

Administrators can prevent a location from being used to log real-time data and prevent data from a location from being imported or downloaded into the database by simply unchecking the *Active* option.

New locations can be added at any time by an administrator or by any user with an access level of 1 or higher when configuring a real-time log session. Refer to Section 2.3.3.1, Adding a New Location, for more information on adding locations to the database.

Location names can be up to 16 characters long, and can consist of numbers, letters, and/or any of the following characters: - + . @ ! # $ % & ^ _ | ~

2.3.3.1   Adding a new location

To add a new location...

1   Click the *New* button. A new location is created with a generic location name.

2   Change the location name to the desired name.

3   The *Active* option is checked by default, indicating that this location may be used to log data to the database. If you wish to make this location inactive, uncheck this option.

4   You may add any remarks for this account to the *Remarks* field. By default, information about the creation of the location is placed here.

2.3.3.2   Removing an existing location

To remove an existing location...

1   Select the location to remove from the *Locations* list.

2   Click the *Remove* button. A prompt is displayed to confirm removing the location. Click *Yes* to remove the location.

3   LogWare III options

The Log*Ware* III Options dialog allows various default settings to be se-
lected.
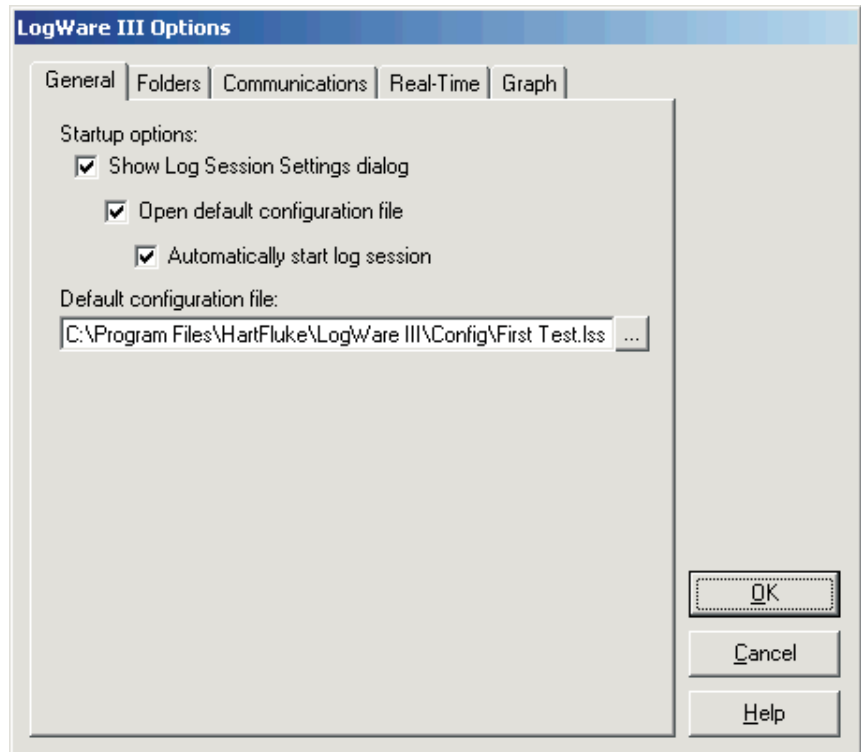
Figure 15 *LogWare III Options*

The settings are divided into five tabs: *General*, *Folders*, *Communications*,
Real-Time, and *Graph*.

3.1 General

The G*eneral* tab displays options pertaining to the behavior of Log*Ware* in general.
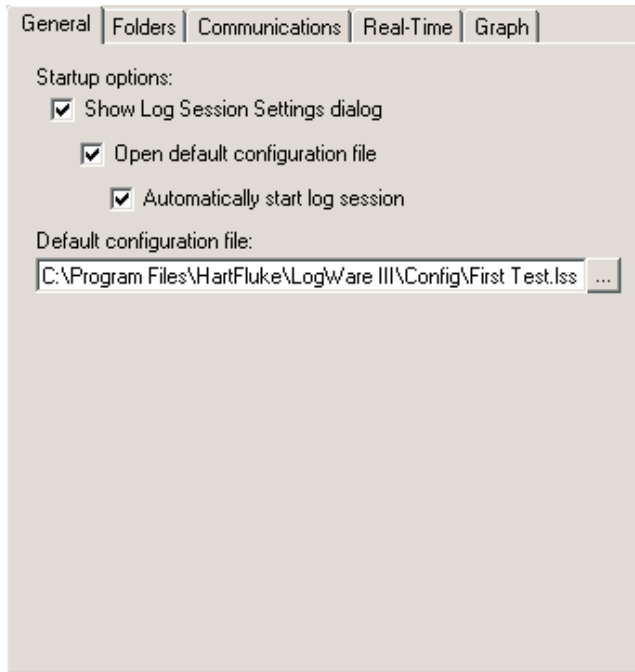
Figure 16   *LogWare III Options - General tab*

The *Show Log Session Settings dialog* option determines whether Log*Ware* should automatically display the Real-Time Log Session Settings dialog every time Log*Ware* starts up. If not checked, the other options on this tab are not applicable and are disabled.

The *Open default configuration file* option determines whether Log*Ware* should automatically open the specified real-time log session settings file every time Log*Ware* starts up. This option is useful to reduce the amount of time necessary to configure a real-time log session. When this option is checked, the configuration file to open must be specified in the *Default configuration file* field.

ℹ *Info: When the Open default configuration file option is selected, LogWare expects that the logger is running and connected to the computer according to the settings found on the Communications tab so that it can communicate with the logger.*

The A*utomatically start log session* option determines whether Log*Ware* should automatically start a real-time log session without any user interaction required.

The *Default configuration file* field indicates the configuration file that will be opened automatically every time Log*Ware* starts up. The configuration file will only be opened if the *Show Log Session Settings dialog* and *Open default configuration file* options are both checked. Click the ... (Browse) button to locate the configuration file to be used as the default configuration file.

3.2 Folders

1 The *Folders* tab displays options pertaining to the default folders to which Log*Ware* expects to find various types of files.

Figure 17 *LogWare III Options - Folders tab*

The *Default folder for configuration files* field determines the default folder to which configuration files are found. Log*Ware* allows many types of configuration files to be saved including real-time log session settings (.LSS file) and alarm settings (.ALM file). Click the ... (Browse) button to select an existing folder.

The *Default folder for exporting files* field determines the default folder to which Log*Ware* will export files. Click the ... (Browse) button to select an existing folder.

3.3   Communications

The *Communications* tab displays options pertaining to the methods of communication that Log*Ware* supports.
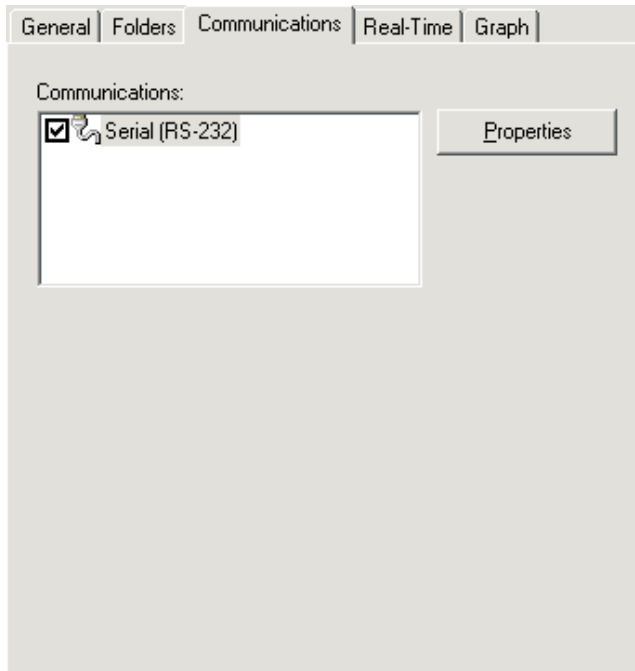
Figure 18   *LogWare III Options - Communications tab*

The *Communications* list indicates the methods of communication that Log*Ware* supports for communicating with loggers. This tab is not displayed if a real-time log session is running.

Only one method in this list may be checked in the *Communications* list. Currently, Log*Ware* only supports communicating with loggers using serial (RS-232) communications.

Click the *Properties* button to view and change settings related to the high-lighted method of communications.

3.3.1   Serial (RS-232) properties

The RS-232 Communication Settings dialog displays the settings for the Serial (RS-232) method of communication.
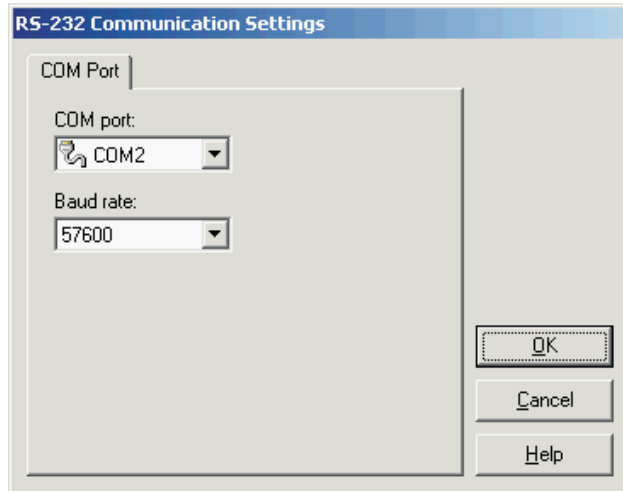
Figure 19 *RS-232 Communication Settings*
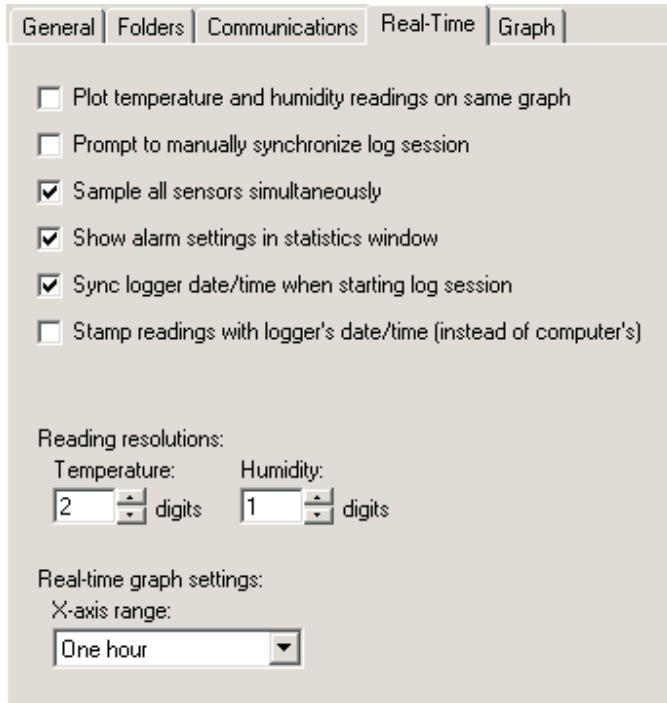
The *COM port* field indicates which COM port on the computer should be used for communicating with a logger. This list contains only COM ports which are currently active and available on the computer at the time this dialog was displayed. Use the drop-down list to select the COM port to use.

The *Baud rate* field indicates the default baud rate to use to communicate with a logger. Use the drop-down list to select the default baud rate to use.

Info: LogWare is designed to automatically determine the baud rate that a logger is operating at. Therefore, changing this setting will not affect LogWare.

3.4 Real-Time

The *Real-Time* tab displays options that are applicable only to performing real-time log sessions.

Figure 20 *LogWare III Options - Real-Time tab*

Note: Changing any of these settings only affects real-time log sessions started after closing the LogWare III Options dialog! Real-time log sessions that are already running are not affected.

The *Plot temperature and humidity readings on same graph* option determines whether separate graphs are created in the Real-Time Log Session window for temperature and humidity readings, or whether temperature and humidity readings are plotted on the same graph. When plotting temperature and humidity readings on the same graph, temperature readings use the left y-axis and humidity readings use the right y-axis of the graph.

The *Prompt to manually synchronize log session* option determines whether Log*Ware* displays a message that the user must respond to before starting a

real-time log session. This feature may be useful when you are trying to synchronize Log*Ware*'s real-time log session with some other external process.

⚠️ *Note: Do not use the Prompt to manually synchronize log session option in conjunction with the delayed start date/time option when setting up a real-time log session! Otherwise, your log session may not start as expected! LogWare checks for this conflict before starting a real-time log session.*

The *Sample all sensors simultaneously* option determines whether Log*Ware* should attempt to read all enabled sensors at the same time, or whether readings should be taken from each sensor sequentially.

The *Show alarm settings in statistics window* option determines whether the sensor alarm settings, if any, should be included in the real-time log session window's statistics list.

The *Sync logger date/time when starting log session* option determines whether Log*Ware* sends commands to the logger when starting a real-time log session to synchronize it's system date and time to the computer's date and time.

⚠️ *Note: When using the Sync logger date/time when starting log session option, the Enter Password prompt will be displayed when starting a real-time log session if the TIME setting in the logger is password protected. If this setting is being used in conjunction with the automatic login feature to automatically start a real-time log session when LogWare is opened, it is recommended that the password protection for TIME is turned off in the logger.*

The *Stamp readings with logger's date/time (instead of computer's)* option determines whether Log*Ware* uses the computer's date and time or the logger's system date and time to stamp all readings taken during a real-time log session.

⚠️ *Note: When using the Stamp readings with logger's date/time (instead of computer's) option, a caution message is displayed if the Sync logger date/time when starting log session option is not enabled. It is recommended to sync the logger to the computer when starting a real-time log session if you are using the logger's system date/time to stamp the readings. These settings only apply to real-time log sessions started after the settings are changed.*

The *Reading resolutions* settings determine the number of decimal places to use when logging temperature and humidity readings. Log*Ware* sends commands to the logger to configure it to use these settings when a real-time log session starts. Select the number of digits to use for temperature readings using the *Temperature* field and humidity readings using the *Humidity* field.

The *Real-time graph settings* option determines the amount of time (x-axis) the graphs in the real-time log session window should display. Select the amount of time to display on the x-axis of the graphs using the *X-axis range* drop-down list.

3.5   Graph

The *Graph* tab displays options and settings related to real-time log session graphs and logged data graphs.
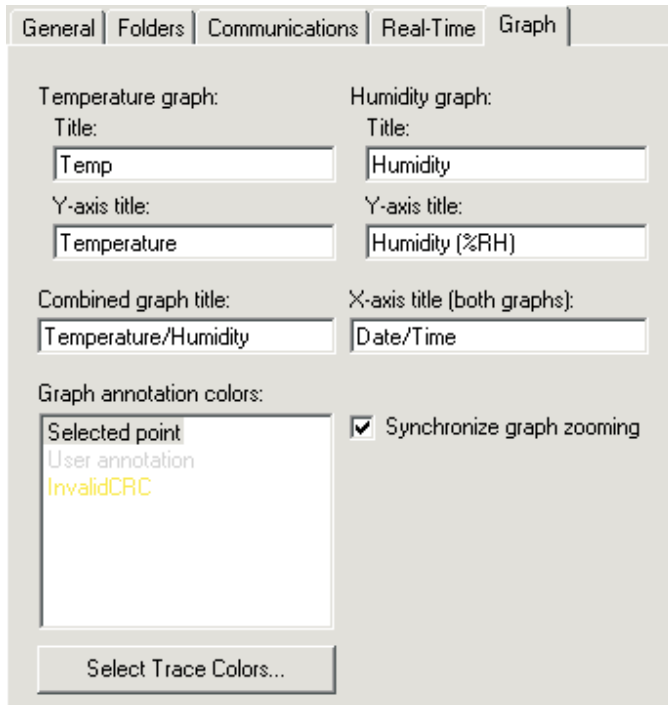
Figure 21   *LogWare III Options - Graph tab*

Note: Changing most of these settings only affects graphs that are created and displayed after closing the LogWare III Options dialog! Graphs that are already displayed are not affected.

The *Temperature graph* settings indicate settings that are used for graphs that are plotting temperature readings. The *Humidity graph* settings indicate settings that are used for graphs that are plotting humidity readings. The *Title* and *Y-axis title* fields determine the default text that is displayed on the graphs. The title is

displayed at the very top of the graph. The y-axis title is displayed on the left y-axis of the graph.

The *Combined graph title* field determines the text that is displayed as the title of graphs that plot both temperature and humidity readings. When both temperature and humidity readings are being plotted on the same graph, the left y-axis title uses the Y-axis title field below the *Temperature graph* heading and the right y-axis title uses the Y-axis title field below the *Humidity graph* heading.

The *X-axis title (both graphs)* field determines the text that is displayed below the x-axis of all graphs.

The *Graph annotation colors* list indicates the colors that are used when graph annotations are displayed on any graph. Log*Ware* supports three types of graph annotations: *Selected point*, *User annotation*, and *Invalid CRC*. To select the color to use for an annotation type, double-click the item in the list. The Color dialog is displayed. Choose the color to use for the selected annotation.
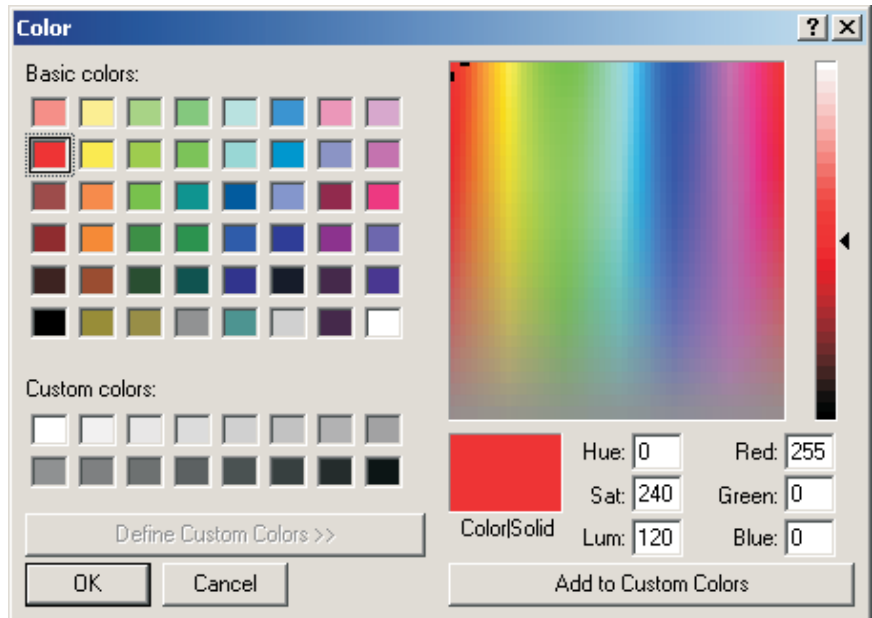
Figure 22 *Color selection*

Click the *Select Trace Colors* button to define the default colors that are used for graph traces. Refer to Section 3.5.1, Trace Colors, for more details on selecting trace colors.

The *Synchronize graph zooming* option determines whether zooming in on a section of a temperature graph causes the humidity graph to zoom in to the same section or vice versa. This setting is only applicable to graphs located in

the same logged data window when temperature and humidity readings are plotted on separate graphs.

⚠️ *Note: Real-time log session graphs do not support zooming.*

3.5.1 **Trace colors**

The Trace Colors dialog indicates the colors that should be used on the graphs for temperature and humidity traces.
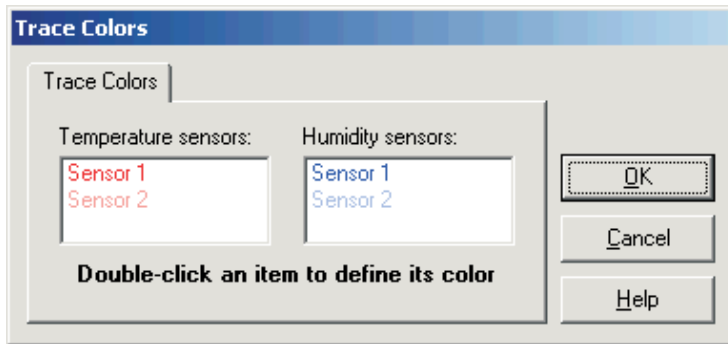
Figure 23 *Trace Colors*

The *Temperature sensors* and *Humidity sensors* lists indicate the color to be user for each temperature and humidity trace on the graph in the order that they will be used. Colors are used to help distinguish which graph trace corresponds to which sensor.

ℹ️ *Info: The labels Sensor n in each list are not related to sensor models, serial numbers, or locations. They simply refer to the graph trace for the first sensor, second sensor, etc.*

To select the color to use for a temperature or humidity trace, double-click the item in the appropriate list. The Color dialog is displayed. Choose the color to use for the selected graph trace.

4　Real-time data logging

The primary method of logging data into the database is real-time logging. Real-time data logging requires that a logger be connected to the computer. This allows Log*Ware* to communicate with the logger, to configure various settings and to query the temperature and humidity measurements.

Since Log*Ware* currently only supports communicating with a logger using RS-232 (serial) communications, Log*Ware* can only communicate with one logger at a time. When a real-time log session is running, you should not attempt to communicate with the logger using any other tools (i.e. downloading data, etc).

*Warning: As a general rule, if you use LogWare to log data in real-time from a logger over a period of time, you should not attempt to import or download readings from the same logger that overlap that time period. Although LogWare makes every attempt to prevent duplicate readings from being written to the database, it is impossible to guarantee that this can not happen due to issues such as PC/logger clock synchronization, real-time vs. data storage sample rates, etc. Therefore, you should **never** mix logging data in real-time and importing or downloading data from a logger for the same time period.*

Log*Ware*'s real-time data logging feature is very flexible and can be configured in many ways. Listed below are just a few examples of how Log*Ware* could be configured:

- Log temperature data in Celsius or Fahrenheit
- Log temperature data only, humidity data only, or both simultaneously
- Log data from one or both sensors simultaneously
- Log temperature data from one sensor and humidity data from another sensor
- Log data at virtually any rate from 1 second to 24 hours
- Stagger logging data from each sensor from 1 minute to 24 hours
- Start a log session immediately or at any future date and time
- Allow a log session to run indefinitely, or automatically terminate a log session after a certain number of readings have been logged, or after a specific amount of time has elapsed
- Automatically start logging data when you login to Log*Ware*
- Setup alarms with related alarm events to perform a certain task if an alarm value is exceeded

To configure a real-time log session, select the *New Log Session* option from the File menu, or select the *Setup* option from the *Datalog* menu.

4.1 Configuring a real-time log session

The Real-Time Log Session Settings dialog allows the user to configure a real-time log session.
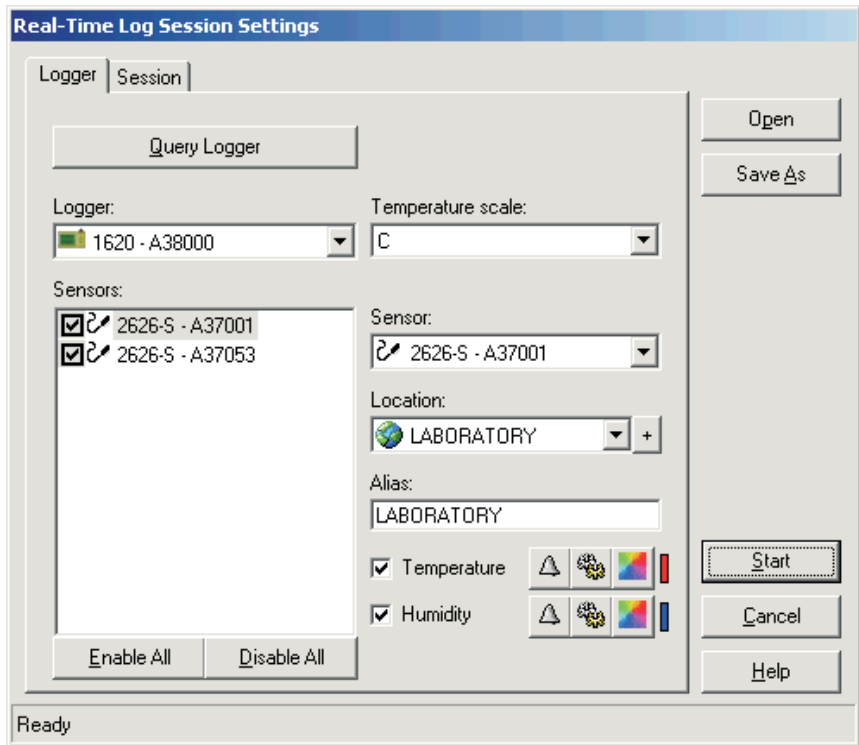
Figure 24 *Real-Time Log Session Settings*

Real-time log session settings can be saved to a configuration file and opened using this dialog. If you frequently want to use the same alarm settings, logging interval, and end log session settings to log real-time data, configure the session and save it to a log session settings (.LSS file) file by clicking the *Save As* button. The next time you need to start a log session, simply open the appropriate configuration file by clicking the *Open* button.

i *Info: Before opening a log session settings file, the logger's current set-*
tings must be queried. A message is displayed when the Open button is
clicked if the logger has not been queried yet.

The Real-Time Log Session Settings dialog has two tabs: *Logger* and *Session*.

! *Note: Before configuring a real-time log session, familiarize yourself with*
the options on the Real-Time tab of the LogWare III Options dialog. Refer
to Section 3, LogWare III Options, for more information.

4.1.1 Logger settings

The *Logger* tab allows the real-time log session settings regarding the log-
ger and sensors to be configured.

Figure 25 *Real-Time Log Session Settings - Logger tab*

When this dialog is displayed, all fields on this tab are disabled except the
Query Logger button.

Note: *Before proceeding, make sure the logger to use is connected to the appropriate communications port on the computer. The logger must also be turned on and running.*

The first step to configuring a real-time log session is to query the current settings from the logger that will be used. Click the *Query Logger* button. Log*Ware* attempts to communicate with the logger, reads in the current logger settings, and fills in the fields on this tab.

Info: *Log*Ware* keeps track of all of the loggers, sensors, and locations used to log data to the database. The first time a logger, sensor, or location is used, LogWare creates records in the database for each item. Administrators can configure LogWare to prevent certain loggers, sensors, and locations from being used to log data. Every time a logger is queried, LogWare checks to make sure the logger, sensors, and locations are active and can be used. Refer to Section 2.3, Managing Equipment, for more information on managing loggers, sensors, and locations.*

The *Logger* field indicates the model and serial number of the logger being used. This information cannot be changed.

The *Temperature scale* field indicates the current temperature scale setting of the logger. If you wish to log data in a different scale, use the drop-down list to choose the scale to use.

The *Sensors* list indicates the model, serial number, and state of the sensors connected to the logger. The check box next to each sensor in this list indicates whether any data should be logged from the sensor. Unchecking the check box next to a sensor indicates Log*Ware* should not log any data from that sensor. If the box is checked, temperature and/or humidity data will be logged, depending on the *Temperature* and *Humidity* options. Use the *Enable All* and *Disable All* buttons below the list to enable or disable all sensors.

To change the settings for a sensor, select the sensor in the *Sensors* list. The other fields on this tab are filled with the current settings for the selected sensor.

The *Sensor* field indicates the sensor model and serial number of the currently selected sensor. This information cannot be changed.

The *Location* field indicates the location of the selected sensor. This corresponds to the sensor ID in the logger. When logging data, it is important to know not only what sensor logged the data, but where the sensor was located when the data was logged (i.e. LABORATORY, MYDESK, OFFICE, CHAMBER, etc). Use this field to indicate where the selected sensor is located. Use the drop-down list to select an existing location, or add a new location by clicking the + button.

⚠️ *Note: You should avoid setting more than one sensor to the same location during a real-time log session. Setting more than one sensor to the same location makes it difficult to view the data by location after it is logged to the database. Instead, create a new location with a similar, but unique, name (i.e. LABORATORY1 and LABORATORY2).*

The *Alias* field is used by Log*Ware* to identify each sensor. This is the information that is displayed in the grid on the Real-Time Log Session window for each sensor. By default, the alias of a sensor matches the location. The alias can be changed as desired. The alias setting is not logged to the database and is discarded as soon as the log session stops.

The *Temperature* and *Humidity* options determine whether temperature and humidity readings for the selected sensor should be logged. To log both temperature and humidity, check both options. To log only temperature, check only the *Temperature* option. To log only humidity, check only the *Humidity* option. If both options are unchecked, the check box in the *Sensors* list is automatically unchecked, indicating no data from the selected sensor should be logged.

The three buttons next to the *Temperature* and *Humidity* options allow alarm settings, statistics, and the trace color to be configured. These buttons are disabled if the *Temperature* or *Humidity* option is not checked. The vertical bar to the right of the buttons indicates the current trace color.

To configure the alarm settings, click the 🔔 button. Refer to Section 4.1.4, Alarm Settings, for more information.

To configure the statistics, click the 🐾 button. Refer to Section 4.1.5, Statistics Settings, for more information.

To configure the trace color, click the 🎨 button. Refer to Section 4.1.6, Color, for more information.

4.1.2   Session settings

The *Session* tab allows the user to define when the log session should start, end, and the rate at which readings are logged to the database.

Figure 26 *Real-Time Log Session Settings - Session tab*

The *Logging interval* fields determine the rate at which measurements are queried from the logger during the real-time log session. Log*Ware* is capable of logging data at intervals from once every second to once every 24 hours.

Info: *The exact interval between measurements on a particular channel depends on the Sample all sensors simultaneously option on the Real-Time tab of the LogWare III Options dialog. Refer to Section 3, LogWare III Options, for more information. If this option is checked, LogWare attempts to query measurements on all enabled channels at the interval indicated by the Logging interval fields (simultaneous mode). If this option is not checked, LogWare queries the measurements on only one channel at a time at the indicated interval (sequential mode).*

The *Interval between scan sequences* option is only displayed if Log*Ware* is configured for sequential mode. If this option in enabled, Log*Ware* will query measurements on each enabled channel, one at a time at the interval indicated in the *Logging interval* fields. The Log*Ware* will wait until the amount of time specified in the *Interval between scan sequences* fields has elapsed since the measurement process began and query measurements on each enabled channel again.

By default, Log*Ware* expects to start logging real-time data as soon as you click the *Start* button. The *Start log session* option can be used to force Log*Ware* to wait until a specific date and/or time to begin logging. Select whether you want the log session to begin immediately or at a specified date and time using the drop-down list.

The *Delayed start date* and *Delayed start time* settings determine when the log session should begin if the **At date and time specified below** option is selected. Use the calendar to select the date, and enter the time in the field provided. These settings are disabled if a log session is set to begin immediately.

The *End log session* option can be used to automatically stop the logging process after a specified time has elapsed or after a specific number of readings have been logged on each channel. Use the drop-down list to select the appropriate option, then set the criteria using the *End log criteria* fields. By default, log sessions continue until they are manually stopped by the user.

Once the logger and session settings are complete, start the log session by clicking the *Start* button.

4.1.3   Log session settings file

It is common to need to use the same real-time log session settings over and over again. To save time configuring a log session, Log*Ware* allows the real-time log session settings to be saved to a configuration file, called a log session settings (.LSS file) file. Log session settings files can only be saved and opened from the Real-Time Log Session Settings dialog.

A log session settings file contains information about the temperature scale, session interval, session start, and session end settings, and sensor settings including the readings to log, alias, and statistics and alarm settings for each sensor.

A log session settings file is independent of the logger and sensors being used to log data. For this reason, the logger must be queried before a log session settings file can be opened.

A log session settings file can be opened automatically when Log*Ware* runs. Log*Ware* can also be configured to automatically start a log session without user interaction after logging into the database. These settings are available on the *General* tab of the Log*Ware* III Options dialog. Refer to Section 3, Log*Ware* III Options, for more information.

4.1.4   Alarm settings

1 The Alarm Settings dialog allows low and high alarms to be configured.
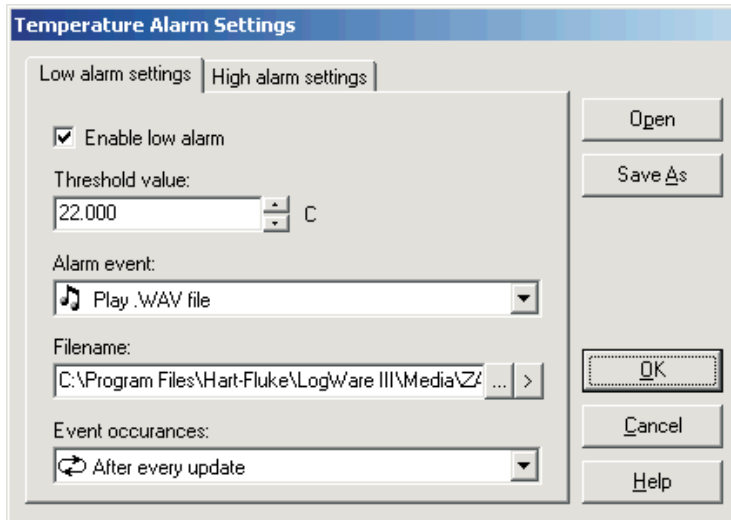
Figure 27   *Temperature Alarm Settings*

The Alarm Settings dialog has two tabs: *Low alarm settings* and *High alarm settings*. Both tabs display an identical set of fields that can be used to indicate low and high alarm settings.

If the same alarm settings need to be used repeatedly, you may want to save the alarm settings to a configuration file. After configuring the settings, click the *Save As* button to save the alarm settings to an alarm configuration file (.ALM file). To open an alarm configuration file, click the *Open* button and select the configuration file to open.

The *Enable low alarm* or *Enable high alarm* option indicates whether the low and high alarms are enabled. Check this option to enable the alarm, or uncheck it to disable the alarm.

The *Threshold value* field indicates the low or high alarm value. Enter the value to use for the low or high alarm. The defined alarm even will be triggered if a reading is equal to or exceeds the threshold value.

The *Alarm event* field indicates the event that should occur if the alarm threshold value is met or exceeded. The supported alarm events include:

- **No event** - No further action is taken
- **System beep** - Causes the default operating system beep to sound

- **Display message** - Displays a modal message (logging stops - user must respond to continue logging)
- **Play .WAV file** - Causes the indicated .WAV file to play
- **Launch .EXE file** - Launches the indicated .EXE file

If the **Display message** option is selected, enter the message to display in the Message to display field. To test the message, click the ">" button to the right of the field.

If either the **Play .WAV file** or **Launch .EXE file** option is selected, click the ... (Browse) button to the right of the Filename field to locate the .WAV or .EXE file. To test the event, click the ">" button to play the .WAV file or launch the .EXE file to make sure the selected file can be played or launched.

Info: *LogWare ships with a few sample .WAV files that can be used. These files are installed in the \Media subfolder. The **Launch .EXE file** option can be used to launch any application such as pager software which could be configured to dial a phone number automatically and transmit a fixed message to a pager indicating that an alarm has tripped.*

The *Event occurances* field indicates how often the alarm event should occur. The supported settings are:

- **Only once when alarm value is exceeded**
- **After every update**

Select the **Only once when the alarm value is exceeded** option to only allow the event to occur on the first reading that trips the alarm. Subsequent readings that also exceed the alarm threshold value will not cause the event to occur again until one or more readings are taken that reset the alarm.

Select the **After every update** option to allow the event to happen for every reading that trips the alarm and all subsequent readings that exceed the alarm threshold value.

Info: *The **After every update** option cannot be selected if the alarm event is set to **Launch .EXE file.***

4.1.5   Statistics settings

The Statistics Settings dialog allows the statistical calculations displayed to be defined.
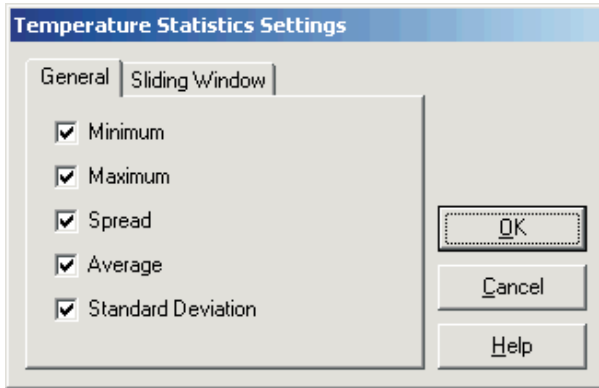
Figure 29 *Temperature Statistics Settings*

The Statistics Settings dialog has two tabs: *General* and *Sliding Window.*

General

The *General* tab indicates the general statistical calculations to display.
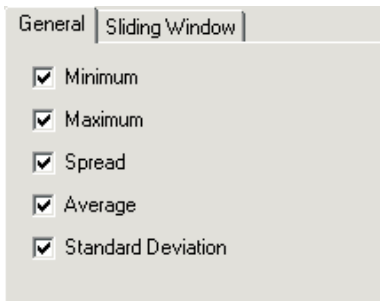
Figure 28 *Statistics Settings - General tab*

Check the options that should be displayed. Uncheck the options that should not be displayed.

Sliding window

The *Sliding Window* tab indicates whether the statistics are calculated from all readings or only the most recent readings.
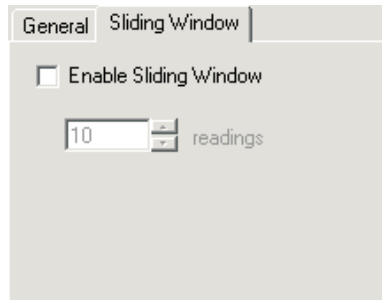
Figure 30   *Statistics Settings - Sliding Window tab*

To enable the sliding window, check the *Enable Sliding Window* option and enter the number of readings to include in the sliding window. Only the most recent *n* readings will be used to calculate the statistical values displayed.

4.1.6   **Color**

The Color dialog can be used to select the graph trace colors.
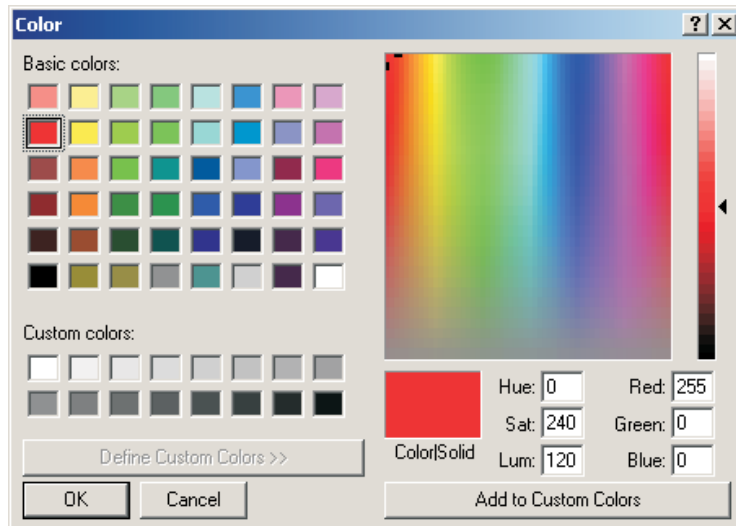
Figure 31   *Color selection*

Use the controls on this dialog to select the color to use or to define custom colors.

Click the *OK* button after choosing the color to use.

4.2 Real-time log session

The Real-Time Log Session window is displayed when a real-time log session is started. The window displays the most recent measurements from each sensor in a spreadsheet style grid, graphs of the measurements of all sensors, and also displays statistical calculations and the alarm settings for the selected sensor.
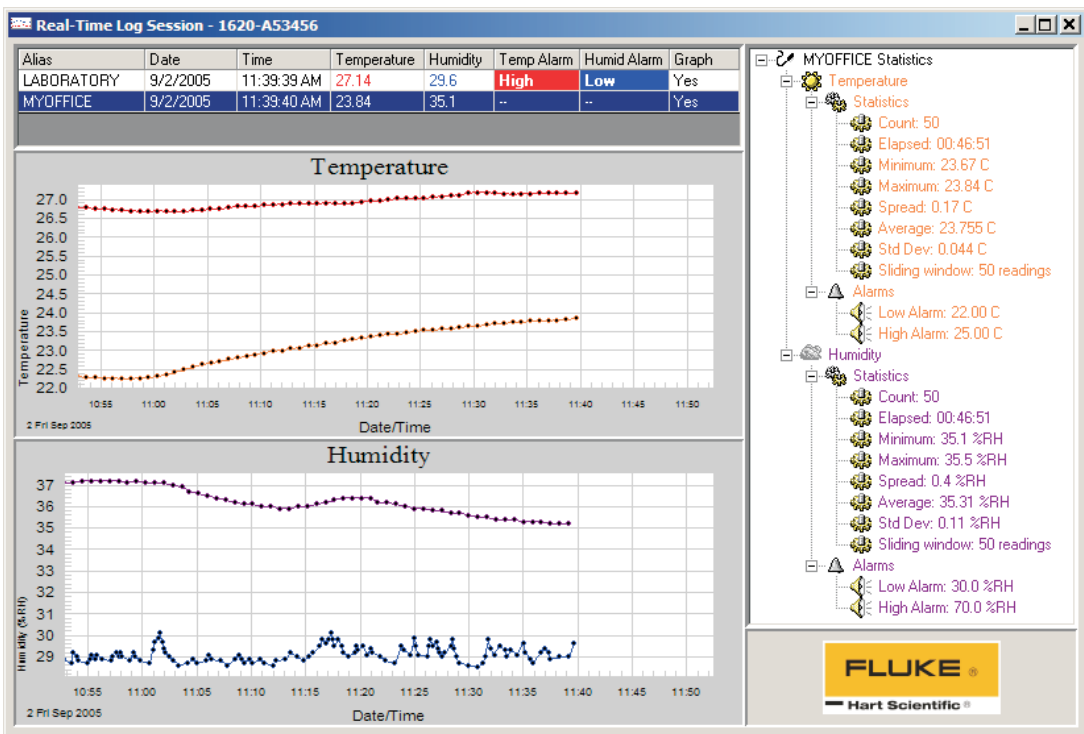
Figure 32   *Real-Time Log Session*

When starting a log session, Log*Ware* configures the logger according to the log session settings, including temperature scale, location (sensor IDs), alarm settings, resolutions, and sample rate.

If the *Sync logger date/time when starting log session* option is enabled, commands are sent to the logger when the real-time log session starts to synchronize the logger's system date and time to the computer's date and time.

Note: *When using the Sync logger date/time when starting log session option, the Enter Password prompt will be displayed when starting a real-time log session if the TIME setting in the logger is password protected. If this setting is being used in conjunction with the automatic login feature to automatically start a real-time log session when LogWare is opened, it is recommended that the password protection for TIME is turned off in the logger.*

Note: *If the Stamp readings with logger's date/time (instead of computer's) option is enabled, LogWare queries the logger's system date and time with each reading instead of using the computer's date and time. Be aware that enabling this option may cause the date and time information displayed on the graph to get slightly out of sync with the date and time stamps of the readings. However, the date and time stamps recorded in the database with each reading will always be accurate.*

If the log session was configured for a delayed start date/time, and the configured date/time has already passed, the Select Delayed Start Date/Time dialog is displayed. Select a new start date/time and click *OK* to continue.
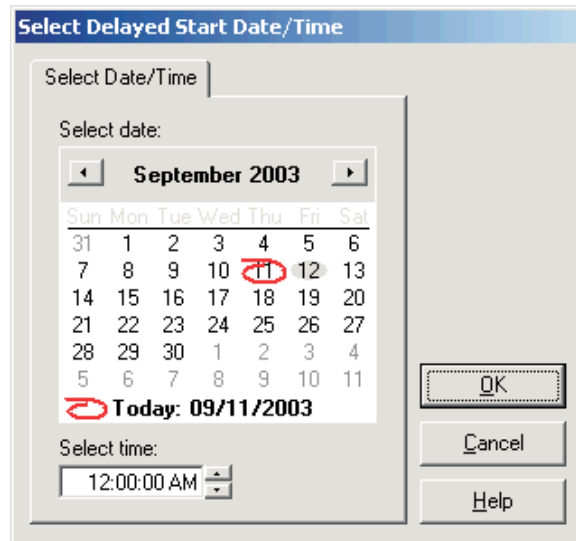

Figure 33 *Select Delayed Start Date/Time*

If the *Prompt to manually synchronize log session* option on the *Real-Time* tab of the Log*Ware* III Options dialog is checked, a prompt is displayed as soon as the log session is ready to begin logging data. Click the *OK* button to begin logging data. Refer to Section 3, Log*Ware* III Options, for more information.

To stop a log session, select the *Stop* option in the *Datalog* menu. The log session window can be closed by selecting the *Close* option in the *Datalog* menu.

The Log Session window is divided into three main sections: the sensors grid, graphs, and statistics and alarms panel. These sections can be resized by dragging the bars that divide the sections.

Each sensor is listed in order in the sensors grid. The alias defined for each sensor on the *Logger* tab of the Real-Time Log Session Settings dialog identifies each sensor. This grid displays the date and time the last measurement was taken, the measurement values, current alarm state, and whether the trace for each sensor is currently displayed on the graph.

Temperature and humidity readings and their alarm states are highlighted in the same colors as the graph traces defined for each sensor. If a current measured value exceeds an alarm value, the appropriate alarm state column for that sensor is highlighted in the grid in the defined color.

Individual traces on the graph can be shown or hidden by simply double-clicking on the appropriate row in the grid, or by right-clicking on the grid and selecting the *Show Trace on Graph* option in the popup menu. The *Graph* column indicates whether the traces for a sensor are currently shown on the graph.
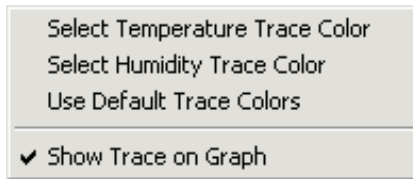
Graph trace colors for the selected sensor can also be changed by right-clicking on the grid and selecting the appropriate option from the popup menu.

As measurements are logged, they are also plotted on the graphs. Temperature and humidity readings may be plotted on the same graph, or on separate graphs. Refer to Section 3, Log*Ware* III Options, for more information.

Graphs can be printed by selecting the *Print | Graph* option in the *File* menu or by selecting the *Print Graph* option in the *Graph* menu. If the temperature and humidity readings are displayed in separate graphs, the Select Graph To Print

dialog is displayed. Select the graph(s) to print, then click the *OK* button to print the graph(s).
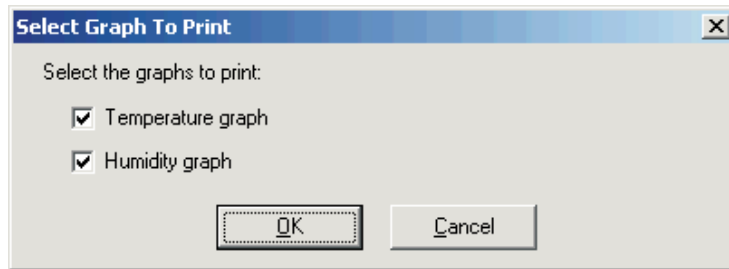
Figure 34 *Select Graph To Print*

The graphs can also be configured to show alarm lines and data point markers by selecting the appropriate options from the *Graph* menu.

The right side of the window shows the statistical calculations for the selected sensor. Optionally, the alarm values may also be displayed in this list. If the currently selected sensor's current measurement exceeds an alarm value, the alarm in this list is highlighted in a bold typeface. Statistics and alarms are also displayed in the defined colors for the selected sensor's graph traces.

The statistical values displayed can be changed by right-clicking on the *Statistics* node in the list. The *Statistics* popup menu is displayed.
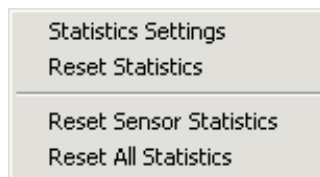
Select the *Statistics Settings* option to change which statistical values as displayed. Select the *Reset Statistics* option to reset only the selected statistics. To reset all statistics for the selected sensor, select the *Reset Sensor Statistics* option. To reset the statistics for all sensors simultaneously, select the *Reset All Statistics* option.

Alarm settings can also be changed for the selected sensor during a real-time log session. To change the current alarm settings, right-click on the appropriate *Alarms* node in the list. The Alarms popup menu is displayed.
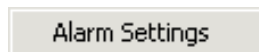
Select the *Alarm Settings* option to change the current alarm settings.

⚠ **Note:** *Changing the alarm settings during a real-time log session does NOT update the alarm settings in the logger!*

5   **Importing data**

Log*Ware* provides a tool that allows data to be imported from files into the Log*Ware* database. This tool can be useful when your logger is not located near a computer, or when you have multiple loggers in various locations.

Importing is only one way to get data into Log*Ware*'s database. Data can also be downloaded directly from a logger or logged in real-time.

Importing can be an effective method to getting data into the database because it does not require a computer to be running and connected to the logger at all times like real-time logging, and it does not require taking a computer to the logger like downloading requires. It does, however, require the use of a PC card to transport the data from the logger to the computer.

To import data from a PC card, select the *Import* option from the *File* menu.

5.1 Import options

1 The Import Options dialog allows the user to select one or more files to import data from.
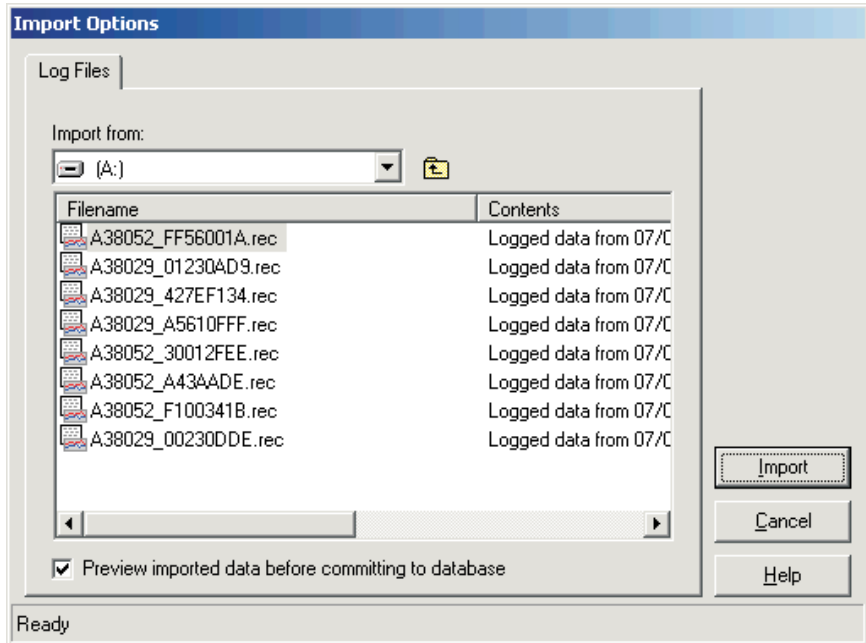
Figure 35 *Import Options*

The *Import from* field indicates the location (drive letter or folder) where the import files are located. This field defaults to the \Import folder. Use the drop-down list to select the drive or folder where the files to import are located. A list of folders and files found in the selected drive or folder are displayed in the list below. To open a subfolder, double-click the appropriate folder item in the list.

Valid logger files have a .REC extension. Only files with this extension can be imported into Log*Ware*'s database! Log*Ware* analyzes each file before it is displayed in the list and displays information about the contents of each file in the *Contents* column. If Log*Ware* is unable to open a file, or if the file does not match the expected format, the marker *<unknown format>* appears in the *Contents* column.

The *Preview imported data before committing to database* option allows the data to be viewed before Log*Ware* actually writes it permanently to the database. This allows you to review the data before deciding if it should be written

to the database or not. Leaving this option unchecked indicates that the data should be written to the database unconditionally.

Select the files to import by clicking on the filenames in the list. Hold down the *Shift* or *Ctrl* keys to select multiple files.

Click the *Import* button to begin the import process. The status bar at the bottom of the Import Options dialog indicates the import progress. When importing is complete, the data will either be written to the database, or displayed in the Imported Data window. Refer to Section 5.2, Imported Data, for more information.

⚠️ *Note: Committing large amounts of data to the database can take many minutes. The commit process progress and status are displayed as records as being processed and committed to the database.*

If Log*Ware* finds any matching data in the database, the Overwrite Matching Data prompt is displayed. The following options are available:

- **Overwrite matching data -** By clicking *Yes*, Log*Ware* will overwrite any matching records in the database. Log*Ware* deletes the current records from the database, then adds the new records to the database.

- **Discard matching data -** By clicking *No*, Log*Ware* will simply discard (ignore) any matching records. The record that is already in the database will remain unchanged.

Regardless of the option chosen, Log*Ware* will always write all new (unique) records to the database.

5.2   Imported data

The Imported Data window displays data that has been imported from a file or

downloaded from a logger's memory but has not yet been written (committed) to the database.

Figure 36   *Imported Data*

> **i** **Info:** *Data columns in the grid can be resized as desired. The data columns can be reordered by dragging the column header to its new position. The data can also be sorted by simply clicking on a column header. These features are provided as a convenience only and do not have any affect on how the data is written to the database.*

The data is displayed in a spreadsheet style grid. You can use the scroll bars to scroll through the data to review it before deciding whether or not to commit the data to the database.

The data displayed consists of the date and time the readings were logged, the model and serial number of the logger and the sensor that were used to log the data, the location, the temperature and humidity readings, the temperature and humidity alarm settings (*Min* and *Max* columns), and the user that imported or downloaded the data. The total number of records is displayed at the bottom of the window.

If you decide to write (commit) the data to the database, click the *Commit* button.

⚠️ *Note: Committing large amounts of data to the database can take many minutes. Once the Commit button has been clicked, allow sufficient time for LogWare to successfully commit the data to the database. The commit process progress and status are displayed as records as being processed and committed to the database.*

If Log*Ware* finds any matching data in the database, the Overwrite Matching Data prompt is displayed. The following options are available:

- **Overwrite matching data -** By clicking *Yes*, Log*Ware* will overwrite any matching records in the database. LogWare deletes the current records from the database, then adds the new records to the database.

- **Discard matching data -** By clicking *No*, Log*Ware* will simply discard (ignore) any matching records. The record that is already in the database will remain unchanged.

Regardless of the option chosen, Log*Ware* will always write all new (unique) records to the database.

To discard the data without writing it to the database, simply close the window. A prompt is displayed to confirm discarding the data to prevent accidentally closing the window without the opportunity to commit the data to the database.

6   Downloading data

Log*Ware* provides a tool that allows data to be downloaded from the memory of a logger into the Log*Ware* database. This tool can be useful when your logger is located near a computer.

Downloading is only one way to get data into Log*Ware*'s database. Data can also be imported from log files or logged in real-time.

*Warning: As a general rule, if you use LogWare to log data in real-time from a logger over a period of time, you should not attempt to import or download readings from the same logger that overlap that time period. Although LogWare makes every attempt to prevent duplicate readings from being written to the database, it is impossible to guarantee that this can not happen due to issues such as PC/logger clock synchronization, real-time vs. data storage sample rates, etc. Therefore, you should **never** mix logging data in real-time and importing or downloading data from a logger for the same time period.*

Downloading can be an effective method to getting data into the database because it does not require a computer to be running and connected to the logger at all times like real-time logging, and it does not require using a PC card to transport data from the logger like importing. It does, however, require that the logger be located near the computer (within about 50 feet) or that the computer be taken to where the logger is located. For this reason, it is most useful to use this feature with a laptop computer.

When data is downloaded from a logger, it is actually written to a file, and then imported into Log*Ware* in exactly the same manner as if you were importing data from a PC card file.

To download data from the memory of a logger, select the *Download* option from the *Tools* menu.

6.1   Download options

The Download Options dialog allows the user to specify the readings to be downloaded from a logger's memory.
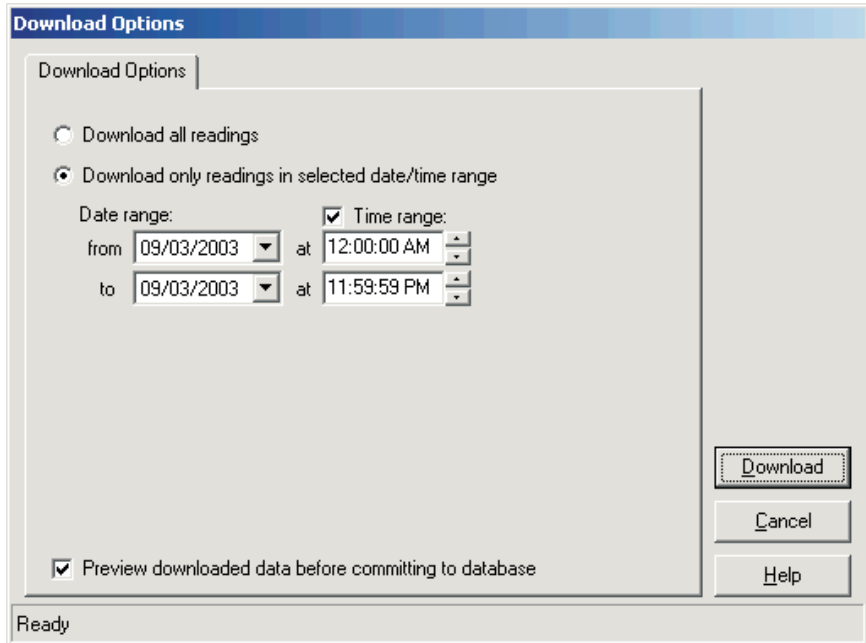
Figure 37   *Download Options*

When selecting the data to download from a logger's memory, there are two options to choose from: *Download all readings* and *Download only readings in selected date/time range*.

The *Download all readings* option indicates that all readings currently stored in the logger's memory should be downloaded. Use this option if data has never been downloaded from a logger before, or if the logger's memory had been cleared since the last download.

The *Download only readings in selected date/time range* option allows the user to select a specific range of readings to download. When this option is selected, the date and time fields can be used to select the range or readings to download. Use this option if data has been previously downloaded from the logger's memory, or if you are only interested in data from a specific time span.

The *Date range* fields are used to specify the *from* date and *to* date of the readings to download. Setting these dates to the same date causes all of the data from that day to be downloaded.

The *Time range* fields can be used to narrow down the range of the data to download even more. To specify a time range, check the *Time range* option, then select or enter the *from* time and the *to* time in the appropriate fields.

Info: *Because the logger stores data in its memory in a highly compressed format, it may be necessary for LogWare to actually download more data than indicated by the selected date and time range settings. However, LogWare discards readings that fall outside the specified range after the data is downloaded.*

The *Preview downloaded data before committing to database* option allows the data to be viewed before Log*Ware* actually writes it permanently to the database. This allows you to review the data before deciding if it should be written to the database or not. Leaving this option unchecked indicates that the data should be written to the database unconditionally.

When the options are set appropriately, click the *Download* button to begin the download process. The logger must be connected to the computer according to the selected communication method and settings. Refer to Section 3, Log*Ware* III Options, for more information on communication settings.

Note: *Downloading large amounts of data can take many minutes to download. For best results, use the fastest communication setting available.*

The status bar at the bottom of the Download Options dialog indicates the download progress. When downloading is complete, the data will either be written to the database, or displayed in the Imported Data window. Refer to Section 5.2, Imported Data, for more information on viewing the data and committing the data to the database.

Note: *Committing large amounts of data to the database can take many minutes. The commit process progress and status are displayed as records as being processed and committed to the database.*

If Log*Ware* finds any matching data in the database, the Overwrite Matching Data prompt is displayed. The following options are available:

- **Overwrite matching data -** By clicking *Yes*, Log*Ware* will overwrite any matching records in the database. LogWare deletes the current records from the database, then adds the new records to the database.

- **Discard matching data -** By clicking *No*, Log*Ware* will simply discard (ignore) any matching records. The record that is already in the database will remain unchanged.

Regardless of the option chosen, Log*Ware* will always write all new (unique) records to the database.

7   Managing logged data

Once data has been logged to the database, whether logged in real-time, imported from a file, or downloaded from the logger's memory, the data can be viewed, printed, or exported.

7.1   Viewing logged data

LogWare has a feature that allows data that has been logged to the database to be viewed on screen in a spreadsheet style grid and graphed. Statistics are also calculated for the data.

When viewing the data, the graphs can be zoomed, annotations can be added to individual data points, and the data and graphs can be printed or exported.

To view logged data, select the *Logged Data* option from the *View* menu.

7.1.1   View logged data options

The View Logged Data Options dialog allows the user to choose the data to view and determine how it should be displayed.
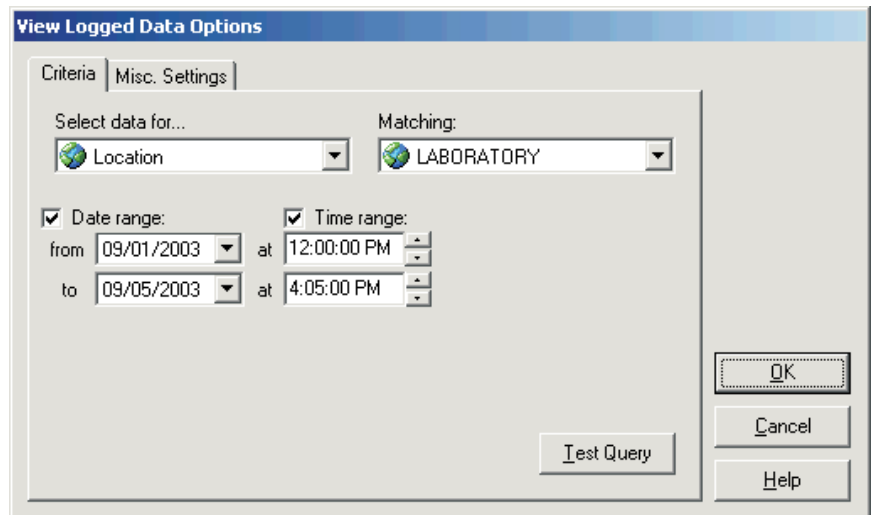

Figure 38   *View Logged Data Options*

The View Logged Data Options dialog has two tabs: *Criteria* and *Misc. Settings*.

When all settings have been selected, click the *OK* button to view the selected data. The data is displayed in the Logged Data window. Refer to Section 7.1.2, Logged Data, for more information.

7.1.1.1   **Criteria**

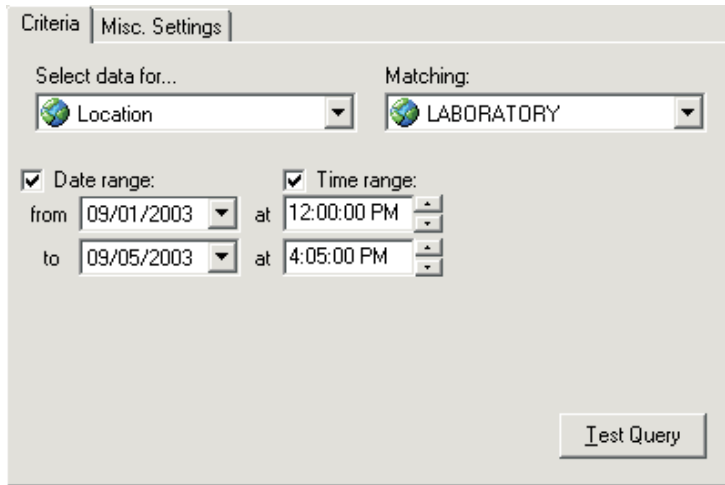The *Criteria* tab allows the data to be viewed to be selected.

Figure 39   *View Logged Data Options - Criteria Tab*

When readings are logged to the database, information about the logger and sensor that were used to log the data, as well as the location and user name are recorded with every reading. To view readings in the database, you must indicate which readings you want to view. Readings can be selected in one of two ways: by location or by sensor. Use the *Select data* for field to choose how you want to locate the readings to view.

The *Matching* field contains a list of all sensors or locations that have been used to log readings to the database. Use the drop-down list to select the location or sensor that matches the readings you want to view.

The *Date range* fields are used to specify the *from* date and *to* date of the readings to view. If you want to view all readings in the database from a particular location or sensor, leave the *Date range* option unchecked. Otherwise, check this option and select the *from* date and the *to* date. Setting these dates to the same date selects all of the readings from the selected location or sensor for that day to be viewed.

The *Time range* fields can be used to narrow down the range of the readings to view even more. To specify a time range, check the *Time range* option, then select or enter the *from* time and the *to* time in the appropriate fields.

Optionally, click the *Test Query* button to query the database and find out how many readings match the criteria you selected. A message appears indicating the number of records found in the database that match the criteria.

⚠️ *Note: LogWare is designed to handle large amounts of data (hundreds of thousands of readings) from a single query. However, be aware that viewing such large sets of data may take a few minutes. Some older, slower computers may not be able to display large amounts of data in a reasonable amount of time. You may wish to break up the data into smaller chunks to be more efficient.*

7.1.1.2   Misc settings

The *Misc. Settings* tab includes various options for determining how the data should be viewed.

Figure 40   *View Logged Data Options - Misc. Settings Tab*

The *Temperature readings* and *Humidity readings* options allow the user to specify which readings should be viewed. Check each applicable option.

The *Plot temperature and humidity readings on same graph* option determines whether separate graphs are created in the Logged Data window for temperature and humidity readings, or whether temperature and humidity readings are plotted on the same graph. When plotting temperature and humidity readings on the same graph, temperature readings use the left y-axis and humidity readings use the right y-axis of the graph.

Select the temperature scale to use to display the data using the *Select temperature scale* drop-down list. Temperature readings are always stored in the database in Celsius. Log*Ware* converts the readings to the desired scale for viewing.

The *Reading resolutions* fields indicate the number of decimal places to use to format the data. All readings are logged to the database according to the resolu-

tion settings that were used at the time the data was logged. Select the number of digits to use for temperature readings using the *Temperature* field and humidity readings using the *Humidity* field.

7.1.2 Logged data

The Logged Data window displays the selected data from the database in a spreadsheet style grid, in graphs and also displays statistical calculations for the data.
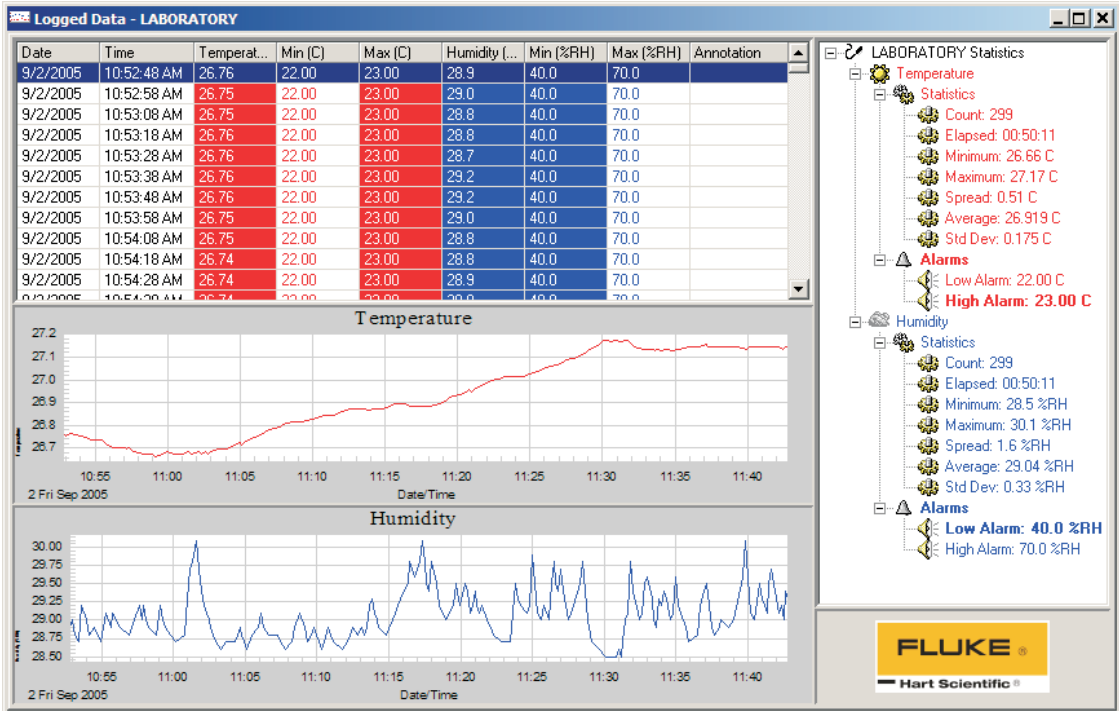
Figure 41 *Logged Data*

The Logged Data window is divided into three main sections: the readings grid, graphs, and statistics and alarms panel. These sections can be resized by dragging the bars that divide the sections.

The individual readings of the selected data can be viewed in the spreadsheet style grid in the upper left corner of the window. Use the scroll bars to scroll through the data. The displayed data consists of the date and time the readings were logged, the temperature and humidity readings (as applicable), the temperature and humidity alarm values (as applicable) and annotations. Columns may be resized as desired. The readings are always ordered by date and time.

Temperature and humidity readings and their alarm values are highlighted in the colors defined for *Sensor 1* on the *Graph* tab of the Log*Ware* III Options dialog. Refer to Section 3, Log*Ware* III Options, for more information. Temperature or humidity readings that exceed an alarm value are highlighted in the grid in the defined color.

If Log*Ware* determines that a reading may have been modified since it was logged to the database (Invalid CRC), the entire row for that reading is highlighted in yellow.

Annotations can be added to any reading in the grid to indicate special conditions, occurrences, or events that can help identify specific points in the data by selecting the *Annotations* option in the *Tools* menu or by right-clicking on the readings grid. Refer to Section 7.1.3, Annotations, for more information on using annotations.

The data is also graphed. Temperature and humidity readings may be plotted on the same graph, or on separate graphs. You can zoom in on a small section of a graph by clicking on the graph and dragging the mouse to draw a box. When temperature and humidity readings are plotted on separate graphs, the zoom feature can be synchronized to cause both graphs to zoom to the same area.

Graphs can be printed by selecting the *Print | Graph* option in the *File* menu or by selecting the *Print Graph* option in the *Graph* menu. If the temperature and humidity readings are displayed in separate graphs, the Select Graph To Print dialog is displayed. Select the graph(s) to print, then click the *OK* button to print the graph(s).
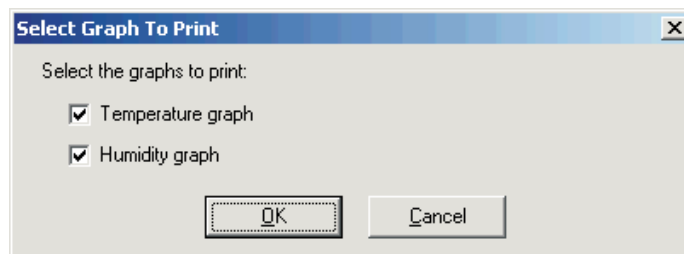
Figure 42 *Select Graph To Print*

The graphs can also be configured to show alarm lines, annotations, and data point markers by selecting the appropriate options from the *Graph* menu.

When showing annotations on the graphs, there are three types of annotations displayed: *Selected point*, *User annotation*, and *Invalid CRC*. The colors that are used to display these annotations are defined on the *Graph* tab of the Log*Ware* III Options dialog. Refer to Section 3, Log*Ware* III Options, for more information.

- The *Selected point* annotation indicates the currently selected row in the grid and consists of a dashed vertical line and the text indicating the date and time for the reading.

- The *User annotation* indicates annotations added to readings by the user and consists of a dashed vertical line and the annotation text.

- The *Invalid CRC* annotation indicates readings that may have been tampered with since being logged to the database and consists of a dashed vertical line and the words, "Invalid CRC".

The right side of the Logged Data window shows the statistical calculations for the readings displayed in this window. Optionally, the alarm values may also be displayed in this area. The statistical calculations are always for all readings displayed. The alarm values are for the currently selected reading in the grid only. If the currently selected reading exceeds an alarm value, the alarm in this list is highlighted in a bold typeface.

The statistical values displayed can be changed by right-clicking on the *Statistics* node in the list. The *Statistics* popup menu is displayed.

Statistics Settings
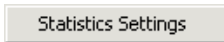
Select the *Statistics Settings* option to change which statistical values as displayed.

7.1.3   Annotations

Annotations can be added to any reading once it has been logged to the database. Annotations are very useful for making notes about special conditions, occurrences, or events that can help identify specific points in the data.

7.1.3.1   Adding annotations to readings

To add an annotation to a reading:

1   Select the data using the *Logged Data* option in the *View* menu. The Logged Data window is displayed.

2   Scroll through the grid in the upper left section of the window to locate the data reading to annotate. Click on the row in the grid to select the point.

3   Either right-click on the grid to display the *Annotation* popup menu or
     select the *Annotation* option in the *Tools* menu.
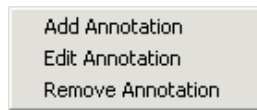
4   Select the *Add Annotation* option. The Add Annotation dialog is
     displayed.

5   Enter the annotation text in the *Annotation* field and click *OK* to close
     the dialog.

Figure 43   *Add Annotation*

7.1.3.2   Editing existing user annotations

To edit an existing user annotation:

1   Select the data using the *Logged Data* option in the *View* menu. The
     Logged Data window is displayed.

2   Scroll through the grid in the upper left section of the window to locate
     the data reading with the annotation to edit. Click on the row in the grid
     to select the point.

3   Either right-click on the grid to display the *Annotation* popup menu or select the *Annotation* option in the *Tools* menu.

> Add Annotation
> Edit Annotation
> Remove Annotation

4   Select the *Edit Annotation* option. The Edit Annotation dialog is displayed with the current annotation in the *Annotation* field.

5   Enter the new annotation text in the *Annotation* field and click *OK* to close the dialog.

Edit Annotation
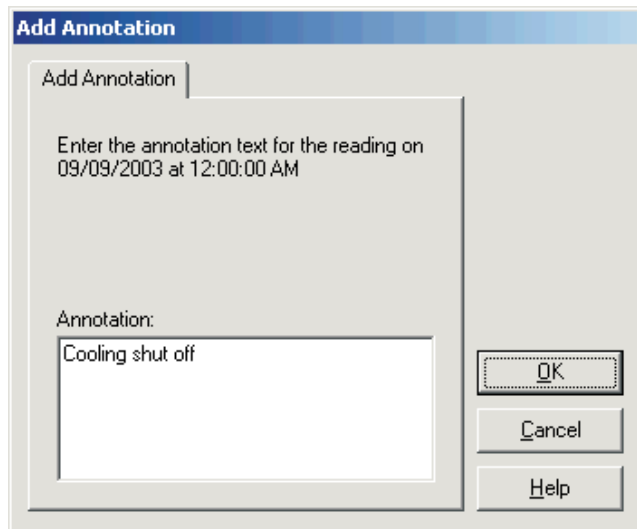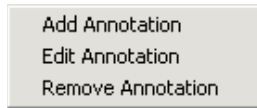
Edit Annotation

Enter the annotation text for the reading on
09/09/2003 at 12:00:00 AM

Annotation:

Cooling cut out automatically

OK

Cancel

Help

Figure 44   *Edit Annotation*
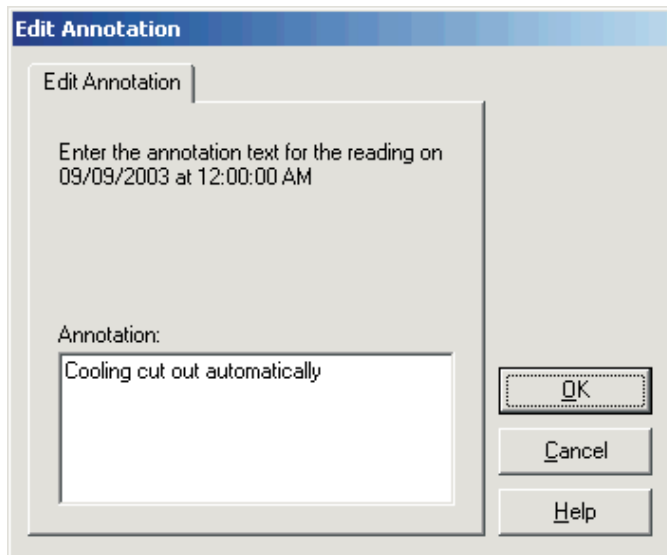
7.1.3.3   Removing existing user annotations

3   **To remove an existing user annotation:**

1   Select the data using the *Logged Data* option in the *View* menu. The Logged Data window is displayed.

2   Scroll through the grid in the upper left section of the window to locate the data reading with the annotation to edit. Click on the row in the grid to select the point.

3   Either right-click on the grid to display the *Annotation* popup menu or select the *Annotation* option in the *Tools* menu.

```
Add Annotation
Edit Annotation
Remove Annotation
```
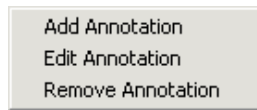
4   Select the *Remove Annotation* option. A confirmation message is displayed. Click *Yes* to confirm removing the annotation. The annotation is removed.

7.2   Exporting logged data

Log*Ware* has a feature that allows data that has been logged to the database to be exported to a variety of file formats.

To export logged data, select the *Export* option from the *File* menu. If a Logged Data window is active when you select this menu option, Log*Ware* expects that you want to export the data in the Logged Data window. Otherwise, you need to select the data to export. Log*Ware* displays the Export Logged Data Options dialog.

7.2.1 **Export logged data options**

The Export Logged Data Options dialog allows the user to choose the data to export and determine how it should be exported.
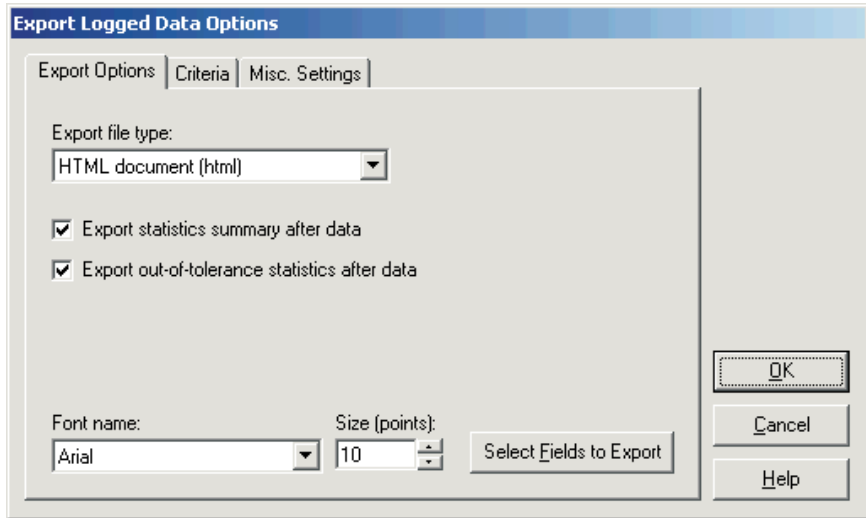
Figure 45 *Export Logged Data Options*

The Export Logged Data Options dialog has three tabs: *Export Options, Criteria* and *Misc. Settings*. If you are exporting data from a Logged Data window, only the *Export Options* tab is displayed.

When all settings have been selected, click the *OK* button to export the selected data. The Export Filename dialog is displayed. Choose the filename and folder to write the data to and click the *Save* button. The default folder that the export files are written to is defined on the *Folders* tab of the Log*Ware* III Options dialog. Refer to Section 3, Log*Ware* III Options, for more information.

7.2.1.1 Export options

The *Export Options* tab contains various settings regarding how the data is to be exported.

Figure 46 *Export Logged Data Options - Export Options tab*

The Export file type field determines to file type that the data is exported to. Log*Ware* can export data to one of three file types:

- **Comma-separated values** (.CSV file)
- **Rich Text Format** (.RTF file)
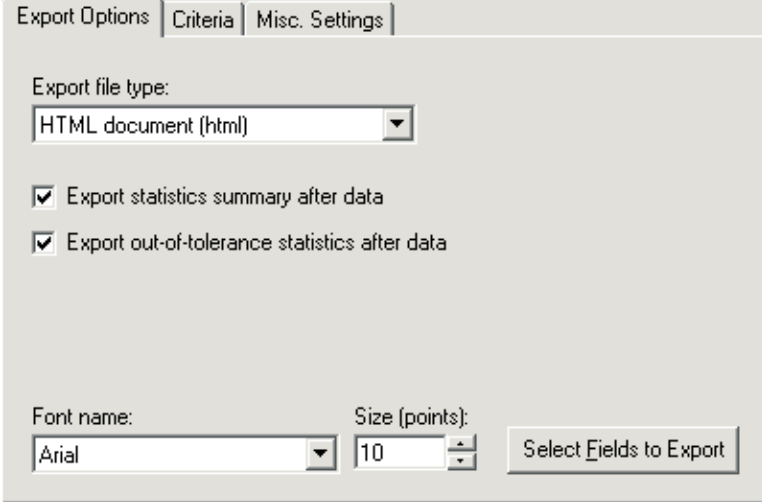- **HTML document** (.HTM file)

Each of these formats can be useful for different applications. If you want to import the data into a spreadsheet, the comma-separated values format may be best. If you want to open the file in a word processor, use the rich text format option. If you want to share or e-mail the data, HTML documents are probably the best choice. Select the type of file format you want the data to be exported to using the drop-down list.

The *Export statistics summary after data* option determines whether the calculated statistics for the selected data are exported at the end of the file. This option is disabled if the selected file format is comma-separated values.

The *Export out-of-tolerance statistics after data* option determines whether the statistics regarding what percentage of the readings in this data are "out of tolerance" (exceeded the alarm values) are exported at the end of the file. This option is disabled if the selected file format is comma-separated values.

The *Font name* and *Size (points)* settings determine the font to be used to export the report. Select the font and size that best suits your needs. These fields are disabled if the selected file format is comma-separated values.

Click the *Select Fields to Export* button to determine the data columns, column widths, and column order to use when exporting reports. This button is disabled if the selected file format is comma-separated values. Refer to Section 7.2.1.1.1, Export Fields, for more information on configuring the fields to export.

7.2.1.1.1 Export fields

The Export Fields dialog allows the fields to be exported to be defined.
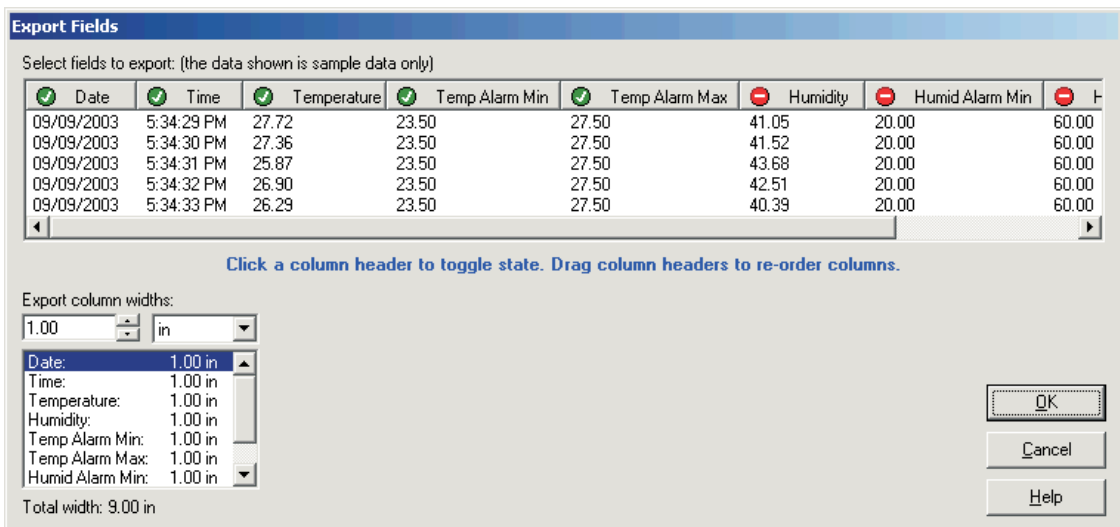
Figure 47 *Export Fields*

This dialog is used to determine which columns of data are exported, the order in which the columns are exported, and the width of each column.

Columns that are to be exported are indicated in the spreadsheet style grid with the symbol ✓ . Columns that are not to be exported are indicated with the symbol ⊖ . To toggle the state of a column, click the column header. The symbol will change indicating the current state of the column.

To set the order to the columns to export, simply drag the column header to the new position and drop it.

To set the width of each column, use the *Export column widths* fields. Select the column in the list, then enter the width in the field provided. You can change the scale using the drop-down list. Supported scales are **inches (in)** and **centimeters (cm)**. When switching scales, the column widths are automatically

converted to the new scale. The total combined width of all columns is indicated below the list.

> **Info:** *Adjusting the width of the columns in the grid does not affect the width of the columns when exported. You must use the Export column widths fields to set the column widths.*

7.2.1.2   Criteria

The *Criteria* tab allows the data to be exported to be selected.

Figure 48 *Export Logged Data Options - Criteria tab*

When readings are logged to the database, information about the logger and sensor that were used to log the data, as well as the location and user name are recorded with every reading. To export readings from the database, you must indicate which readings you want to export. Readings can be selected in one of two ways: by location or by sensor. Use the *Select data for* field to choose how you want to locate the readings to export.

The *Matching* field contains a list of all sensors or locations that have been used to log readings to the database. Use the drop-down list to select the location or sensor that matches the readings you want to export.

The *Date range* fields are used to specify the *from* date and *to* date of the readings to export. If you want to export all readings in the database from a particular location or sensor, leave the *Date range* option unchecked. Otherwise, check this option and select the *from* date and the *to* date. Setting these dates to the same date selects all of the readings from the selected location or sensor for that day to be exported.

The *Time range* fields can be used to narrow down the range of the readings to view even more. To specify a time range, check the *Time range* option, then select or enter the *from* time and the *to* time in the appropriate fields.

Optionally, click the *Test Query* button to query the database and find out how many readings match the criteria you selected. A message appears indicating the number of records found in the database that match the criteria.

⚠️ *Note: LogWare is designed to handle large amounts of data (hundreds of thousands of readings) from a single query. However, be aware that exporting such large sets of data may take a few minutes. Some older, slower computers may not be able to export large amounts of data in a reasonable amount of time. You may wish to break up the data into smaller chunks to be more efficient.*

7.2.1.3 Misc. settings

The *Misc. Settings* tab includes various options for determining how the data should be exported.
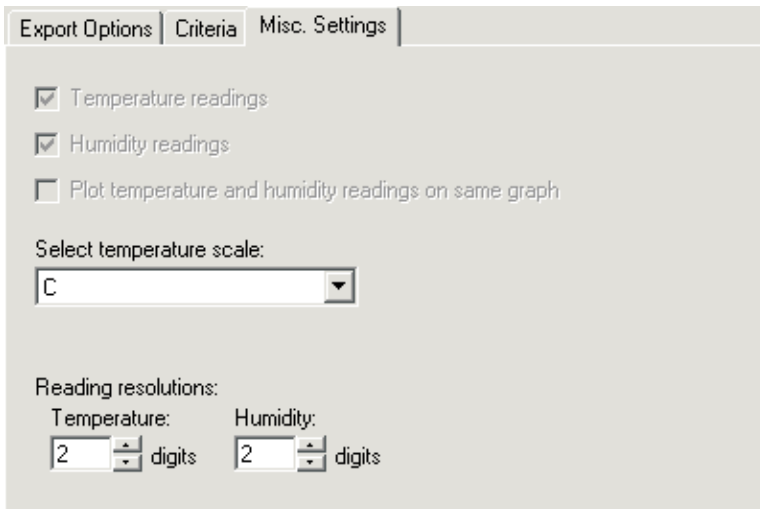
Figure 49 *Export Logged Data Options - Misc. Settings*

The *Temperature readings* and *Humidity readings* options are disabled when exporting. To choose whether temperature or humidity readings print on the report, refer to Section 7.2.1.1, Export Options.

The *Plot temperature and humidity readings on same graph* option is also disabled when exporting.

Select the temperature scale to use to export the data using the *Select temperature scale* drop-down list. Temperature readings are always stored in the data-

base in Celsius. Log*Ware* converts the readings to the desired scale for exporting.

The *Reading resolutions* fields indicate the number of decimal places to use to format the data. All readings are logged to the database according to the resolution settings that were used at the time the data was logged. Select the number of digits to use for temperature readings using the *Temperature* field and humidity readings using the *Humidity* field.

7.3 Printing reports

Log*Ware* has a feature that allows data that has been logged to the database to be printed in tabular format to a printer. Statistics can also be calculated and printed with the data.

To print a report of logged data, select the *Print | Report* option from the *File* menu. If a Logged Data window is active when you select this menu option, LogWare expects that you want to print the data in the Logged Data window. Otherwise, you need to select the data to print. LogWare displays the Print Logged Data Options dialog.

7.3.1   Print logged data options

The Print Logged Data Options dialog allows the user to choose the data to print and determine how it should be printed.

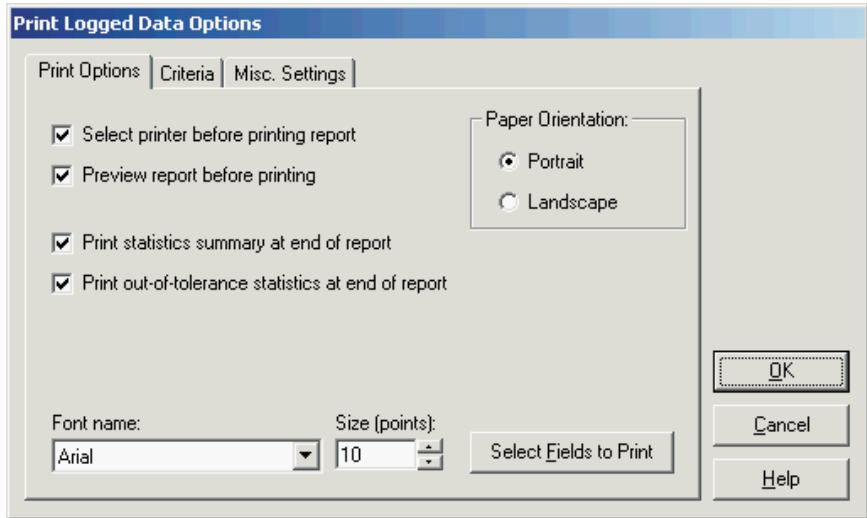**Figure 50**   *Print Logged Data Options*

The Print Logged Data Options dialog has three tabs: *Print Options*, *Criteria* and *Misc. Settings.* If you are printing a report of the data in a Logged Data window, only the *Print Options* tab is displayed.

When all settings have been selected, click the *OK* button to print the selected data. Figure 51 shows an example page of a printed report.

Report for location 'LABORATORY' on 09/09/2003...

Date	Time	Temperature (C)	Humidity (% RH)	Temp Alarm Min (C)	Temp Alarm Max (C)	Humid Alarm Min (% RH)	Humid Alarm Max (% RH)	Annotation
09/09/2003	11:30:00 AM	24.90	34.50	22.00	26.00	35.00	40.00	
09/09/2003	11:30:10 AM	24.90	34.50	22.00	26.00	35.00	40.00	
09/09/2003	11:30:20 AM	24.90	34.50	22.00	26.00	35.00	40.00	
09/09/2003	11:30:30 AM	24.90	34.50	22.00	26.00	35.00	40.00	
09/09/2003	11:30:40 AM	24.90	34.40	22.00	26.00	35.00	40.00	
09/09/2003	11:30:50 AM	24.90	34.40	22.00	26.00	35.00	40.00	
09/09/2003	11:31:00 AM	24.90	34.40	22.00	26.00	35.00	40.00	
09/09/2003	11:31:10 AM	24.90	34.40	22.00	26.00	35.00	40.00	
09/09/2003	11:31:20 AM	24.89	34.50	22.00	26.00	35.00	40.00	
09/09/2003	11:31:30 AM	24.89	34.50	22.00	26.00	35.00	40.00	
09/09/2003	11:31:40 AM	24.90	34.50	22.00	26.00	35.00	40.00	
09/09/2003	11:31:50 AM	24.90	34.50	22.00	26.00	35.00	40.00	
09/09/2003	11:32:00 AM	24.91	34.50	22.00	26.00	35.00	40.00	
09/09/2003	11:32:10 AM	24.91	34.50	22.00	26.00	35.00	40.00	
09/09/2003	11:32:20 AM	24.91	34.50	22.00	26.00	35.00	40.00	
09/09/2003	11:32:30 AM	24.91	34.40	22.00	26.00	35.00	40.00	
09/09/2003	11:32:40 AM	24.91	34.40	22.00	26.00	35.00	40.00	
09/09/2003	11:32:50 AM	24.92	34.40	22.00	26.00	35.00	40.00	
09/09/2003	11:33:00 AM	24.91	34.40	22.00	26.00	35.00	40.00	
09/09/2003	11:33:10 AM	24.91	34.40	22.00	26.00	35.00	40.00	
09/09/2003	11:33:20 AM	24.92	34.40	22.00	26.00	35.00	40.00	
09/09/2003	11:33:30 AM	24.92	34.40	22.00	26.00	35.00	40.00	
09/09/2003	11:33:40 AM	24.91	34.40	22.00	26.00	35.00	40.00	
09/09/2003	11:33:50 AM	24.91	34.40	22.00	26.00	35.00	40.00	
09/09/2003	11:34:00 AM	24.92	34.40	22.00	26.00	35.00	40.00	
09/09/2003	11:34:10 AM	24.92	34.40	22.00	26.00	35.00	40.00	
09/09/2003	11:34:20 AM	24.92	34.40	22.00	26.00	35.00	40.00	
09/09/2003	11:34:30 AM	24.92	34.40	22.00	26.00	35.00	40.00	
09/09/2003	11:34:40 AM	24.92	34.40	22.00	26.00	35.00	40.00	
09/09/2003	11:34:50 AM	24.92	34.40	22.00	26.00	35.00	40.00	
09/09/2003	11:35:00 AM	24.92	34.50	22.00	26.00	35.00	40.00	
09/09/2003	11:35:10 AM	24.92	34.70	22.00	26.00	35.00	40.00	
09/09/2003	11:35:20 AM	24.93	34.70	22.00	26.00	35.00	40.00	
09/09/2003	11:35:30 AM	24.93	34.60	22.00	26.00	35.00	40.00	
09/09/2003	11:35:40 AM	24.94	34.70	22.00	26.00	35.00	40.00	
09/09/2003	11:35:50 AM	24.94	34.80	22.00	26.00	35.00	40.00	
09/09/2003	11:36:00 AM	24.95	34.80	22.00	26.00	35.00	40.00	
09/09/2003	11:36:10 AM	24.95	34.80	22.00	26.00	35.00	40.00	
09/09/2003	11:36:20 AM	24.96	34.80	22.00	26.00	35.00	40.00	
09/09/2003	11:36:30 AM	24.97	34.80	22.00	26.00	35.00	40.00	
09/09/2003	11:36:40 AM	24.98	34.80	22.00	26.00	35.00	40.00	
09/09/2003	11:36:50 AM	24.98	34.90	22.00	26.00	35.00	40.00	
09/09/2003	11:37:00 AM	24.99	35.00	22.00	26.00	35.00	40.00	
09/09/2003	11:37:10 AM	24.99	34.90	22.00	26.00	35.00	40.00	
09/09/2003	11:37:20 AM	25.00	34.90	22.00	26.00	35.00	40.00	
09/09/2003	11:37:30 AM	25.01	35.10	22.00	26.00	35.00	40.00	
09/09/2003	11:37:40 AM	25.01	35.30	22.00	26.00	35.00	40.00	
09/09/2003	11:37:50 AM	25.01	35.80	22.00	26.00	35.00	40.00	
09/09/2003	11:38:00 AM	25.01	35.80	22.00	26.00	35.00	40.00	
09/09/2003	11:38:10 AM	25.01	35.90	22.00	26.00	35.00	40.00	
09/09/2003	11:38:20 AM	25.02	35.70	22.00	26.00	35.00	40.00	
09/09/2003	11:38:30 AM	25.03	35.60	22.00	26.00	35.00	40.00	
09/09/2003	11:38:40 AM	25.04	35.60	22.00	26.00	35.00	40.00	
09/09/2003	11:38:50 AM	25.04	35.80	22.00	26.00	35.00	40.00	
09/09/2003	11:39:00 AM	25.05	35.90	22.00	26.00	35.00	40.00	
09/09/2003	11:39:10 AM	25.06	35.70	22.00	26.00	35.00	40.00	
09/09/2003	11:39:20 AM	25.07	35.60	22.00	26.00	35.00	40.00	
09/09/2003	11:39:30 AM	25.08	35.40	22.00	26.00	35.00	40.00	
09/09/2003	11:39:40 AM	25.08	35.30	22.00	26.00	35.00	40.00	
09/09/2003	11:39:50 AM	25.08	35.20	22.00	26.00	35.00	40.00	

Page 70 of 71   09/23/2003 1:20:48 PM

Figure 51 *Sample of printed report*

7.3.1.1 Print options

The *Print Options* tab contains various settings regarding how the data is to be printed.
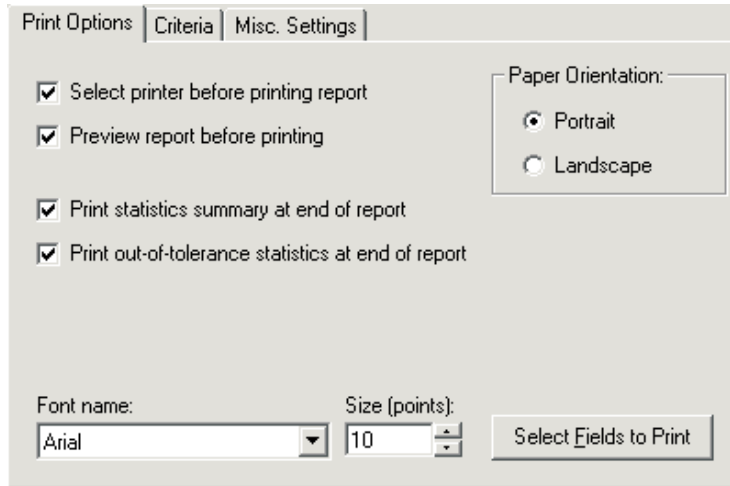

Figure 52   *Print Logged Data Options - Print Options tab*

The *Select printer before printing report* option determines whether the Print dialog is displayed before the report is printed to allow the printer to which the report is printed to be selected. Unchecking this option causes the report to be printed to the default printer.

The *Preview report before printing* option determines whether the report is displayed on screen in a Preview window instead of being sent to the printer. Reports can be printed from the Preview window. Refer to Section 7.4, Print Preview, for more information.

The *Print statistics summary at end of report* option determines whether the calculated statistics for the selected data are printed at the end of the report.

The *Print out-of-tolerance statistics at end of report* option determines whether the statistics regarding what percentage of the readings in this report are "out of tolerance" (exceeded the alarm values) are printed at the end of the report.

The *Paper orientation options*, **Portrait** and **Landscape**, determine the paper orientation to use when printing the report.

The *Font name* and *Size (points)* settings determine the font to be used to print the report. Select the font and size that best suits your needs.

Click the *Select Fields to Print* button to determine the data columns, column widths, and column order to use when printing reports. Refer to Section 7.3.1.1.1, Print Fields, for more information on configuring the fields to print.

7.3.1.1.1 Print fields

The Print Fields dialog allows the fields to be printed on a report to be defined.
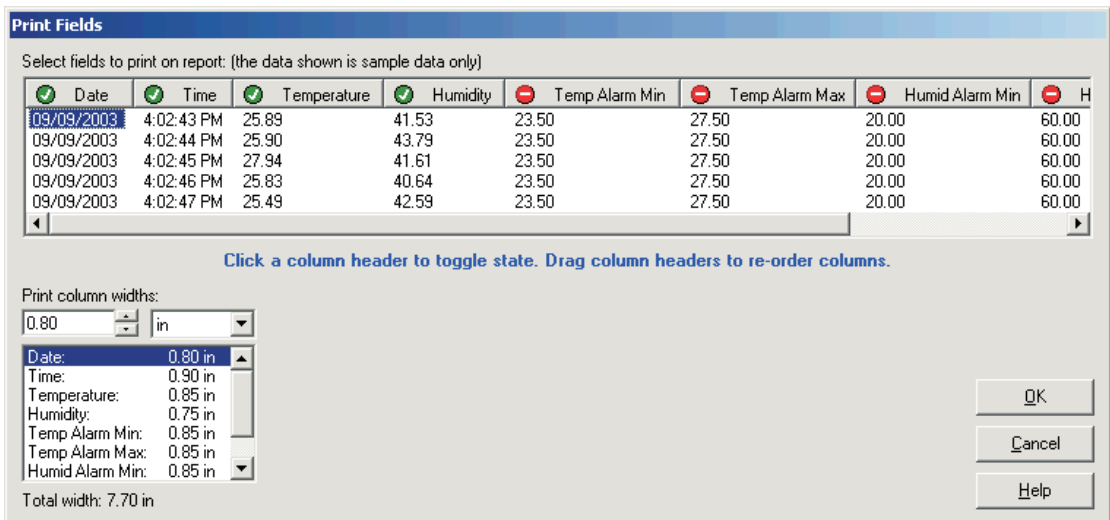

Figure 53 *Print Fields*

This dialog is used to determine which columns of data print on reports, the order in which the columns are printed, and the width of each column.

Columns that are to be printed on the report are indicated in the spreadsheet style grid with the symbol ✓ . Columns that are not to be printed on the report are indicated with the symbol ⛔ . To toggle the state of a column, click the column header. The symbol will change indicating the current state of the column.

To set the order to the columns to print, simply drag the column header to the new position and drop it.

To set the printed width of each column, use the *Print column widths* fields. Select the column in the list, then enter the width in the field provided. You can change the scale using the drop-down list. Supported scales are **inches (in)** and **centimeters (cm)**. When switching scales, the column widths are automatically converted to the new scale. The total combined width of all columns is indicated below the list.

ℹ️ *Info: Adjusting the width of the columns in the grid does not affect the printed width of the columns on the report. You must use the Print column widths fields to set the column widths.*

7.3.1.2   Criteria

The *Criteria* tab allows the data to be printed to be selected.
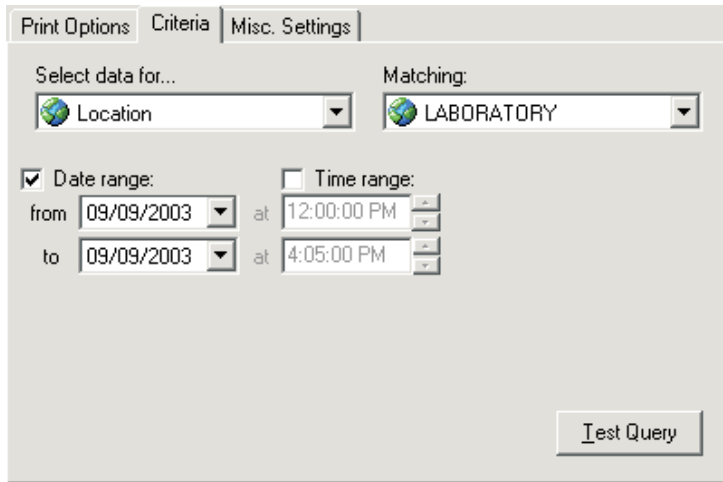

Figure 54 *Print Logged Data Options - Criteria tab*

When readings are logged to the database, information about the logger and sensor that were used to log the data, as well as the location and user name are recorded with every reading. To print a report of readings from the database, you must indicate which readings you want to print in the report. Readings can be selected in one of two ways: by location or by sensor. Use the *Select data for* field to choose how you want to locate the readings to print.

The *Matching* field contains a list of all sensors or locations that have been used to log readings to the database. Use the drop-down list to select the location or sensor that matches the readings you want to print.

The *Date range* fields are used to specify the *from* date and *to* date of the readings to print. If you want to print all readings in the database from a particular location or sensor, leave the *Date range* option unchecked. Otherwise, check this option and select the *from* date and the *to* date. Setting these dates to the same date selects all of the readings from the selected location or sensor for that day to be printed.

The *Time range* fields can be used to narrow down the range of the readings to view even more. To specify a time range, check the *Time range* option, then select or enter the *from* time and the *to* time in the appropriate fields.

Optionally, click the *Test Query* button to query the database and find out how many readings match the criteria you selected. A message appears indicating the number of records found in the database that match the criteria.

⚠️ *Note: LogWare is designed to handle large amounts of data (hundreds of thousands of readings) from a single query. However, be aware that printing such large sets of data may take a few minutes. Some older, slower computers may not be able to print large amounts of data in a reasonable amount of time. You may wish to break up the data into smaller chunks to be more efficient.*

7.3.1.3   Misc settings

The *Misc. Settings* tab includes various options for determining how the data should be printed.

Figure 55   *Print Logged Data Options - Misc. Settings tab*

The *Temperature readings* and *Humidity readings* options are disabled when printing reports. To choose whether temperature or humidity readings print on the report, refer to Section 7.3.1.1.1, Print Fields.

The *Plot temperature and humidity readings on same graph* option is also disabled when printing reports.

Select the temperature scale to use to display the data using the *Select temperature scale* drop-down list. Temperature readings are always stored in the database in Celsius. Log*Ware* converts the readings to the desired scale for printing.

The *Reading resolutions* fields indicate the number of decimal places to use to format the data. All readings are logged to the database according to the resolution settings that were used at the time the data was logged. Select the number of digits to use for temperature readings using the *Temperature* field and humidity readings using the *Humidity* field.

7.4 Print preview

The Print Preview window is used to view reports on screen without having to print a hard copy.
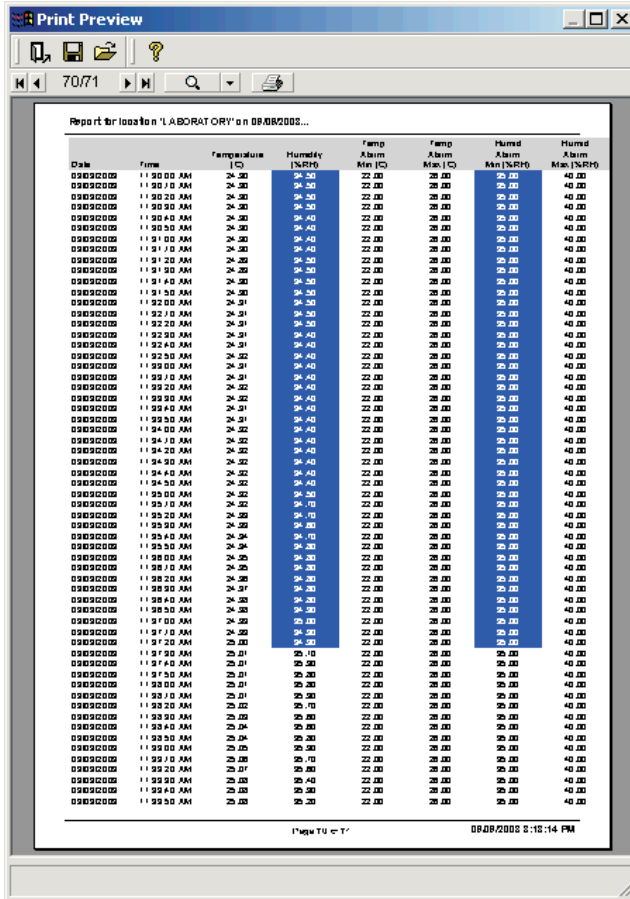

Figure 56 Print Preview

The Print Preview window toolbar provides buttons to close the Print Preview window, open and save reports to files, open the help file, navigate through all of the pages of the report, zoom in and out, and print the report.

Reports can be saved to a report file (.RPT file). However, these files have a proprietary format and cannot be opened or viewed by other applications. Report files can only be opened and printed from the Print Preview window itself. If you need to share a report with others in a standard file format such as

HTML or RTF, use Log*Ware's* Export feature to export the data to a standard format file. Refer to Section 7.2, Exporting Logged Data, for more information.

8 Database maintenance

A It is important to regularly backup and maintain your database to prevent problems from arising.

As you add records to and remove records from the database, its size can grow rapidly. Also, the potential for problems to arise in the database can increase. Log*Ware*'s database is limited to a maximum size of 2GB.

As a result, the database should be compacted as a routine maintenance process approximately once a month or as deemed necessary. Log*Ware* provides a tool for compacting the database.

8.1 Compacting the database

A **To compact the database:**

1 Run Log*Ware* and login using an administrator account.

2 Select the *Database | Compact Database* option in the *Tools* menu.

3 The database is compacted.

4 After the process is complete, you are prompted to login to the database again.

The Log*Ware* database is named LOGWARE3.MDB and is located in the \Database folder. As part of the process of compacting the database, a copy is made of the current database before the compacting process begins. This copy is given the name LOGWARE3.*nnn* where *nnn* is a sequential number starting at 000. These copies of the database can be left as is, however, it is recommended that you either move these files to another disk drive or even burn them to a CD as they can take a lot of disk space.

9 Technical support

Please contact one of the following authorized Service Centers to coordinate service on your product:

Fluke Corporation, Hart Scientific Division

    799 E. Utah Valley Drive

    American Fork, Utah 84003-9775

    USA

    Phone: +1.801.763.1600

    Toll Free: +1.800.438.4278

    Fax: +1.801.763.1010

    E-mail: support@hartscientific.com

Fluke Nederland B.V.

    Customer Support Services

    Science Park Eindhoven 5108

    5692 EC Son

    NETHERLANDS

    Phone: +31-402-675300

    Telefax: +31-402-675321

    E-mail: ServiceDesk@fluke.nl

Fluke Int'l Corporation

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    Room 2301 Sciteck Tower

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    Chao Yang District

    Beijing 100004, PRC

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Fluke South East Asia Pte Ltd.

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E-mail: antng@singa.fluke.com

Check our website on the Internet regularly for answers to Frequently Asked Questions, software updates, and Service Releases.

Before contacting Technical Support, check the links below to see if the problem you are having can be resolved by information contained in these sections:

- Section 1.6, Requirements
- Section 1.7, Installation
- Section 1.8, Running Log*Ware*
- Section 8, Database Maintenance
- Section 2, Security
- Section 2.1, Administration
- Section 2.2, User Accounts

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

- Name of the software (Log*Ware* III)
- Software version (as found on the *Help | About* dialog)
- Detailed description of the problem
- What the software was doing when the problem arose
- The exact wording and/or number of any error message received
- Any other information that may help to solve the problem

Index

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.ALM file 38,52
.CSV file 81
.EXE file 53
.HTM file 81
.LSS file 38,46,51
.REC file 62
.RPT file 92
.RTF file 81
.WAV file 53

A

access level 11,14,20,22 - 23,33
active 22,31 - 33,48
add account 21
add annotation 17,76
add location 33 - 34
administrator account 11,19 - 22,25,95
alarm events 14,16,45,52 - 53
alarm settings 38,41,46,49,51 - 52,56,59
alarms 13 - 14,16,45,59,74 - 76
alias 49,51,58
annotations 13 - 14,16 - 17,43,71,75 - 76
arrange 18

B

baud rate 4,39
built-in administrator account 11,20

C

cascade 18
change password 25,27

clock 15
color 43 - 44,56
column width 82,89
COM port 4,39
comma-separated values 81
commit 62,64,69
communications 38 - 39,45
compact database 17,95
configuration file 12,36 - 38,46,51 - 52
conventions 1
create account 21,28
create password 24

D

data points 13 - 14,16,59,71,75
database 17
Datalog menu 15
date 15,58,64,68,72,83,90
decimal places 41,85,91
default configuration file 36 - 37
default settings 14,17,20,35
delayed start 45,51,57
download 13 - 14,17,20,67 - 68

E

edit annotation 17,77
end log session 45,51
Excel 2
export 13 - 15,20,38,80
Export Fields 82

F

features 1 - 2,13,19