USER GUIDE

SVP- Secure System

MadgeTech

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MadgeTech 4
Secure Software

Software Manual

MADGETECH
WE BUILD DATA LOGGERS

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Introduction

Compact, accurate and affordable; MadgeTech data loggers can measure and record data at many user-specified intervals. The MadgeTech 4 Secure Data Logging Software requires no programming skills and enables the user to effortlessly select a reading interval, specify the device's ID and initiate the start of data collection.

In addition, all data can be saved in a format easily read by exporting the data to a Microsoft Excel® spreadsheet. MadgeTech produces data loggers that are accurate, low-cost, easy-to-use products that integrate easily into the user's working environment. To better understand a customer's needs and to accommodate any requests, MadgeTech welcomes and appreciates any feedback.

Thank you for choosing MadgeTech for all of your data logging needs.

Software Overview

The MadgeTech 4 Secure Software aids customers in compliance with 21 CFR Part 11 requirements. The software ensures standards in which electronic files are considered equivalent to paper records, saving time and effort. MadgeTech 4 Secure Software contains criteria such as electronic signatures, access codes, secure data files, and an audit trail which meet the requirements of 21 CFR Part 11 and help provide data integrity.

IQ/OQ/PQ protocols are included with the purchase of the MadgeTech 4 Secure Software to validate that the software has been installed and is operating correctly. On-site support is available for IQ/OQ/PQ implementation and so ware training.

The layout of the MadgeTech 4 Secure Software is similar to the MadgeTech 4 Standard Software, allowing users to easily learn the additional features.

Getting Started

System Requirements

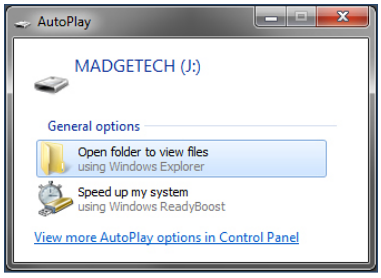
MadgeTech 4 Secure Software requires an IBM or compatible PC with the following:

- **PC-compatible Pentium(*R*)-class system**
- **Windows XP SP3 or later**
- **Color SVGA monitor (*1024 x 768 resolution*)**
- **2GB (*or more*) RAM**
- **At least 30MB free hard disk space (*for installation*)**
- **CD-ROM (*for installation media*)**
- **Available 9 pin male serial (*COM*) port (*for serial logger interface cable*)**
- **Available USB port (*for USB logger interface cable*)**

(Note: Although the software is designed to work with the Windows Operating Systems listed above, MadgeTech cannot guarantee operation on OS's no longer supported by Microsoft Support Life Cycle Policy.)

MAKE SURE NO USB INTERFACES ARE PLUGGED IN UNTIL THE FULL SOFTWARE INSTALLATION IS COMPLETE

Software Installation



MadgeTech 4 Secure Software can be installed from the provided MadgeTech CD or USB Drive.

1. To begin installation, insert the CD or USB Drive labeled **MadgeTech 4 Secure Version 4.X.X** into an available USB port. After a few moments an **AutoPlay** box will open. *(shown right)*
2. In the **AutoPlay** box, click **Open folder to view files** to view the contents of the CD or USB Drive.
3. In the case that the **AutoPlay** is disabled, manually browse to the MadgeTech CD or USB Drive by clicking on the **Start** button or **Windows Icon**, navigate to **Computer** and double click the drive, **MadgeTech,** to see the contents.

Double-click the **autorun.exe** *(application)* to launch the **MadgeTech 4 Secure Installer Options**.

The MadgeTech installer options screen *(shown right)* will launch. You have the option of:

- **Installing MadgeTech 4 Secure Software**
- **Installing USB Interface Drivers**
- **Installing .Net 4.0 Framework**

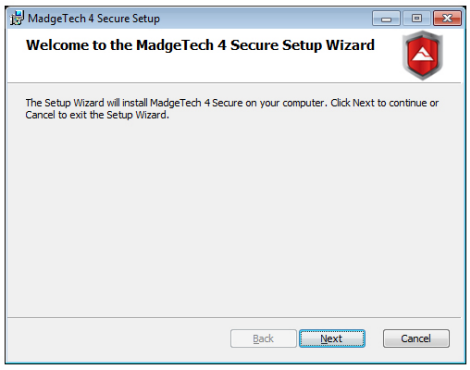
Installing the .Net 4.0 Framework

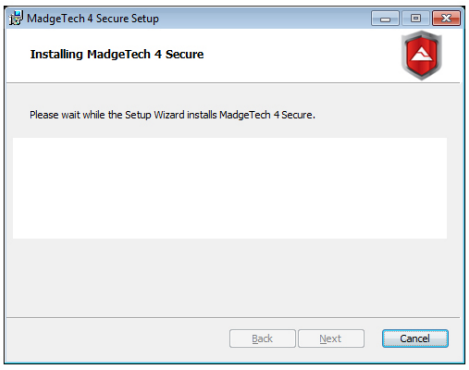
The MadgeTech 4 Secure Software requires the **.Net 4.0 Framework** to be installed on the intended PC. The Windows 8 and Windows 10 operating system comes with the **4.5 .Net Framework** already installed. If the **.Net 4.0 Framework** has not been installed on the PC, click the **Install .Net 4.0 Framework** option and walk through the wizard installation steps.

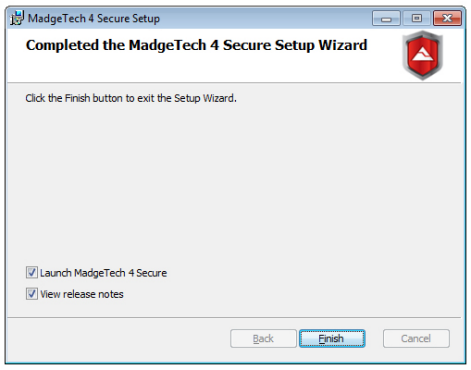
If the .Net 4.0 Framework has already been installed and you attempt to run the Install .Net 4.0 Framework, a window asking to Repair or Remove the .Net 4.0 Framework will appear. It is recommended to select the Cancel button when this page appears.

Installing MadgeTech 4 Secure Software

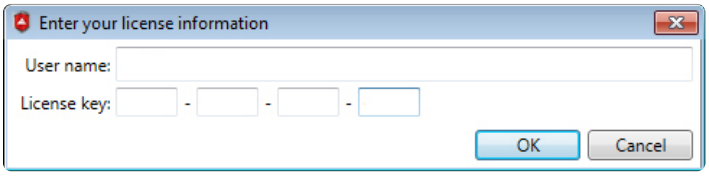
After the **.Net 4.0 Framework** installation has been confirmed, click the **Install MadgeTech Software** option. Select your language when prompted, then the Installation Wizard will walk through the installation steps to install the software. The following are examples of the installation windows:



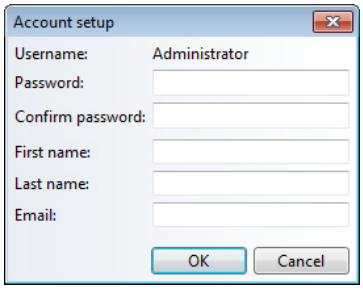


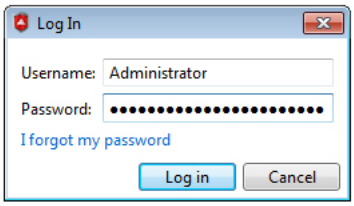


The **MadgeTech 4 Secure Software** installation is now complete. When launching the software for the first time, you will be prompted to fill in the **User name** and **License key** included with your IQ/OQ/PQ Workbook.



You will then be prompted to setup an Administrator account.





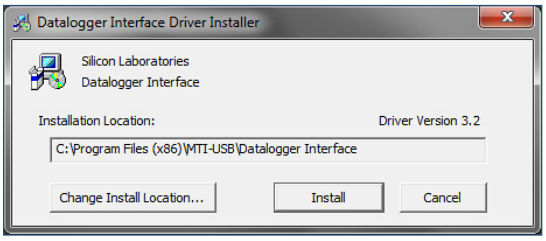
Password will not be visible onscreen

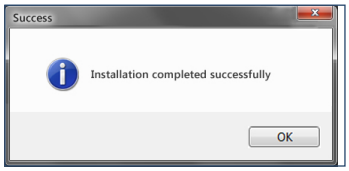
Installing the USB Interface Drivers

The USB interface drivers can easily be installed on the PC if they are not already available and running. From the **MadgeTech Installer Options** page, click **Install USB Interface Drivers**. *(shown right)*

The **Install USB Interface Drivers** options will install Windows device drivers for the **MadgeTech USB interface cable**.

Click **Install USB Interface Drivers** from the install screen. The following dialog box will appear when the USB interface drivers have been successfully installed.

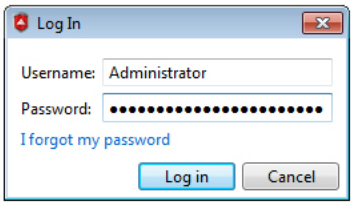




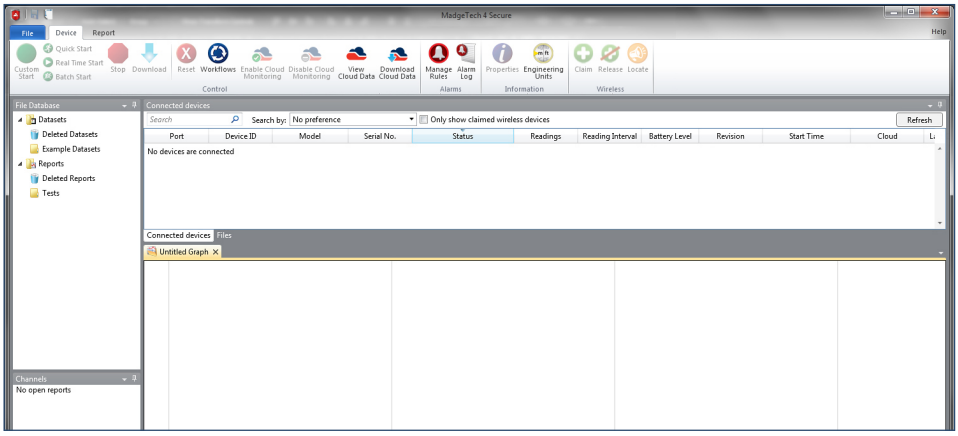
Starting the Software

To begin, launch the software by simply double clicking the desktop icon, clicking the icon in the **Quick Launch** toolbar, or clicking the icon in the MadgeTech folder within **All Programs** in the **Start Menu**.

Users will be asked to log in every time the software is started.



Password will not be visible onscreen



Logging Out of the Software

To log out of the software:

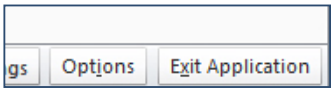
1. Click the **File tab**.
2. Click the **Log out** button.

Shutting Down the Software

There are a few different ways to shut down the software.

Shut Down: File Menu

If the current report has been saved, shutting down the software by using the **File** menu will keep the report settings set during that session. If the current report has unsaved report settings or dataset, the software will prompt the user to save before shutting down.



To shut down the software using the file menu:

1. Click the **File tab**.
2. Click the **Exit Application** button in the bottom right corner of the menu.

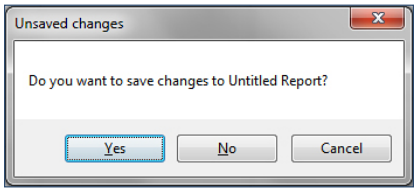
Shut Down: X Button

If the current report has been saved, shutting down the software by clicking the X button will keep the report settings set during that session. If the current report has unsaved report settings or dataset, the software will prompt the user to save before shutting down.

To shut down the software using the X button:

1. Click the **X** button in the top right hand corner of the software screen.

Shut Down: Keyboard Shortcut



To shut down the software using the keyboard shortcut:

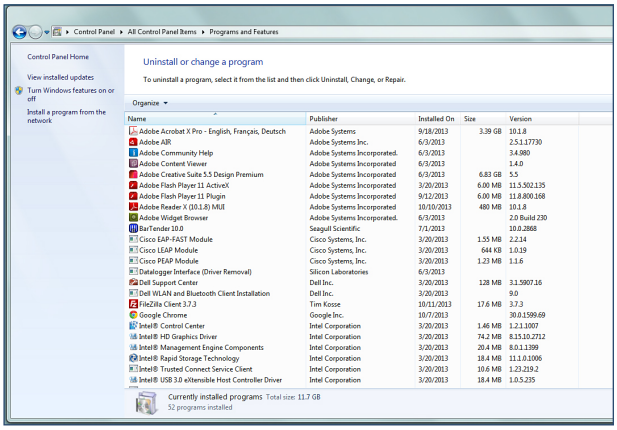
1. Simultaneously press **Alt+F4** on the keyboard.
2. If the current report has unsaved report settings or dataset, the software will prompt the user to save before shutting down.

Uninstalling the Software

Uninstalling the MadgeTech 4 Secure Software is easy and can be done through the operating system on the user's computer.

To uninstall the MadgeTech 4 Secure Software:

1. Click the **Start menu**.
2. Navigate to and select **Control Panel**.
3. Navigate to and select **Programs and Features** to display a list of programs currently installed. *(shown right)*



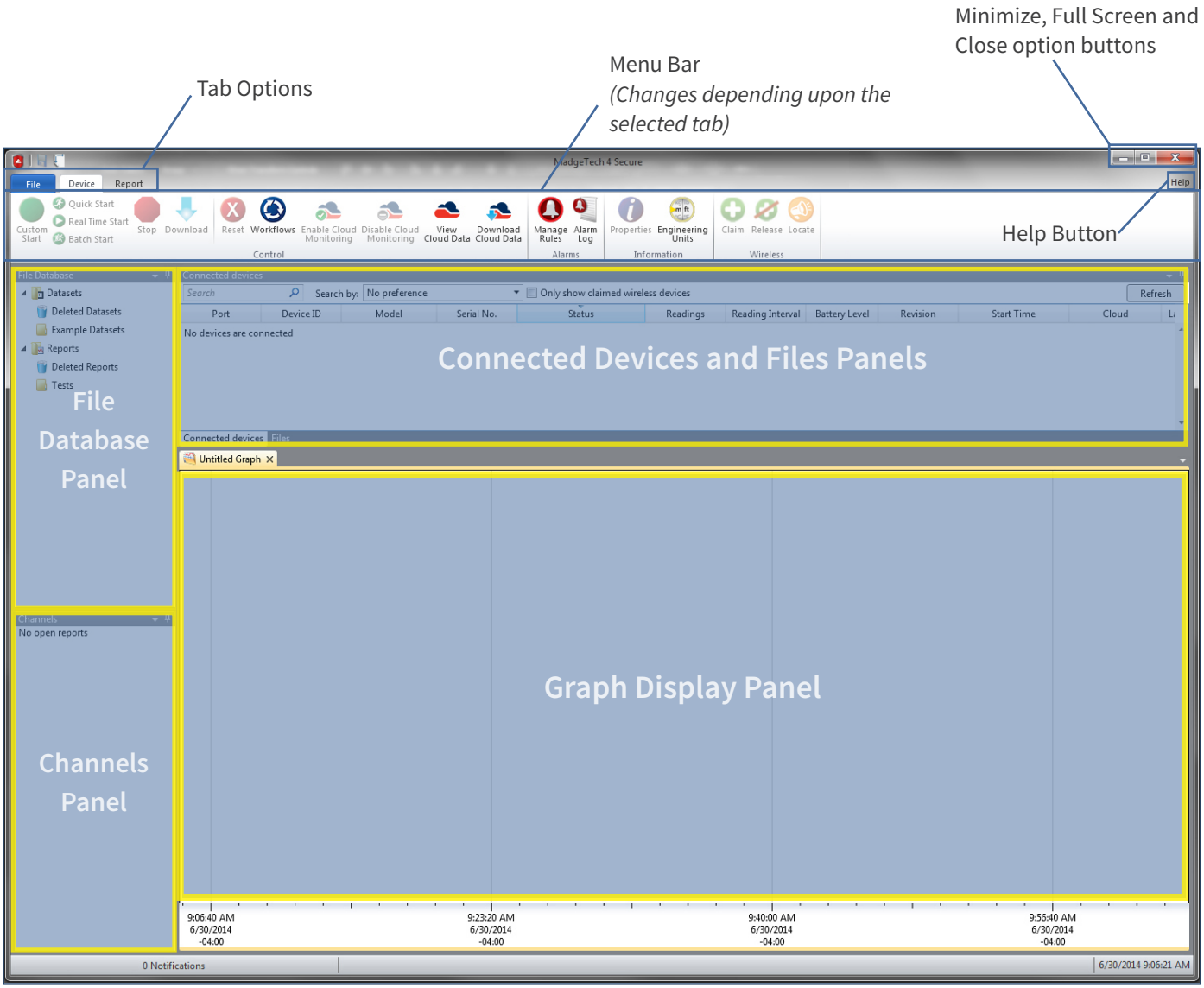
Programs and Features screen

Use the scroll bar to locate **MadgeTech 4 Secure** in the list. Then right-click the program within the list and select **Uninstall**.

Click **Yes** to uninstall the software. Click **No** to keep the software and cancel the action.

Software Menus and Navigation

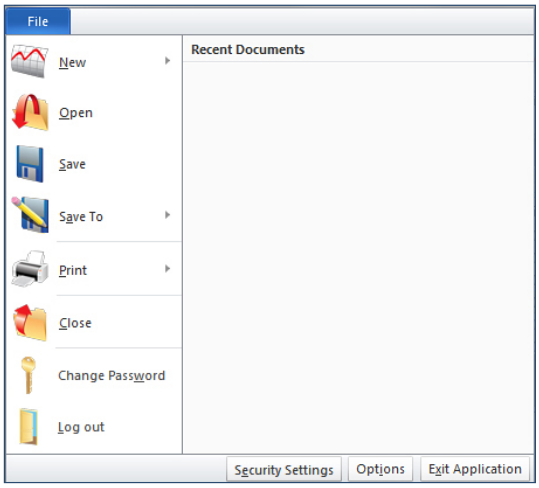
Each section of the software will be explained briefly in the following pages. Please refer to the software **Help** menu for more information or troubleshooting.



The File Menu

Within the first upper left tab titled **File**, there are many different options that appear. Below is a brief description of every item.

- **New**: Creates a new blank report.
- **Open**: Opens a report saved outside the software.
- **Save**: Saves the file to the file database.
- **Save To**: Saves reports as an MTFF file.
- **Print**: Prints the selected open report.
- **Close**: Closes the selected open report.
- **Change Password**: Changes the account password.
- **Log out**: Logs the user out of the software.
- **Recent Documents**: The side bar will show any recent documents that have been opened or saved.
- **Security Settings**: Many security settings can be managed and edited here.
- **Options**: Many software settings and defaults can be managed and edited here.
- **Exit Application**: Closes the software.

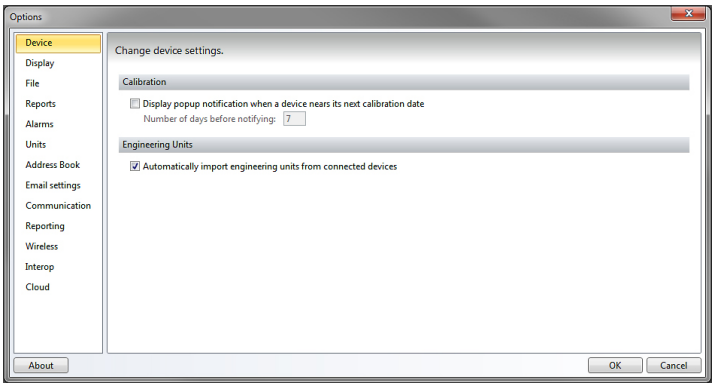


File Tab

The Options Menu

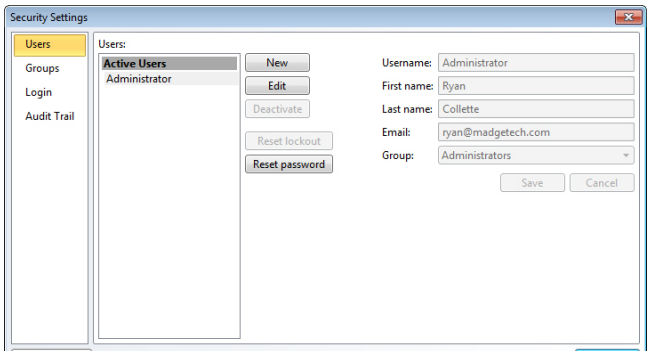
The **Options** button, located at the bottom right section of the **File** tab, offers a variety of options that affect the appearance and default settings of the software.

- **Device**: Change device settings of a logger in regards to calibration notifications and importing engineering units from the currently connected devices.
- **Display**: Edit the default settings when the software opens.
  - **Page display** allows the user to choose what measurement the page display can be: Inches, Millimeters or Centimeters.
  - **Viewing data** allows the user to edit the time format and channel grouping.
  - **Cooling flags** allows the user to choose the default cooling flags that can be displayed.
  - The **Layout** section allows the user to edit the ability to minimize to the system tray, the overall software color scheme, and resetting the screen layout.
- **File**: Change how files are imported and where the preferences and file database are located.
- **Reports**: Customize default report properties.
- **Alarm**: Configure pre-defined comments when acknowledging alarms.
- **Units**: Change the default colors for the various unit types.
- **Address Book**: Manage the contacts within the software.
- **Email Settings**: Manage the server address, port and email authentication settings.
- **Communications**: Configure and display detected interfaces.
- **Reporting**: Change the software problem and usage reporting preferences.
- **Wireless**: Configure the timeouts of wireless timeouts.
- **Interop**: Software built using the Windows Communication Foundation *(WCF)* can retrieve real time readings from data loggers connected to the MadgeTech 4 Secure Software.
- **Cloud:** Login and manage MadgeTech Services Cloud account.

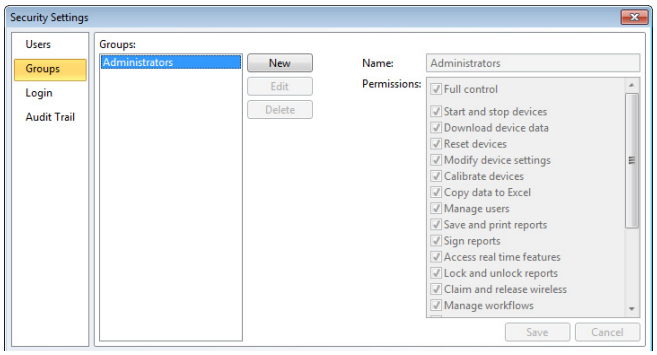


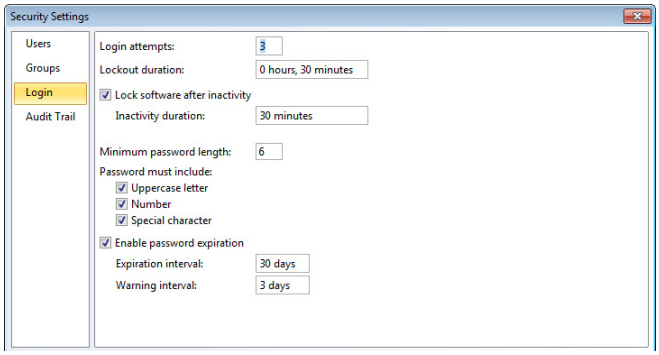
Security Settings

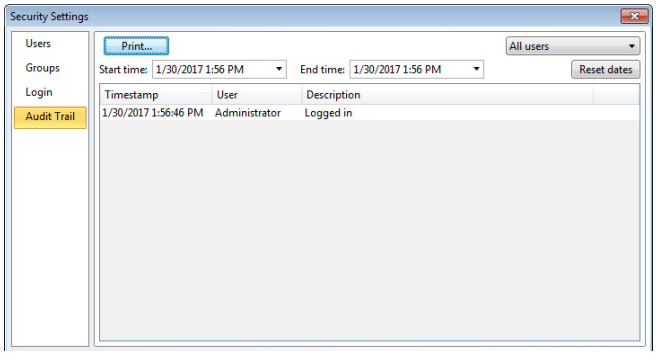
The **Security Settings** button, located at the bottom right section of the **File** tab, offers a variety of options that affect the security settings of the software.



- **Users**: Add new users or update existing users in the software.
- **Groups**: Users and Administrators can be assigned to Groups and can be easily maintained using a variety of permissions.
- **Login**: Adjust login setting including:
  - Login attempts
  - Lockout duration
  - Inactivity duration
  - Minimum password strength
  - Password expiration
- **Audit Trail**: An Audit Trail is kept automatically with information such as who has logged in and out, what files were downloaded, saved, printed etc. Each record is date and time stamped and includes the user information.
  Audit trails will be stored indefinitely and can not be altered.







Adding a New User

1. From the Security Settings window, select **Users**.
2. Click **New**.
3. Fill in the following required fields:
   - **Username**
   - **First name**
   - **Last name**
   - **Email**
   - **Group**: Select the group you would like this user to be associated to.
4. Click **Save.**

Removing a User

1. From the Security Settings window, select **Users**.
2. Select the user within the **Users** list that you would like to remove.
3. Click **Deactivate**.
4. Confirm by removal by clicking **Yes**.

Creating a New Group

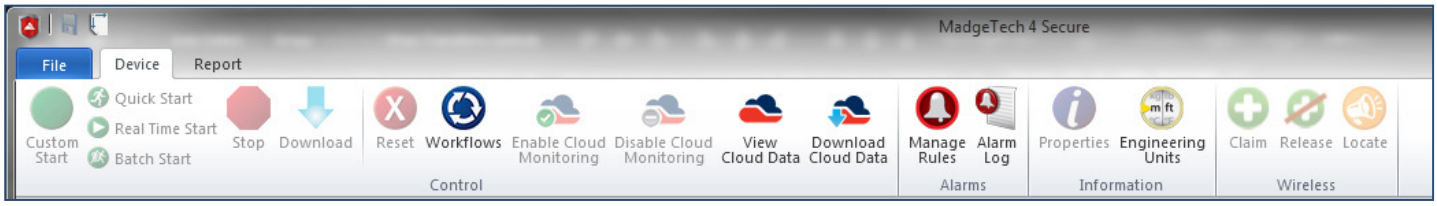
1. From the Security Settings window, select **Groups**.
2. Click **New**.
3. Fill in the **Name** of the Group.
4. Select the Permissions you would like to grant the Group by clicking the check boxes.
5. Click **Save**.

Deleting a Group

1. From the Security Settings window, select **Groups**.
2. Select the group within the **Groups** list that you would like to delete.
3. You must remove any users associated with this group before proceeding.
4. Click **Delete**.
5. Confirm by removal by clicking **Yes**.

The Device Menu

The **Device tab**, located at the top of the menu bar, contains all of the features for managing devices. Within this tab are four different sections: Control, Alarms, Information, and Wireless. Below is a list of commands and options found in the device menu.



Custom Start - Start the selected device(s) using custom settings.

Quick Start - Start the selected device(s) using the current settings.

Real Time Start - Start the selected device(s) in real time mode.

Batch Start - Automatically start devices of the same type as they're connected.

Stop - Stop the selected device(s).

Download - Download recorded data from the selected device(s).

Reset - Resets the selected device(s).

Workflows - Manage device automation workflows.

Enable Cloud Monitoring - Enables the data logger to be connected through the Cloud Software.

Disable Cloud Monitoring - Disconnects the data logger from the Cloud Software.

View Cloud Data - View cloud data through a web browser.

Download Cloud Data - Download cloud data as a CSV file.

Manage Rules - Manage real time alarm rules.

Alarm Log - Displays alarm notification history.

Properties - View the properties and settings of the selected device.

Engineering Units - Manage engineering units.

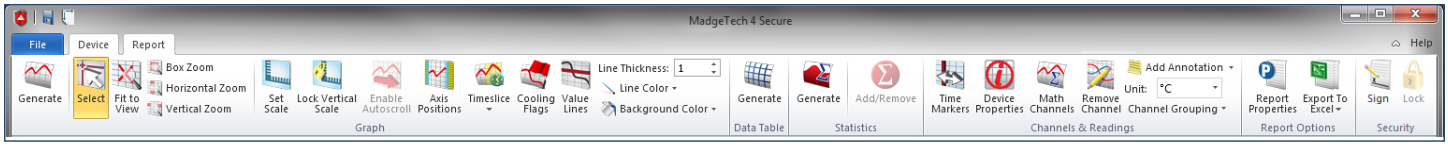
Claim - Add the selected wireless device(s) to the network.

Release - Remove the selected wireless device(s) from the network.

Locate - Find or identify a wireless device with an audible alarm.

The Report Menu

The **Report tab**, located at the top of the menu bar, contains all of the features and options for managing reports. Within this tab are five different sections: Graph, Data Table, Statistics, Channels & Readings, and Report Options. Below is a list of commands and options found in the report menu.



Generate - Generates a graph based on the current report, or a blank graph if no report is open.

Select - Change the cursor function to select data points.

Fit to View - Zoom out to fit all data in view.

Box Zoom - Change the cursor function to zoom in on a selected area.

Horizontal Zoom - Change the cursor function to zoom in on a selected length of time.

Vertical Zoom - Change the cursor function to zoom in on a selected unit range.

Set Scale - Set the scale of the graph.

Lock Vertical Scale - Lock the vertical scale of the graph.

Enable Autoscroll - Allow the graph to automatically scroll along the time axis as real time data points are added.

Axis Positions - Change which side of the graph each axis is positioned.

Timeslice - Manage timeslice options.

Cooling Flags - Set annotations for multiple temperature cooling points.

Value Lines - Horizontal lines that are fixed for Minimum, Maximum & Average Line values.

Line Thickness - Changes the thickness of the value lines in the graph.

Line Color - Changes the color of the value lines in the graph.

Background Color - Changes the background color of the graph.

Generate - Generate a new grid based on the current report, or a blank grid if no report is open.

Generate - Generate a new statistics view based on the current report, or a blank view if no report is open.

Add/Remove - Manage custom statistic information.

Time Markers - Allows graphs to be displayed with cycle duration properties.

Device Properties - View the properties of the selected channel's associated device.

Math Channels - Manage channels that generate values based on specified calculations.

Remove Channels - Remove the selected channel from the current report.

Add Annotation - Add a comment to the graph.

Unit - Change the unit for the selected channel.

Channel Grouping - Change how the channels are grouped; Serial Number, Device ID and Device name.

Report Properties - View details about the current report.

Export to Excel® - Copy the data of the current report to Microsoft Excel®.

Sign - Include an electronic signature on a report.

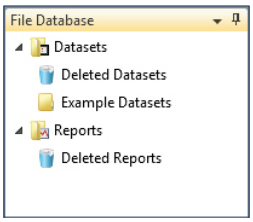
Lock - Lock a report to prevent any changes from being made.

Screen Navigation

The MadgeTech 4 Secure Software offers a display with nearly limitless report capabilities and customization features. Users now have the opportunity to arrange the display screen to suit specific needs such as size, placement, and information accessibility.

File Database

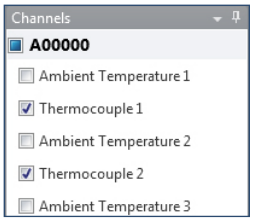
The **File Database** panel contains several different folders where reports can be saved or deleted. Users can also create new folders to help organize datasets and reports.



File Database Panel

Channels Panel

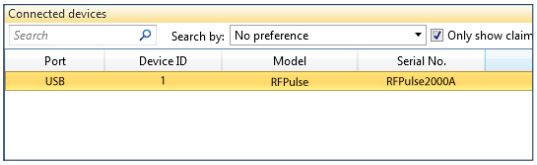
The **Channels** panel displays the different panels within the current open report. If no report is open, the panel will be blank.



Channels Panel

Connected Devices

The **Connected Devices** panel displays a list of devices that are connected to the PC or available through wireless transmission. A device in this panel must be selected in order to enable any device specific features.

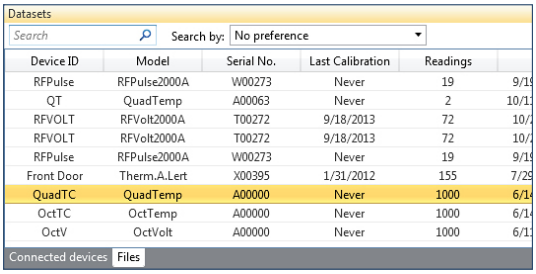


Connected Devices Panel

Files

The **Files** panel displays the contents of the folder selected in the **File Database** panel.

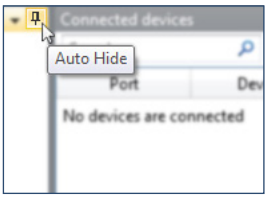
Users can toggle between the **Files** panel and **Connected Devices** panel depending on their intended use of the software at that time.



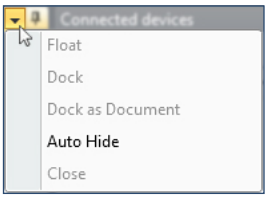
Files Panel

On each of the panels header bar there is a **downward pointing arrow** icon and a **pin** icon. Clicking on the pin icon will cause the panel to auto hide and become a tab in the left margin. To view the contents when the panel is hidden, hover the mouse over the hidden panel's header. A context menu is available with the following options:

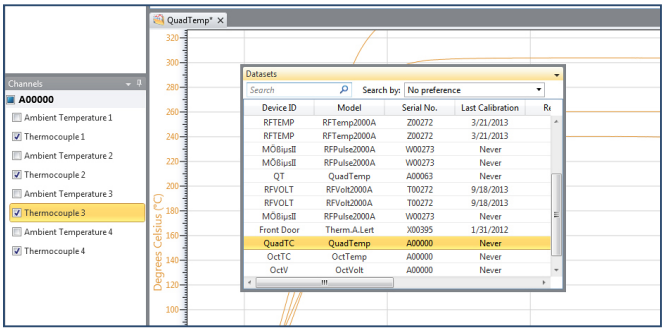
- **Float**: This allows the selected panel to **Float** and can be moved anywhere on the screen. A panel can also float by clicking on its header, holding and dragging it anywhere on the screen, then releasing it. *(shown below)*
- **Dock:** This option locks the selected panel in its original position.
- **Dock As Document:** This option adds a panel to the report tab group.
- **Auto Hide**: This option hides the panel so only the header is visible.
- **Close**: This option closes the panel.



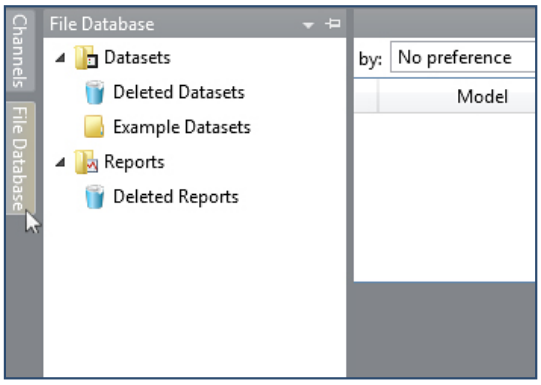
Hovering over the pin icon will allow the panel to be hidden



Hovering over the arrow icon will show a variety of options

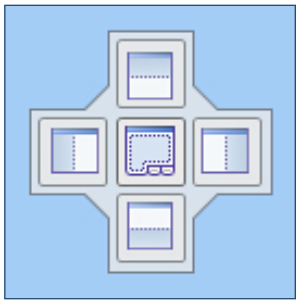


Floating Datasets Panel



Hovering over a hidden panel will display the contents of that panel. Note: the pin icon now points to the left.

Rearranging Panels



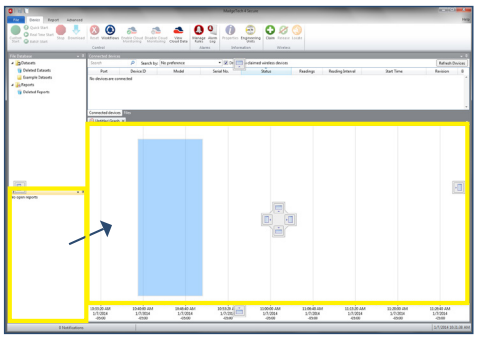
Optional Placement of the panels

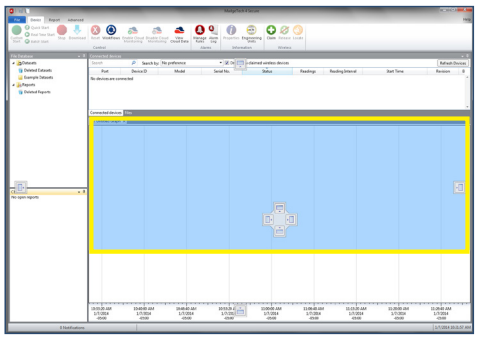
In addition to the hiding and floating panel options, panels can also be manually rearranged to meet user preferences.

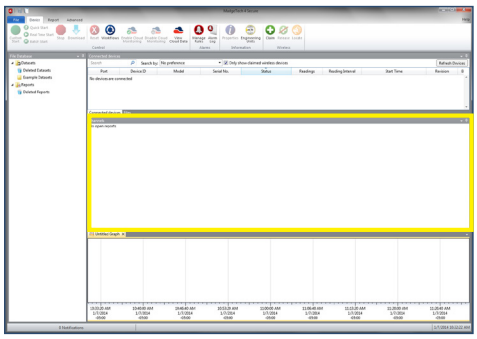
To rearrange a panel:

1. Click and hold the header of the panel.
2. Move the mouse in the direction of where the panel's new location will be. A highlighted blue section will move with the mouse to act as a preview for the panel. Continue to move the mouse until the following screen appears.

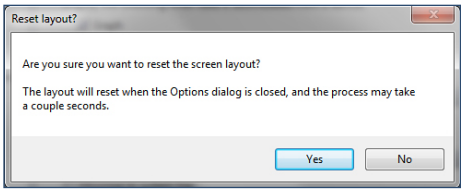
Move the mouse to the desired option, then release the mouse. The top option will place the selected panel above the panel in which the image appeared in. The right option will place the selected panel to the right of that panel, the left option will place the selected panel to the left of that panel, the bottom option will place the selected panel below that panel, and the center option will place the selected panel on top of that panel. *(Note: Not all panels support the center option.)* Below are sample screens of the steps to rearrange the **Channels** panel. Now the **Channels** panel is above the chart window instead of to the left as it was originally.







Restoring Default Windows



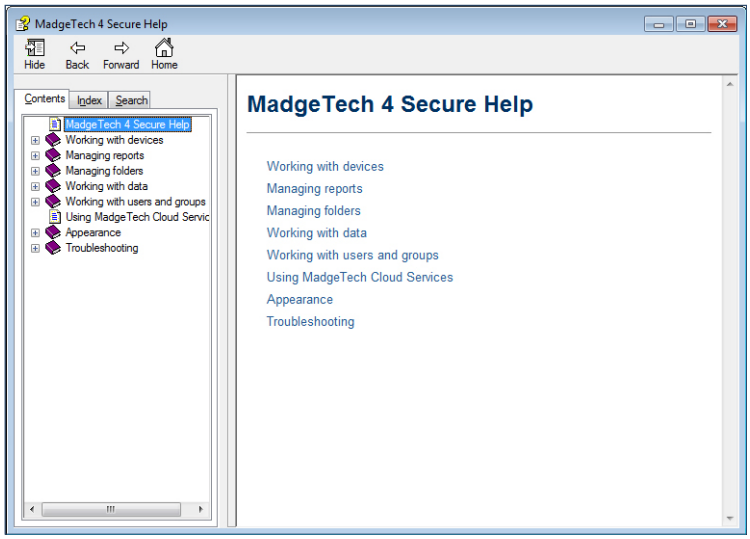
The software has an easy way to restore the panels of the software to the default screen layout.

To restore default windows:

1. Click the **File** tab and then click **Options**.
2. Click the **Display** tab.
3. Scroll to the bottom and select **Reset screen layout**. The software will display a prompt to confirm the request. Select **Yes**.
4. It will return to the options panel, select **OK** to apply the changes. Any unsaved data will also be prompted by the software to be saved.
5. If the report is open and has not been saved, the reset screen layout will not be applied.

The Help Menu

The MadgeTech 4 Secure Software offers a comprehensive help menu to answer any questions encountered while using the MadgeTech 4 Secure Software. Users have the ability to search directly using key words or utilize the preformulated categories to navigate and find a solution to the problem at hand.

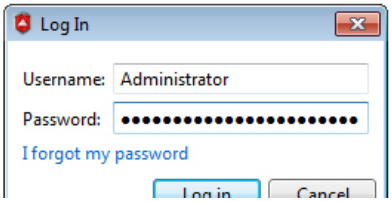


- Using the **Contents** portion of the help menu, there are various sections that cover the most common topics.
    - MadgeTech 4 Secure Help
    - Working with devices
    - Managing reports
    - Managing folders
    - Working with data
    - Working with users and groups
    - Using MadgeTech Cloud Services
    - Appearance
    - Troubleshooting
- The **Index** portion of the help menu allows searching for one word.
- The **Search** option of the help menu allows the user to insert a question or phrase.

For more details about the help section, refer to **Managing Data, Folders and Reports**, **Maintenance**, and **Troubleshooting** sections of the manual.

Software Security and Audit Trail

Software Security



Users will be required to log in each time the software is started.
Password will not be visible onscreen. Account administrators have the ability to manage user privileges including account activation, deactivation and password resets. Changes made to account will be visible in audit trail.

Administrators will enter username, first name, last name, and unique email address to create new users. A temporary password
will be sent to the new user, which they will be required to change upon login.
Users will also need to login after lockout duration, set by account administrator.
Please refer to the chart below for specific permissions.

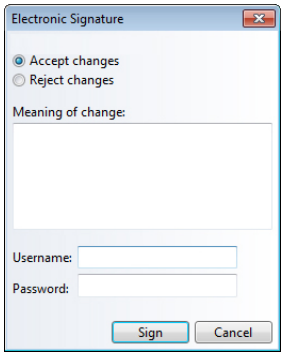
Permission Title	Functionality
Full Control	Users have access to all features and options in the software.
Start and stop	User can start (custom/quick) and stop devices.
Download	User can download data from devices.
Reset	User can reset devices.
Modify settings	User can edit device properties and change engineering units of devices (the Device Properties screen will be accessible regardless, but options will be disabled unless this permission is enabled).
Calibrate	Users can calibrate devices.
Copy to Excel	Users can copy data to Excel.
Manage users	Users can access the Security Settings and Options screens.
Save and print	Users can save and print reports. If this permission is disabled, save prompt won't appear when closing a modified report.
Sign	Users can sign reports.
Real Time	Users can start devices in real time and access alarm rules.
Lock and unlock	Users can lock and unlock reports.
Claim and release	Users can claim and release wireless devices.
Manage Workflows	Users can add, edit, delete, duplicate, enable and disable workflows.
Enable and Disable Workflows	Users can enable and disable workflows.
Manually run work-flows	Users can run workflows manually
Acknowledge alarms	Users can acknowledge alarm notifications.
Dismiss alarms	Users can dismiss alarm notifications.
Manage cloud options	Users can log in and out of cloud services
Enable and disable cloud monitoring	Users can enable and disable cloud monitoring for devices.
Move and delete datasets	Users can move, delete, and restore datasets and dataset folders.
Move and delete reports	Users can move, delete, and restore reports and report folders.

Report Security

Reports require username and password in order to be signed. Password will not be visible onscreen.

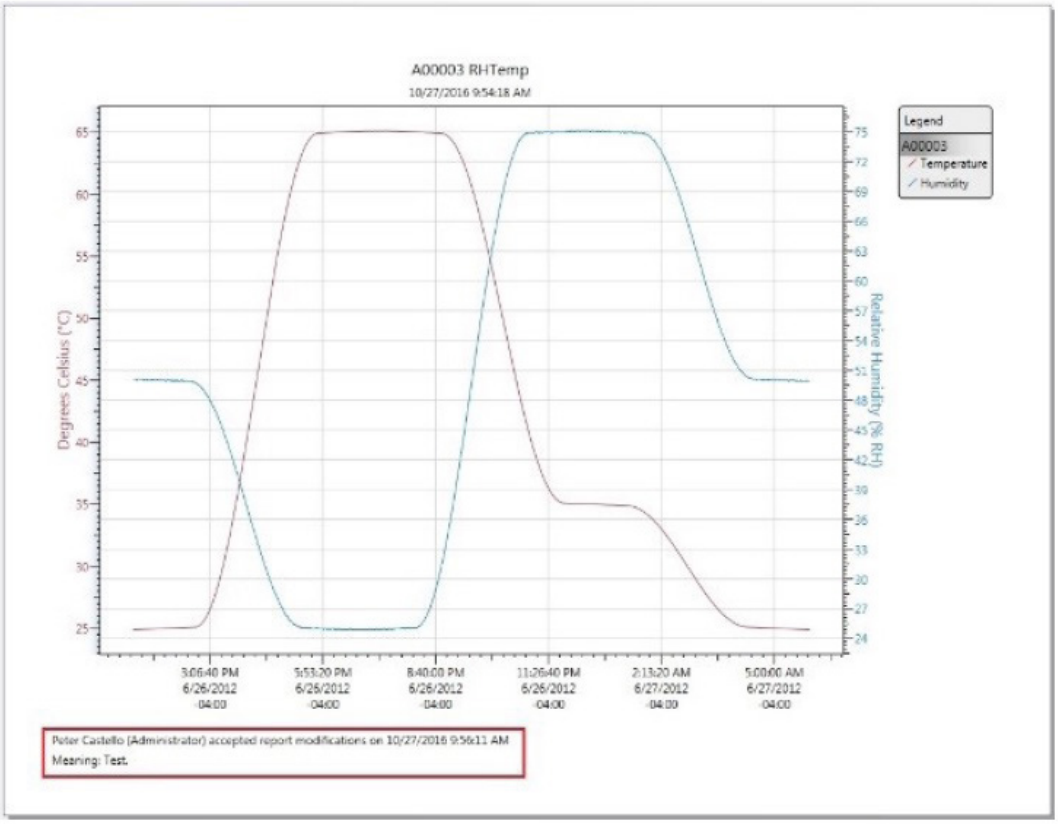
Once a report has been signed, the signature will appear on the report including:

- Name of signer
- Date and time stamp of signing
- Meaning of Change



User will be required to enter username and password to sign a report

Reports can be backed up, restored, archived and retrieved from both the software database and computer. For more information, please refer to page 17. Report signatures cannot be removed.



Signed reports can be locked so that additional alterations can not be made without the password set by the user locking the report.

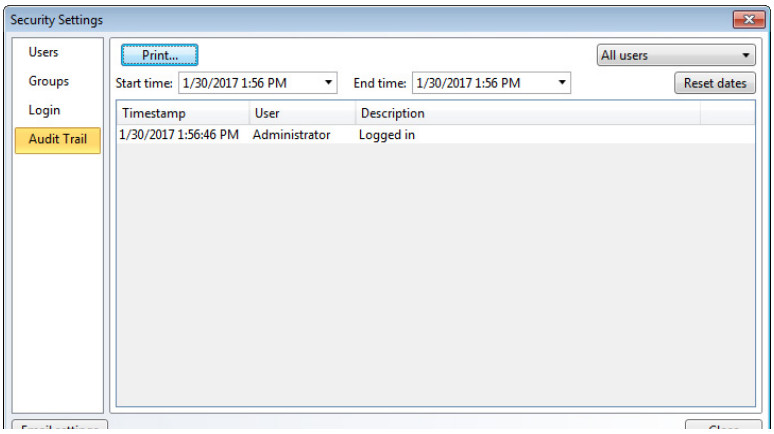
Password must be entered to alter report

For more information on locking and unlocking a report, see page 51.

Audit Trail

The audit trail records every action that a user performs when the software is open. It will record when a device is started, stopped, and downloaded through the software.

The audit trail is automatically created when the software is opened.



The audit trail will also record user information such as administrator password reset reset, changing group assignments and roles, although, specific group names and roles will not be recorded.

All electronic records, including audit trail and signatures, cannot be edited or deleted and are stored in the software indefinitely.

Audit trail is stored in the file location: C:\Users\USERNAME\AppData\Local\MadgeTech\MadgeTech 4\. This folder can be manually backed up and archived as an added measure of protection.

Working With Devices

In the MadgeTech 4 Secure Software, data can be viewed in graphical or tabular formats as well as summary and statistics views, which are available for further analysis. The software features exporting to **Microsoft Excel®**, data annotation, digital calibration and more.

Connecting and Disconnecting a Device

Each data logger must be connected to the PC to allow communication with the device. The MadgeTech wireless data logger series can communicate wirelessly using a MadgeTech Wireless Transceiver.

The following steps should be used for connecting and disconnecting data loggers using the appropriate interface cable for that device.

To connect a device:

1. Plug the interface cable into an available **COM** or **USB** port on the computer.
2. Plug the stereo jack end of the interface cable into the device, or insert the data logger into the interface docking station. *(Note: The connection from the interface cable to the data logger varies depending on the interface cable and data logger being used.)*
3. Once the data logger is connected to the PC, it will appear in the **Connected devices** panel.

To disconnect a device:

1. Unplug the stereo plug end of the interface cable from the data logger, or remove the data logger from the interface docking station. *(Note: Do not disconnect the data logger while device settings are being applied.)*

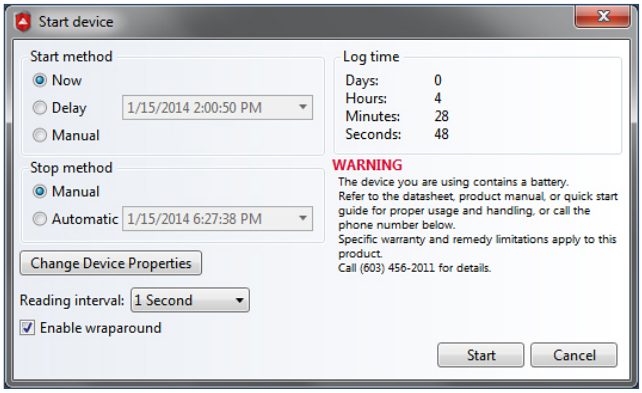
Start a Device

When starting a device to record data, several options and start methods are available. Start settings can be specified before deploying the device. Choose **Custom Start** to select or modify logging options or the devices can be started using the current settings by selecting either **Real Time Start** or **Batch Start**. The **Real Time Start** option allows the devices to report readings back to the central PC instantly. The **Batch Start** option allows devices of the same model to be programmed with the same custom start settings.

Multiple devices can be selected by holding the **Ctrl** or **Shift key**, selecting additional devices, or pressing the arrow keys. However, the devices selected must all be the same model in order for the start options to become available.

Custom Start

When starting a device using custom settings, the user can specify when the device starts by choosing to start immediately or having a delayed start and then a reading interval, which will vary depending on the device and application. Additional options, such as the stop method and enabling memory wraparound, *(overwriting the internal memory when the reading capacity is reached)* are available depending on the properties of the selected device. *(shown right)*



Immediate Start

To start a device using custom settings for an immediate start:

1. In the **Connected devices** panel, select the device to start. The device should be highlighted.
2. On the **Device** tab, in the **Control** group, click **Custom Start**. Users can also right-click on the device and select **Start**, then **Custom Start** in the context menu.
3. Specify all desired settings.
4. Click **Start**.
5. When the device has been started, the status in the **Connected devices** panel will read **Running**.

Manual and Delay Start

Depending on the device, the user can manually start a data logger or perform a delayed start using the **Custom Start** option.

Manual Start

A data logger with the manual start function needs to be programmed in order for a **Manual Start** to be performed.

To manually start a device:

1. In the **Connected devices** panel, select the device. Confirm that the intended device is highlighted.
2. On the **Device** tab, in the **Control** group, click **Custom Start**. Users can also right-click on the device and select **Start**, and then **Custom Start** in the context menu.
3. Under the **Start method** section within the **Start device** screen, select the **Manual** radio button.
4. Choose any additional necessary start settings *(such as reading interval, memory wraparound, stop method, etc.)*.
5. Click the **Start** button. The **Start device** box will close and the status column in the **Connected devices** panel will read, **Waiting for manual start**.
6. To begin recording, please refer to the manual start method in the product information card provided with the device.

Delay Start

When using the **Delay Start** method, the user can decide when the data logger will begin recording by setting a time in the **Custom Start** window. This method does not require the user to be present to start the device, as it will automatically start at the selected time.

1. In the **Connected devices** panel, select the intended device. Confirm that the intended device is highlighted.
2. On the **Device** tab, in the **Control** group, click **Custom Start**. Users can also right-click on the device and select **Start**, and then **Custom Start** in the context menu.
3. Under the **Start method** section within the **Start device** screen, select the **Delay** radio button.
4. Click the dropdown menu beside the **Delay** radio button and choose the intended start date and time.
5. Choose any other necessary start settings *(such as reading interval, memory wraparound, stop method, etc.)*
6. Click the **Start** button.
7. The status column in the **Connected devices** panel will read **Waiting to start**.
8. Once the selected start time has passed, click the **Refresh Devices** button if the device does not appear. *(Note: A wireless device will update on its own, otherwise the duration of the refresh will be long.)*
9. The status column in the **Connected devices** panel will read **Running**.

Quick Start

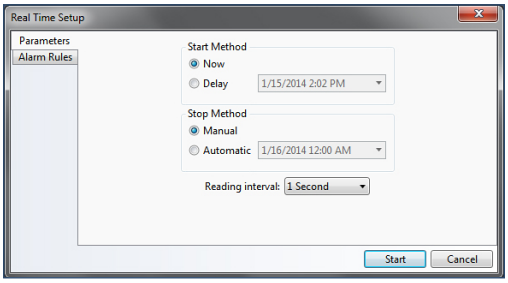
When a device is started using the **Quick Start** option, it will start immediately using the most recent **Custom Start** settings. It is important to make sure that the selected devices are properly configured **before** using **Quick Start**.

1. In the **Connected Devices** panel, select the intended device. Confirm that the intended device is highlighted.
2. On the **Device** tab, in the **Control** group, click **Quick Start**. Users can also right-click on the device and select **Start**, then **Quick Start** in the context menu.
3. When the device has properly been started, its status in the **Connected devices** panel will read **Running**.

Real Time Start

When a device is started in **Real Time**, reading data is transferred directly to the software in the form of a dataset and stored in the software's internal database. The data can be viewed as a report at any time and will automatically update as new readings are received. Wireless and non-wireless devices function differently when started in **Real Time**.

1. In the **Connected devices** panel, select the intended device. Confirm that the intended device is highlighted.
2. On the **Device** tab, in the **Control** group, click **Real Time Start**. Users can also right-click on the device and select **Start**, and then **Real Time Start** in the context menu.
3. Specify device start and stop preferences, as well as the reading interval in the **Parameters** tab. **Alarm rules** can be configured in the **Alarm Rules** tab. *(shown right)* *(Note: For more information about adding, changing or removing alarm rules, please refer to **Alarms** section of this manual.)*
4. Click **Start** button.
5. If **Display a graph when Real Time logging begins** is checked in the **Display** tab of the **Options** dialog, a graph will automatically appear containing the real time data of the devices selected.
6. When the device has properly been started its status in the **Connected devices** panel will read **Real Time**.



A device can also be started in Real Time when it is already running:

Under certain conditions a device can be started in **Real Time** when it is already running, if it is not a wireless device. The device must be physically plugged into the computer, wraparound must be disabled and the reading interval must be 2 seconds or slower.

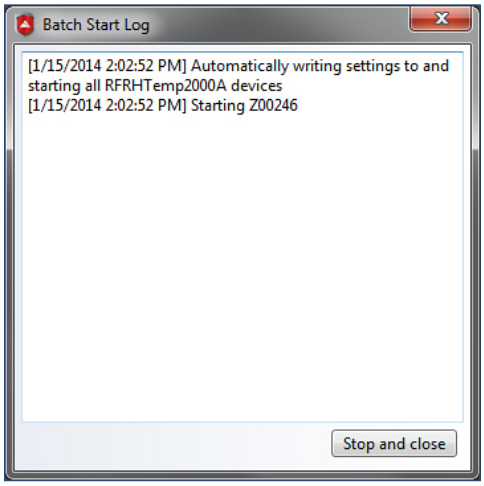
1. In the **Connected devices** panel, select the **Running device** requiring a **Real Time** start option. Its status will read **Running**.
2. In the **Device** tab, in the **Control** group, click **Real Time Start**. *(Note: The status will now read Real Time.)*
3. In order to stop the device, **Stop** must be clicked twice.

Batch Start

When using the **Batch Start** option, one device is programmed and will specify the settings that other similar devices will use. Selecting multiple devices before beginning a batch start is not required. *(Note: Only devices of the same model and firmware can be Batch Started together.)*

A **Batch Start** is useful when a user has many duplicate or same model devices that need to be started with the same settings. The **Batch Start** option allows the user to start all of the devices with the push of one button, instead of individually changing the settings and starting each device individually, saving valuable time and effort.

The **Batch Start** will have the same start device settings screen as the **Custom Start** option. Additionally, after the **Start** button is clicked, a **Batch Start Log** dialog box will appear to inform the user when each device is starting and when it actually has been started. *(shown right)*



To begin a Batch Start:

1. In the **Connected devices** panel, select the intended device to be used as a basis for the **Batch Start**.
2. On the **Device** tab, in the **Control** group, click **Batch Start**. Users can also right-click on the device and select **Start**, then **Batch Start** in the context menu.
3. Configure settings and start the device that is plugged in by clicking **Start**.
4. Remove the first data logger from the docking station, then place the next data logger into the docking station. When the devices have properly been started their status in the **Connected devices** panel will read **Running**. Repeat this step until all of the intended devices have been started.

Any devices plugged into the PC that are the same model as the device used to configure the **Batch Start** will automatically start. Each device shown as **Started** or **Waiting to Start** can then be unplugged.

The device will begin recording data once it has been started. Depending on the stop method selected, the device will continue to collect data until manually stopped, it reaches memory capacity or it has reached the stop parameters chosen by the user. Once the device has been stopped, the data collected can be downloaded into a dataset and used to generate any type of report.

Stop a Device

When devices are currently recording data, running in **Real Time**, or waiting to start, users can choose to stop recording. Devices that are stopped will no longer record data until configured to start again. The stop methods available will vary by model, but can include: **Manual Stop**, **Automatic Stop**, and **Readings Stop**. These stop methods are designated when the device is started.

Multiple devices can be selected to stop by holding the **Ctrl** or **Shift key** and either selecting additional devices or pressing the arrow keys. All of the devices that have been selected will be highlighted in the **Connected devices** panel.

Manual Stop

The **Manual stop** option is convenient and easy to set up. There is no information that needs to be entered in comparison to the **Automatic** or **Readings Stop** methods. **Manual stop** is always available even when other stop methods are selected at startup.

To configure Manual Stop during startup:

1. In the **Custom Start** box, select the **Manual** radio button under the **Stop Method** section.

To manually stop a device:

1. In the **Connected devices** panel, select the intended device to stop.
2. On the **Device** tab, in the **Control** group, click **Stop**. Users can also right-click on the device and select **Stop** in the context menu. *(Note: With 101A data loggers, the Manual Stop option can enable a pushbutton stop if the Manual Start option is also selected.)*

If a device is both recording data and running in **Real Time**, **Stop** must be clicked twice in order to stop the device. Clicking **Stop** once will only stop the **Real Time** recording, selecting **Stop** the second time will stop the data from recording.

Automatic Stop

The **Automatic Stop** method is time dependent. Users can set a future point in time, to stop a logger from recording. The user does not need to manually stop the device, as it will stop automatically.

To configure the Automatic Stop method:

1. In the **Custom Start** box, select the **Automatic** radio button under the **Stop Method** section.
2. In the dropdown menu next to the **Automatic** radio button, select the time when the device should stop recording.
3. To confirm the device has stopped recording, click the **Refresh Devices** button in the **Connected devices** panel. Now the status column in the **Connected devices** panel will read **Stopped**.

Readings Stop Method

The **Readings Stop** method is dependent on the number of readings the device records. For example, if the duration of 20 is entered into the readings text box, the device will stop recording once it records 20 readings.

To configure the Readings Stop Method:

1. In the **Custom devices** box, select the **Readings radio** button under the **Stop Method** section.
2. In the text box next to the **Readings radio** button, enter the number of readings the data logger should record before stopping.
3. To confirm the number of readings have been recorded, click the **Refresh Devices** button in the **Connected devices** panel.
4. Now the status column in the **Connected devices** panel will read **Stopped** and the number of readings listed in the **Readings** column will match what was entered in the Start device box.

Downloading Data

When the data logger is recording data, it stores the readings in its internal memory. To view the data, it must be downloaded from the device and viewed as a graph, a data table, or statistics report in the MadgeTech 4 Secure Software. Downloaded data will remain stored on the device until the device is reset or restarted. *(Note: The MadgeTech 4 Secure Software will not download the same data more than once.)*

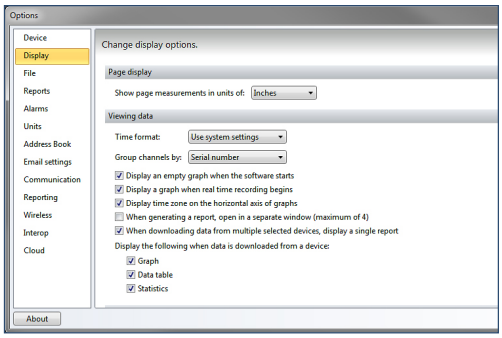
Download Data from a Device

To download data from a device:

1. In the **Connected devices** panel, select the intended device to download data from.
2. On the **Device** tab, in the **Control** group, click **Download**. Users can also right-click the device and select **Download** in the context menu.

Automatically Display Reports of Data that have just been Downloaded

The user can also choose to have reports automatically appear to display data that have just been downloaded.

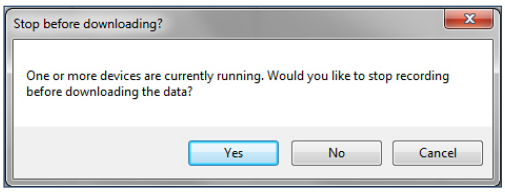


To configure the appearance of reports:

1. Click the **File** tab, then click **Options**.
2. From the **Options** screen, click **Display**.
3. In the **Viewing Data** section, select the check box next to each report type the user wants to automatically open when data is downloaded from a device.

Download While Recording

Certain devices have the ability to download data in the software while recording. The reading interval must be 2 seconds or slower, and the memory wraparound must be disabled.



To download data while the device is still recording:

1. In the **Connected devices** panel, select the intended device to download data from. Confirm the intended device has been selected by making sure the device is highlighted.
2. On the **Device** tab, in the **Control** group, click **Download**. To the right is an example of the following dialog box that will appear, asking to stop the device from recording.
3. Click **Yes** to stop the data logger and download the data. Click **No** to download the data and have the data logger continue to record. Click **Cancel** to neither stop the device nor download any data.
   Note: Once data has been downloaded from a data logger, it can not be backed up to the logger.

Reset a Device

When the data stored in a device is no longer needed or resetting the status of alarms and triggers is required, the device can be reset. If the device is currently recording, it will stop before resetting. Once a device is reset, the stored reading data cannot be recovered, so always confirm that all data is downloaded and saved before resetting the device.

To reset a device:

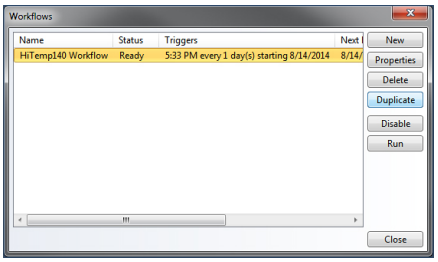
1. In the **Connected devices** panel, select the intended device to reset.
2. On the **Device** tab, in the **Control** group, click **Reset**. Users can also right-click the device and select **Reset** in the context menu.

Workflows

The Workflows feature allows the user to automate tasks to efficiently download data, create reports and more. A Workflow is a saved set of instructions that tell the software to perform tasks when specified conditions are met. Workflows can be scheduled to run at specific dates and times or when specific data loggers are connected to the PC.

(Note: The MadgeTech 4 Secure Software must be running for a scheduled Workflow to execute.)

Adding a Workflow



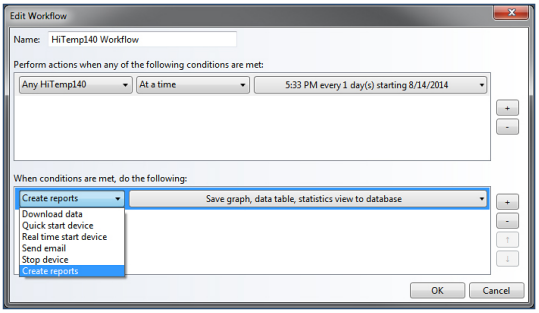
To add a workflow to the software:

1. On the **Device** tab, in the **Control** group, click the **Workflows** icon.
2. Select **New** on the right hand side of the window, and do the following:
   a. Enter a name in the **Name** box
   b. Select the conditions that need to be met before the actions occur.
   c. Select which actions will occur.
3. Click **OK**.

Changing a Workflow

To change a workflow in the software:

1. On the **Device** tab, in the **Control** group, click the **Workflows** icon.
2. Select the intended workflow to change. *(Note: A workflow must be disabled before it can be edited)*
3. Click **Properties** and change the workflow to fit the desired preferences.
4. Click OK.



Disabling a Workflow

To toggle whether a workflow is enabled or disabled in the software:

1. On the **Device** tab, in the **Control** group, click the **Workflows** icon.
2. Select the intended workflow to enable or disable.
3. Click **Enable** or **Disable**, depending on the current status of the workflow.

Duplicating a Workflow

To duplicate a workflow:

1. On the **Device** tab, in the **Control** group, click the **Workflows** icon.
2. Select the intended workflow to duplicate.
3. Click **Duplicate**. In the box that appears, change the workflow settings to fit desired preferences.
4. Click **OK**.

Manually Running a Workflow

When a workflow needs to be performed prior to meeting the condition requirements that were set, a workflow can be run manually.

To manually run a workflow in the software:

1. On the **Device** tab, in the **Control** group, click the **Workflows** icon.
2. Select the intended workflow to manually run. *(Note: A workflow must be enabled and not already running before it can be manually run.)*
3. Click **Run**.

Deleting a Workflow

To delete a workflow:

1. On the **Device** tab, in the **Control** group, click the **Workflows** icon.
2. Select the intended workflow to remove and select Delete.

Calibration

MadgeTech data loggers must be calibrated annually *(at minimum)*. MadgeTech offers custom calibration services or the ability to calibrate the device through the software. Most data loggers can be calibrated through the software, however depending on the application, it is recommended that the devices be serviced by the MadgeTech Calibration Lab.

Calibration parameters, as well as the last calibration date, are stored within the device's non-volatile memory and can be accessed through the software. The software also allows the device to maintain calibration while being used on any computer. Most data loggers can be effectively calibrated using a single point to correct an offset. In some cases two points may be used to correct for gain and offset errors. (*Note: In most cases a very stable environment and accurate reference are required to perform an accurate calibration. MadgeTech cannot guarantee the accuracy of any device calibrated outside of MadgeTech.)*

There are two methods to input the calibration data into the device. First is the **Gain and Offset** option, which allows the user to enter a gain and offset directly when calibrating. Second, the **High and Low Values** option. The calculation used for calibration is x=*(y-b)*/m.

The values these letters represent are seen below:

- **x=calibrated value**
- **y=original device measurement**
- **b=offset**
- **m=gain**

Another way of visualizing this calculation is:

- **Calibrated value= (reading-offset)/gain**

Gain and Offset Values

The default gain of 1 and offset of 0 do not affect the readings the device takes. The device should be set to the default gain of 1 and offset of 0 before taking measurements used for a calibration adjustment.

High and Low Values

The alternative to entering gain and offset values directly is letting the software calculate them by entering device readings at two reference points using the **High and Low Values** option. These reference points are called **High** and **Low** because devices are generally tested at a low-range and a high-range value.

Example: A user wants to calibrate a HiTemp150. The **low** setting the user decides to use is 50 ˚C and the **high** setting the user decides to use is 150 ˚C. These values are the reference values. At a stable environmental temperature of 50 ˚C, the device readings are 50.17 ˚C. At 150 ˚C the device is reporting 149.98 ˚C. The device readings for this example would be 50.17 and 149.98.

Using the above data, the user would fill in the following information on the calibration screen, assuming a unit of ˚C:

Low

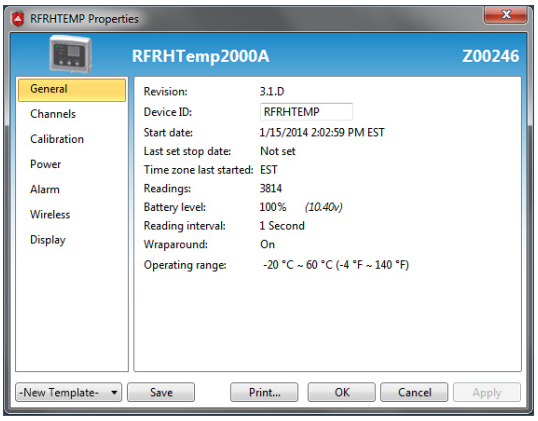
- **Reference value**: 50
- **Device reading**: 50.17

High

- **Reference value**: 150
- **Device readings**: 149.98

Using these values, the software calculates the gain and offset values and writes them to the device. The gain and offset values will be subtracted or added to each reading downloaded from the device, and the data will be correct without any further manipulation.

Calibrating a Device



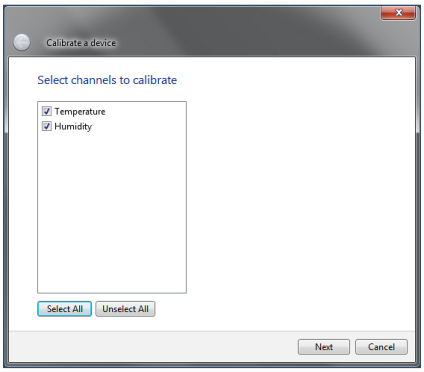
Devices need to be calibrated on a regular basis to ensure readings are accurate. If device sensor information or other specifications are provided with the logger, the user can calibrate a device themselves. Devices can also be sent back to the MadgeTech Calibration Lab for calibration as well for custom and certified calibrations.

For a user to calibrate a device with the software:

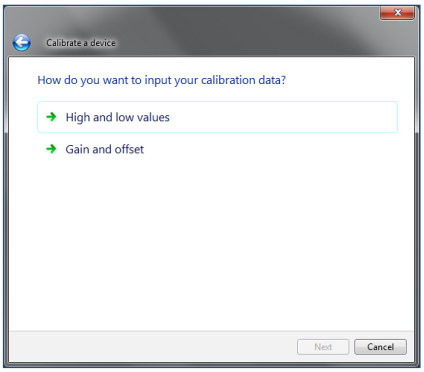
1. In the **Connected devices** panel, select the intended device to calibrate.
2. On the **Device** tab, in the **Information** group, click **Properties**. Users can also right-click on the selected device and click **Properties** in the context menu.
3. Click the **Calibration tab**. *(shown right)* (*Note: If the Calibration tab is missing, the device does not need to be calibrated. Recording the current values is recommended, so the original calibration values can be restored if desired.)*
4. Click the **Calibrate** button.

A series of **Calibrate a device** windows will appear. If the device has more than one channel, select the intended channels to calibrate. *(shown right)*

Next, decide how to input the calibration data. Refer to the explanations previously outlined in this section to choose the appropriate option.

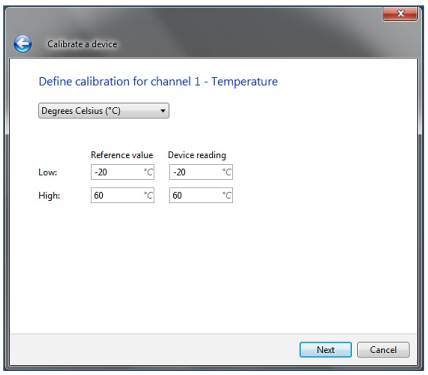


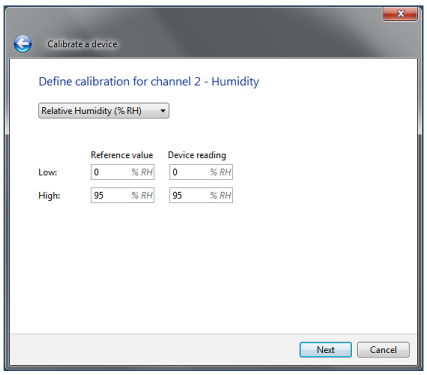
Select the intended channels to calibrate. If there is more than one, select all that apply.



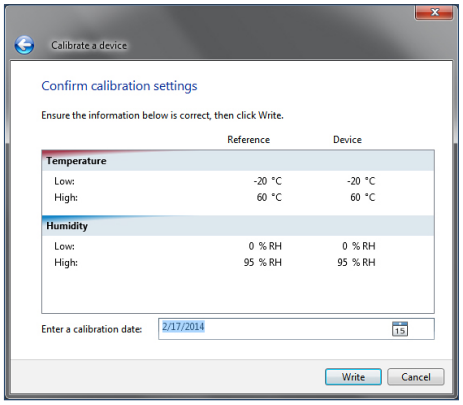
Select the input of the calibration data: High/Low Values or Gain/Offset.

If the High and Low values option is selected, the following screens will appear:
(Note: Depending on the device, the number of screens and units shown will be different based on the different channels the devices have.)

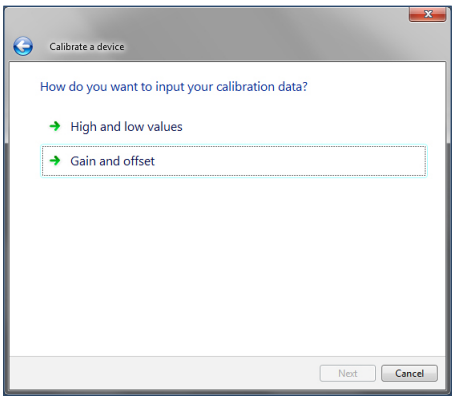


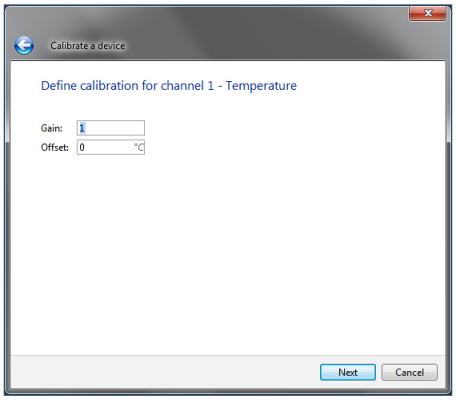


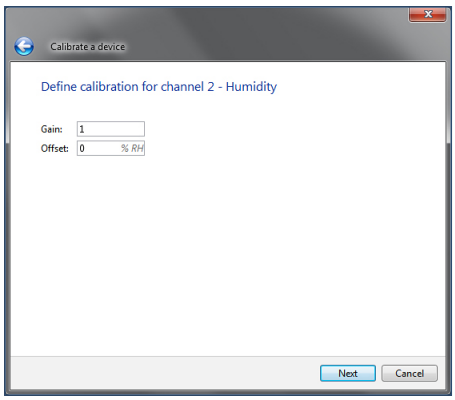
When the **Confirm Calibration Settings** screen appears, click **Write** and the following message will be displayed:



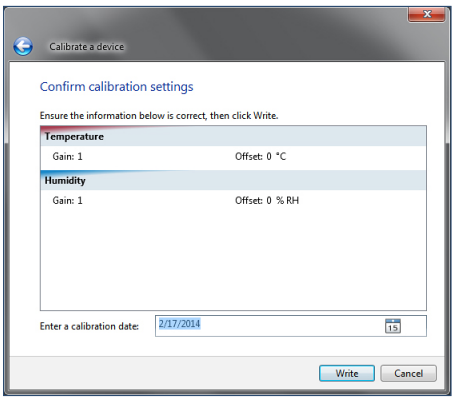
If the **Gain and offset** option is selected, the following screens will appear:
(Note: Depending on the device, the number of screens and units shown will be different because of the different channels each device has.)







When the **Confirm calibration settings** screen appears, click **Write** and the following message will appear:



Software Alarm Rules

There are two types of alarm settings: **Software Alarm Rules** and **Device Alarm Rules**. To find out more information on alarms that can be modified through the device, please refer to the **Device Alarm Rules** section of this manual.

Alarm Rules

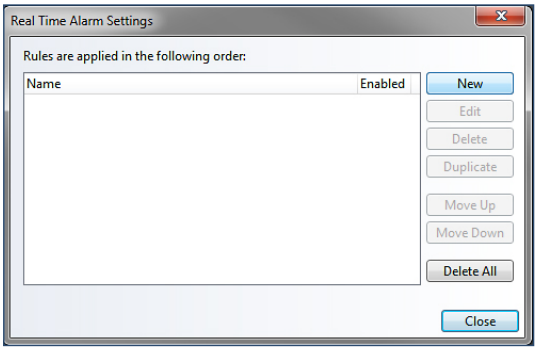
When a device is started in real time, **Software Alarm rules** can be set to notify individuals when certain conditions are met. This option is only available when a data logger is communicating with the software and started in **Real Time**.

The **Alarm Rules** option allows the high and low thresholds to be set, and high and low warning thresholds can be set if the device has this feature. A visual alarm notification will be triggered within the software when the alarm parameters are exceeded. **Alarm rules** can also be configured to send email notifications *(or text messages via email)* if the email server settings have been configured.

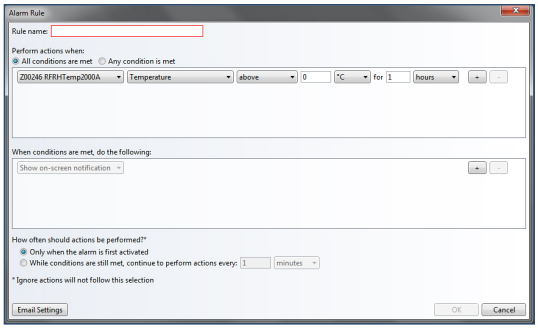
Adding an Alarm Rule

To add an Alarm Rule:

1. On the **Device** tab, in the **Alarms** group, click **Manage Rules**. The **Real Time Alarm Settings** screen will appear.
2. Click the **New** button. The **Alarm Rule** box will appear, complete one of the following steps:
   a. Enter a name in the **Rule name** box.
   b. Select whether notifications will be sent when **All conditions are met** or **Any condition is met**.
   c. Select the conditions to meet before notifications occur.
   d. Select which notifications will occur.
   e. Select whether notifications will only occur once or on a regular basis.
   f. If notifications need to be received by email or text message, click **Email settings** and make sure the correct information has been entered. *(Note: If the email settings are incorrect, email and text message notifications will not be received.)*
3. Click the **OK** button. The **OK** button will be disabled if the **Rule name** box is empty.



An example of a Real Time Alarm Settings box



An example of an Alarm Rule box.

Changing an Alarm Rule

To change an Alarm Rule:

1. On the **Device** tab, in the **Alarms** group, click **Manage Rules**.
2. Click the alarm rule to change.
3. Click the **Edit** button.
4. Change the alarm rule settings to fit application preferences.
5. Click the **OK** button.

Enable or Disable an Alarm Rule

To enable or disable an Alarm Rule:

1. On the **Device** tab, in the **Alarms** group, click **Manage Rules**.
2. Click the icon in the **Enabled** column for the rule specified to toggle.
3. An **Enabled rule** will notify the user based on the conditions the user specified. A **Disabled rule** will not notify the user when its conditions are met. The order of alarms can be rearranged by selecting an alarm and using the **Move Up** or **Move Down** buttons.

Removing an Alarm Rule

To remove an Alarm Rule:

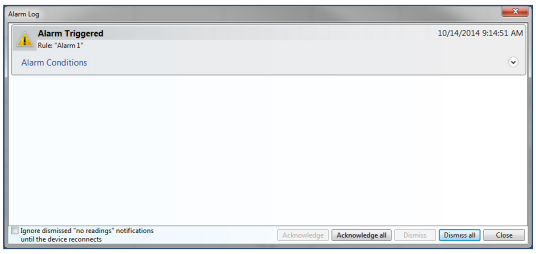
1. On the **Device** tab, in the **Alarms** group, click **Manage Rules**.
2. Click the alarm rule to change.
3. Click the **Delete** button. To delete all the alarm rules, click the **Delete All** button.

Dismissing an Alarm Rule Notification

If a notification is received that an alarm rule has triggered, users can choose to dismiss the alarm.

To dismiss an Alarm Rule notification:

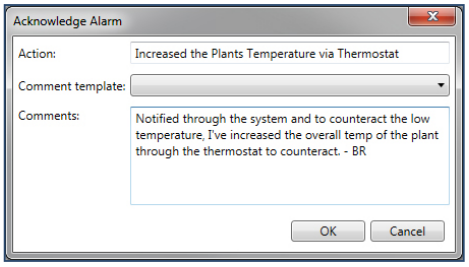
1. On the **Device** tab, in the **Alarms** group, click **Alarm Log**.
2. Click the notification that needs to be dismissed.
3. Click the **Dismiss** button.
4. To dismiss all the notifications, click the **Dismiss All** button. *(shown right)*



An example of an Alarm Log box.

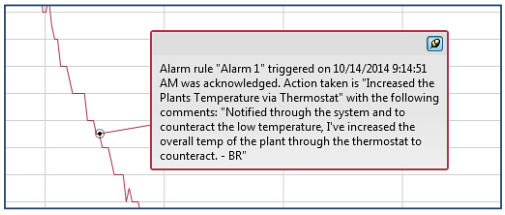
Alarm Acknowledgment

When logging data in real time and an alarm notification appears, users can choose to acknowledge it. This will allow the user to specify an action in response to the alarm and add comments. Predefined comment templates can also be configured for consistency and workflow efficiency.



To acknowledge a software alarm:

1. Start the data logger in real time and keep the report open. When an alarm is triggered while recording data, in the **Device** tab, select the **Alarm Log** button.
2. In the **Alarm Log** dialog box, choose the alarm from the list displayed and select **Acknowledge**. Enter a title for the action, add an additional comment or select a comment template for re-occurring alarm triggers if desired.
3. Select **OK**. An annotation will now appear on the graph report highlighting where the alarm was triggered and display the added comment.
4. If there is more than one alarm, users can select multiple alarms by holding down the **CTRL** key and then select **Acknowledge all**. Selecting **Acknowledge all** will apply the same response to all selected alarms. To apply different responses to multiple alarms, they must be selected individually.



Stopping Repeated Notifications for an Alarm Rule with a No Readings Condition

When setting up an alarm rule to continually notify when a device stops reporting readings, then the device becomes disconnected, users can choose to ignore further notifications until the device reconnects.

To stop repeated notifications for an Alarm Rule with a no readings condition:

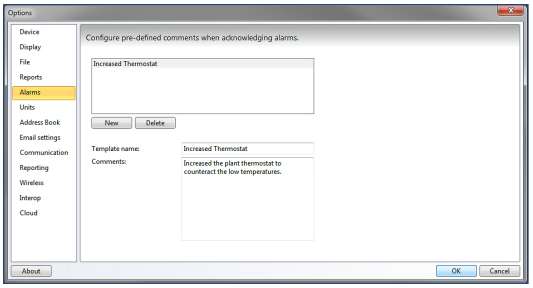
1. On the **Device** tab, in the **Alarms** group, click **Manage Rules**.
2. Select the checkbox next to **Ignore dismissed no readings notifications** until the device reconnects.
3. Alternatively, the alarm rule that is sending the notifications can be disabled. However, disabling the alarm rule also means that the user will not receive notifications if any other device meets its conditions.

Adding a Comment Template for Software Alarm Rules

Adding a standard comment template within the software will decrease time spent typing the same comment repeatedly and allow users to manage and track response options when an alarm is triggered.

Adding a comment template for software alarm rules:

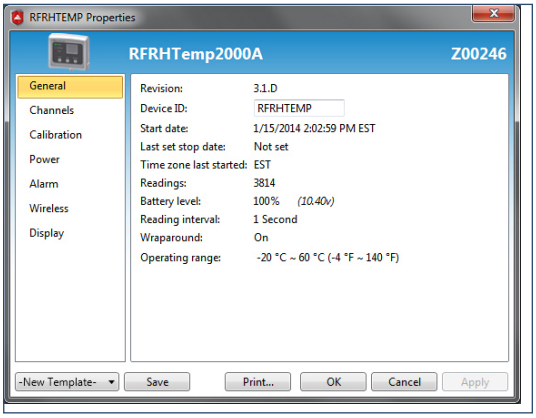
1. Click the **File** tab, then click **Options**.
2. From the **Options** screen, click **Alarms**.
3. To create a new template click **New**. The **Template name** and **Comments** fields can now be edited. Insert the desired template name and enter the comments you would like to appear, then select **OK**.
4. The list of predefined templates will be available to the user and displayed in the **Alarm Log** window when **Acknowledge** is selected.



Device Properties

The **Device Properties** box is where all of the device information and settings are located, and where changes to those settings can be made. The following general information *(varies by model and usage)* can be found in the device properties:

- **Revision**
- **Device ID**
- **Start date**
- **Last set stop date**
- **Time Zone last started**
- **Readings**
- **Battery level**
- **Reading interval**
- **Memory Wraparound status**
- **Thermocouple type**
- **Password**
- **Environmental Range**



An example of the device properties box.

Other device specific settings such as **Calibration**, **Channels**, **Power**, **Wireless Information**, and **Alarm and Trigger settings** can be viewed or changed by accessing the **Device Properties**. The **Properties** feature can be found on the **Device** tab in the **Information** group. **Device properties** can be viewed but not changed for devices that are currently recording or running in **Real Time**. *(shown above)*

General Settings: Properties of a Specific Device

To view the properties of a specific device:

1. In the **Connected devices** panel, select the intended device to view the properties.
2. On the **Device** tab, in the **Information** group, click **Properties**. Users can also right-click on the device and select **Properties** in the context menu.

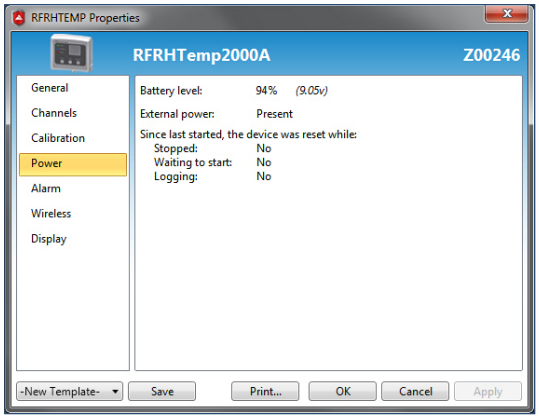
Many of the device properties require a reset before applying any of the changes made to the settings. Ensure that any data that needs to be saved is downloaded and stored before resetting the device.

Checking the Power Status of a Device

Information about the power status of each device can be found in the **Device Properties** box. The **Power** tab will provide information such as the battery level, external power sources *(varies by model)*, and if or when the device was last reset.

To view the power status information of a device:

1. In the **Connected devices** panel, select the intended device to view its power properties.
2. In the **Device** tab, **Information** group, click **Properties**.
3. Select the **Power** tab. In the **Power** tab, all of the power properties available can be viewed for the selected device. *(shown right)*



An example of the power tab in the device properties box.

Changing the Thermocouple Type of a Device

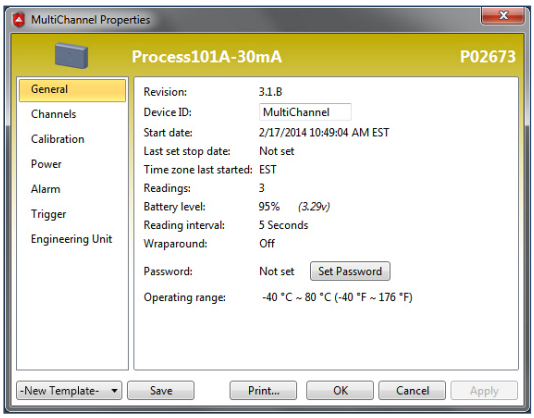
A thermocouple is made of two dissimilar conductors that are connected. When heated, they produce a voltage that can be correlated back to temperature. There are different thermocouple types that refer to the contrasting metal combinations. Each thermocouple type has a specific environment in which it can operate. If a device has a thermocouple, the type of thermocouple used for recording can be changed. The thermocouple type of the device must match the probe type or the recorded data will not be accurate.

To change the thermocouple type of a device:

1. In the **Connected devices** panel, select the intended device that requires changing.
2. On the **Device tab**, in the **Information** group, click **Properties**. Users can also right-click on the device and select **Properties** in the context menu.
3. On the **General** tab, change the **Thermocouple type** in the dropdown. If the **Thermocouple type** dropdown is missing, the device does not have a thermocouple.
4. Click **Apply**.

Add, Change, or Clear the Password of a Device

A password of a device that supports password capabilities can be set to protect it from being altered by unauthorized users. If the device does not have password capabilities, no password information will be displayed on the **Device Properties** screen.

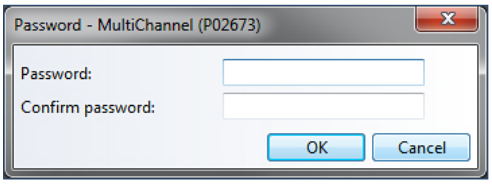


Setting the Password of a Device

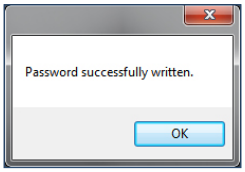
Setting the password of a device is easy and simple. To the right is an example of the **Properties** box with no password set.

To set the password of a device:

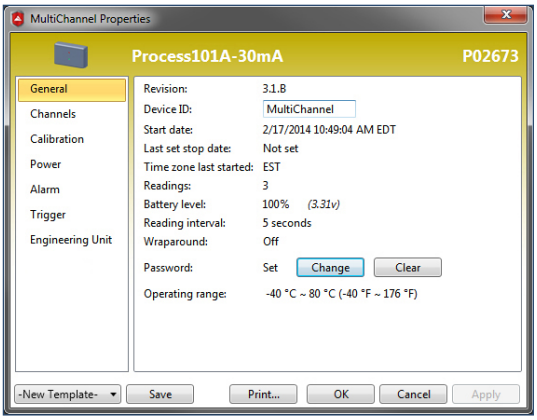
1. In the **Connected devices** panel, select the intended device to choose a password.
2. On the **Device** tab, in the **Information** group, click **Properties**. Users can also right-click on the device and select **Properties** in the context menu.
3. On the **General** tab, click the **Set password** button.
4. Enter and confirm the password in the box that appears, and then click **OK**. Below is an example of the box.
5. The software will display the message below when the password has been successfully written.



An example box of creating a password.



Now that a password is set for the selected device, all users will be required to enter the correct password before performing any tasks with the protected data logger. *(shown right)*

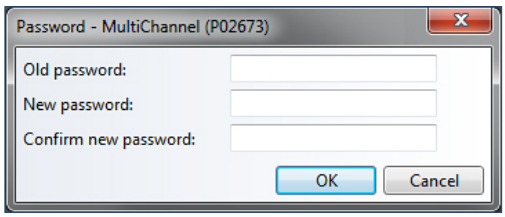


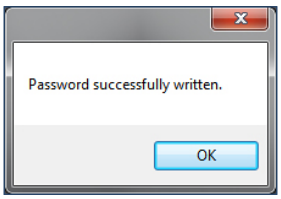
Changing the Password of a Device

At any time, users are able to change the password of a device that has currently has a password.

To change the password of a device:

1. In the **Connected devices** panel, select the intended device to change the password.
2. On the **Device** tab, in the **Information** group, click **Properties**. Users can also right-click on the device and click **Properties** in the context menu.
3. On the **General** tab, click the **Change password** button.
4. Enter the old password and confirm a new password in the box that appears, and then click **OK**.
5. The following message will appear when a new password has been successfully written.



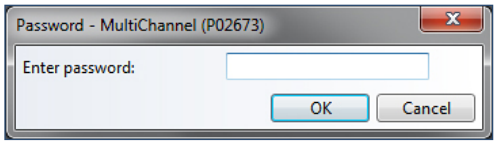


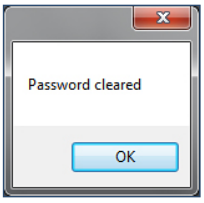
Clearing the Password of a Device

The password that is set on a device can be cleared at any time.

To clear the password of a device:

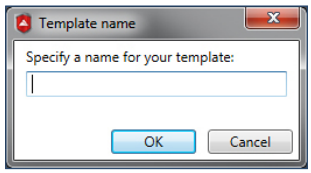
1. In the **Connected devices** panel, select the intended device to clear the password.
2. On the **Device** tab, in the **Information** group, click **Properties**. Users can also right-click on the device and select **Properties** in the context menu.
3. On the **General** tab, click the **Clear password** button. A **Password** box will appear.
4. Enter the correct password and click **OK**.
5. The following message will appear when the password has been successfully cleared:





Saving a Device Template

Users can save commonly used device property settings as templates that can be applied to other data loggers of the same model for future, repeated use.



To save a device template:

1. In the **Connected devices** panel, select any device.
2. On the **Device** tab, in the **Information** group, click **Properties**. Users can also right-click on the device and select **Properties** in the context menu.
3. Enter in all desired properties for the device. In the dropdown located at the bottom left of the **Properties** box, choose **New Template**.
4. Select **Save** and a box will prompt to name the device template. Enter a name and select **OK**.

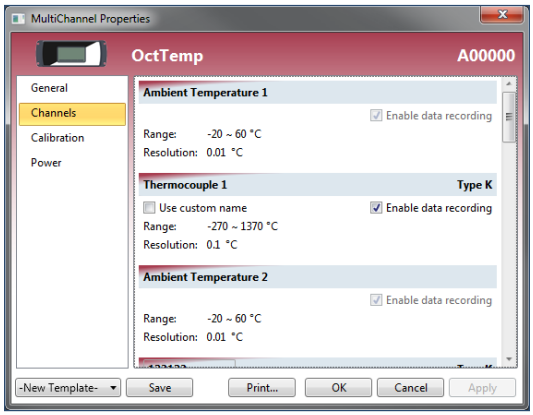
Channel Settings

Channel settings in the **Device Properties** box refer to the renaming of channels. This feature is only available with the QuadTemp, OctTemp, QuadTemp2000 and OctTemp2000 data loggers and the CTL2000. There are two channel types for the QuadTemp and OctTemp data loggers, **Thermocouple** and **Ambient**. The setting to enable data recording is always inactive for the **Ambient** channel and cannot be selected because it works in conjunction with the corresponding thermocouple channel. *(Note: Disabling a thermocouple channel will also disable the corresponding ambient channel.)*

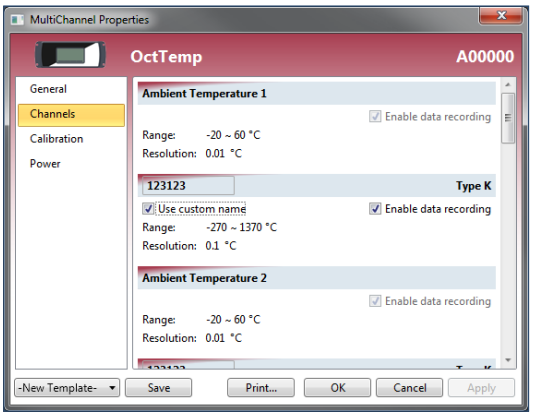
Changing the Channel Name of a Device

To change the channel name of a device:

1. In the **Connected devices** panel, select the intended device to change the name of the thermocouple channel.
2. On the **Device** tab, in the **Information** group, click **Properties**. Users can also right-click on the device and select **Properties** in the context menu.
3. On the **Channel** tab, click the **Use custom name** checkbox to change the name of the thermocouple. Below are examples of the Channels tab, with default settings and custom settings. *(Note: Only the thermocouple channel name can be changed.)* If there is no option to use a custom name, the device does not have the option to rename a thermocouple channel.



An example of the default settings for the thermocouple channels.



An example of the Use custom name checkbox selected and a desired thermocouple name applied.

Calibration Settings

To edit the calibration settings please refer to the **Calibration** section of this manual.

Device Alarm Rules

There are two types of alarm settings: **Software Alarm Rules** and **Device Alarm Rules**. To find out more information on alarms that can be modified in the software, please refer to the **Software Alarm Rules** section of this manual.

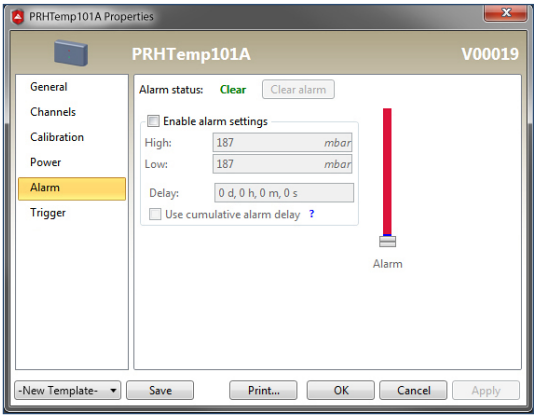
Changing the Device Alarm Rules

To change the Alarm Settings of a device:

1. In the **Connected devices** panel, select the intended device to change the alarm settings.
2. On the **Device** tab, in the **Information** group, click **Properties**. Users can also right-click on the device and select **Properties** in the context menu.
3. Click the **Alarm** tab. If the **Alarm** tab is missing, the device does not have any alarm settings.

Configure the Alarm Settings:

1. The **High and Low** settings indicate reading thresholds at which the alarm becomes active.
2. The **Warn high and Warn low** settings indicate reading thresholds at which the alarm warning becomes active.
3. The **Delay** setting indicates how long to wait before the alarm becomes active after passing an alarm threshold.
4. The **Use cumulative alarm delay** checkbox indicates whether or not the alarm delay should reset when reading values fall back within the alarm threshold. *(shown right)* *(Note: Available settings vary per model.)*
5. Click the **Apply** button.



Clearing an Active Device Alarm or Alarm Warning on a Device

To clear an active device alarm or alarm warning on a device:

1. In the **Connected devices** panel, select the intended device's alarm to change.
2. On the **Device** tab, in the **Information** group, click **Properties**. Users can also right-click on the device and select **Properties** in the context menu.
3. Click the **Alarm** button. If the **Alarm** tab is missing, the device does not have any alarm settings.
4. In the **Alarm** tab, do any of the following:
   a. Click the **Clear alarm** button to clear the alarm so it is no longer active.
   b. Click the **Clear warning** to clear the alarm warning so it is no longer active.

Trigger Settings

Trigger settings can be configured to allow a device to automatically begin and stop recording data when certain reading thresholds are reached. The trigger capabilities of a device may vary. To change the trigger settings of a device, please refer to the steps below.

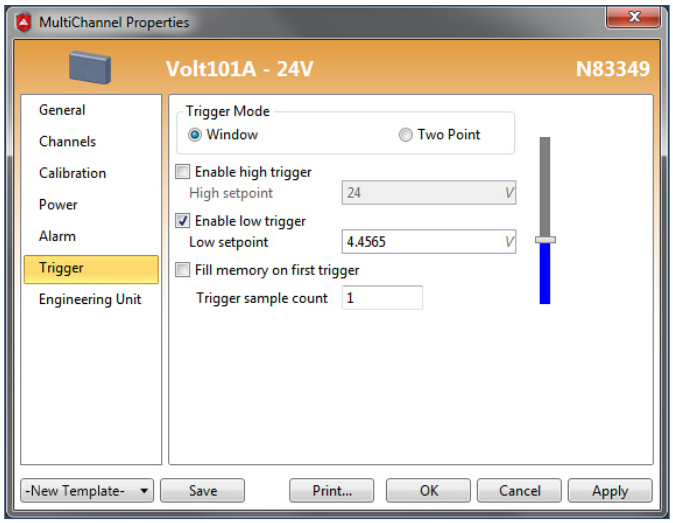
Change the Trigger Settings of a Device

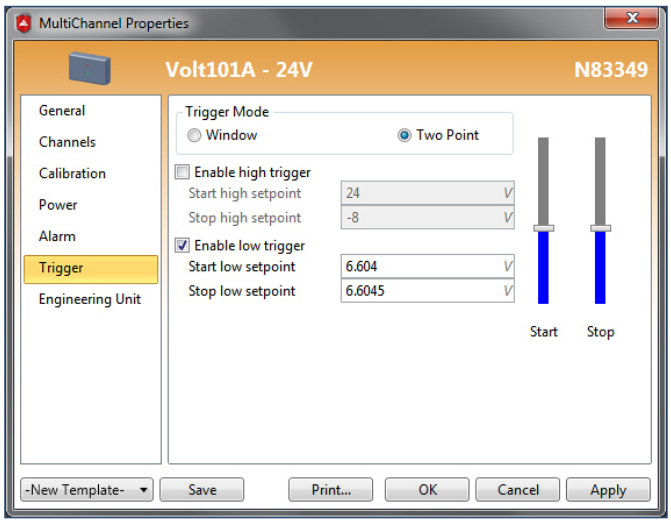
To change the Trigger Settings:

1. In the **Connected devices** panel, select the intended device to change the settings.
2. On the **Device** tab, in the **Information** group, click **Properties**. Users can also right-click on the device and select **Properties** in the context menu.
3. Click **Trigger**. If the **Trigger** tab is missing, the device does not have any trigger settings.
4. Configure the **Trigger** settings.
   a. **Window Mode**
      - After a device is started, recording begins when a reading is below the Low setpoint value or above the High setpoint value. If either trigger is disabled, the respective setpoint value is ignored. Disabling both the high and low triggers causes all readings to be recorded. This applies to devices that support the disabling of both triggers.
      - The **Trigger sample count** indicates how many readings each trigger sample should contain. When the indicated number of readings is recorded within the current sample, recording ends until a setpoint value is exceeded again. If the **Fill memory on first trigger** checkbox is checked, the sample count is set to the maximum number of readings the device can record.

   b. **Two Point Mode**
      - The Start range indicates when recording begins. A reading must be above the **Start high** setpoint value or below the **Start low** setpoint value to begin recording. The Stop range indicates when recording ends. A reading must be above the **Stop low** setpoint value or below the **Stop high** setpoint value to end recording.
      - When recording ends, any reading outside the Start range will cause recording to start again.

   c. **Tri-axial Recorders**
      - Recording begins when a reading from any axis exceeds the setpoint value of the axis in either the positive or negative direction.
5. Click **Apply**. The following images are **Trigger** screen examples:





Engineering Units

Engineering units display readings in a user selected custom unit of measurement. **Engineering units** that are stored for use with reports can be added, changed, or removed. There are two types of **Engineering unit** levels: **Software** and **Device**. Users are able to create or change the engineering units in both the software level and device level. The user can manipulate the software level engineering units whenever the software is running, but the device level editing is only available when the connected device supports the desired engineering units.

The options that are available for creating or changing engineering units include **Gain and Offset** and **High and Low values** for specified conversions. Specification sheets are often available and provide conversions and/or gain and offset values for the sensor being used.

Software Level
This MadgeTech 4 Secure Software feature allows the customization of **Engineering units**. **Software level units** *(saved in the software specific to the user's PC, not the device)* and functions are the same as non-customized units. The software levels engineering units are located on the **Device** tab in the **Information** group. When using the software level engineering units feature with a supported device, users can create a unit and apply it to a device.

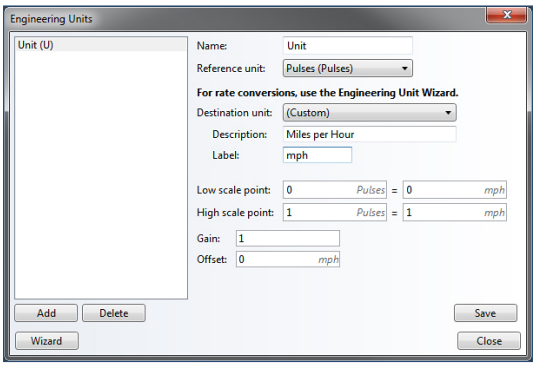
Device Level
This feature is only available when the connected device supports engineering units. The device level engineering units feature is located in the **Engineering Unit** tab in the **Properties** screen.

There are two methods available for adding an engineering unit: **Manually**, and using the **Engineering Unit Wizard**.

Adding an Engineering Unit

Adding an Engineering Unit manually:

1. On the **Device** tab, in the **Information** group, click **Engineering Units**.
2. Click the **Add** button.
3. Enter engineering unit information.
4. Click the **Save changes** button.
5. Now the new engineering unit will be saved. *(shown right)* *(Note: Adding an Engineering Unit will require a device reset, which erases all stored data.)*

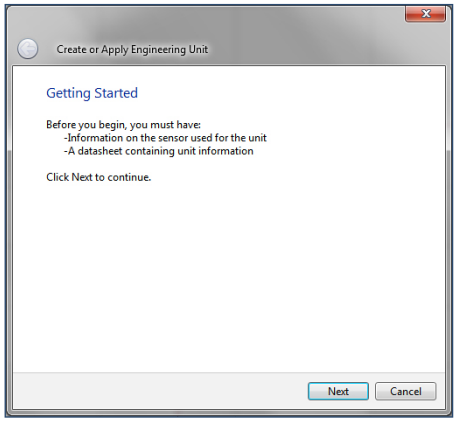


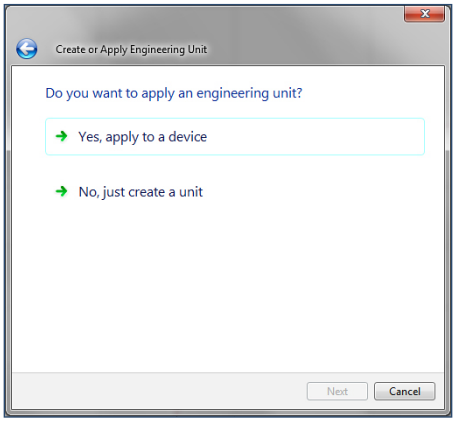
An example of entering an engineering unit manually.

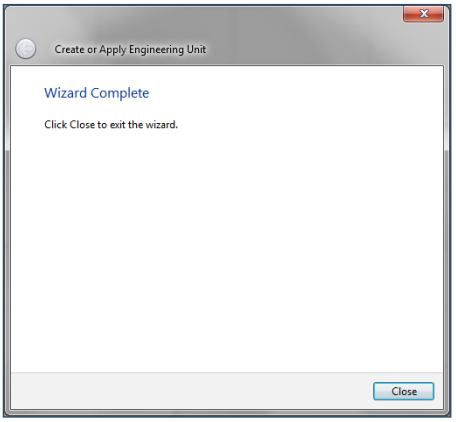
Adding an Engineering Unit Using the Engineering Unit Wizard

Adding an Engineering Unit using the Engineering Unit Wizard:

1. On the **Device** tab, in the **Information** group, click **Engineering Units**.
2. Click the **Wizard** button.
3. Complete the wizard steps. Below are examples of the **Engineering Unit** wizard.







Changing the Engineering Unit of a Device

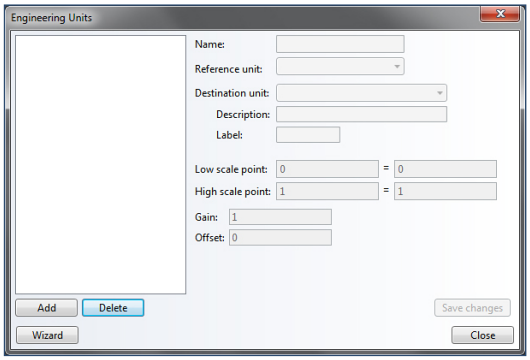
The engineering unit of a device can be changed to automatically display readings in a custom unit when downloading data. There are two methods available for changing the engineering unit; the **Properties** screen, and using the **Engineering Unit Wizard**.

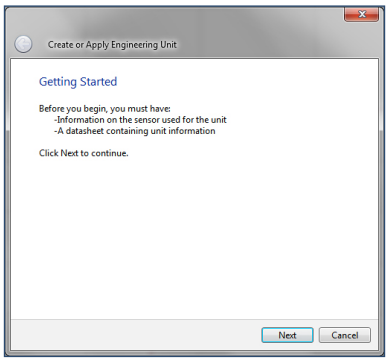
Changing Engineering Units: properties screen *(Note: Only data loggers that support engineering units can perform this task)*

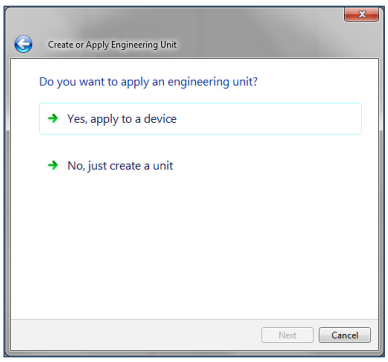
1. In the **Connected devices** panel, select the intended device to change engineering units.
2. On the **Device** tab, in the **Information** group, click **Properties**. Users can also right-click on the device and select **Properties** in the context menu.
3. Click the **Engineering Unit** tab. If the **Engineering Unit** tab is missing, the device cannot use an engineering unit.
4. Make sure the check box next to **Enable engineering unit for this device** is selected.
5. Select a **Unit**.
6. Click the **Apply** button. Now the selected device will display readings in the user selected unit.

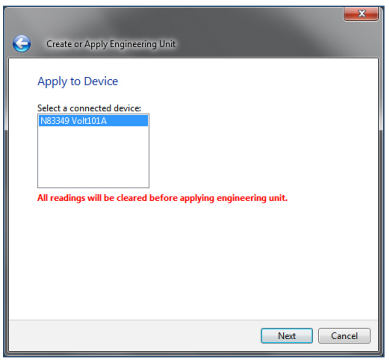
Changing the Engineering Units: Engineering Unit Wizard

1. On the **Device** tab, in the **Information** group, click **Engineering Units**.
2. Click **Wizard**.
3. Click the **Next** button, and then **Yes**, apply to a device.
4. Select a unit from the list, or configure an alternative unit.
5. Complete the wizard. Below is an example of the engineering unit screen and engineering unit wizard screen.

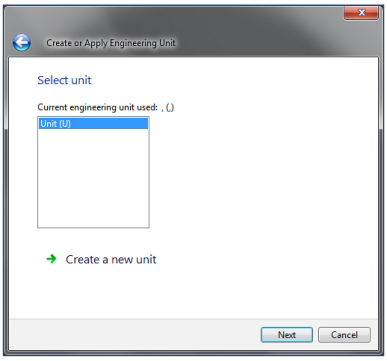




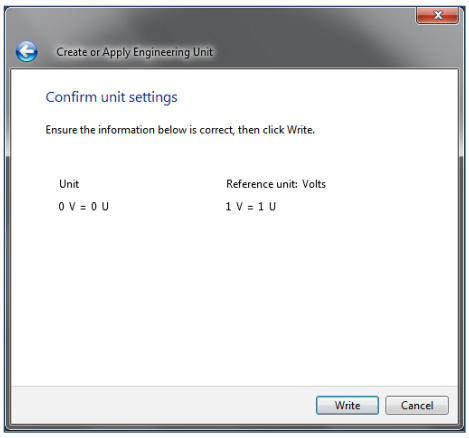


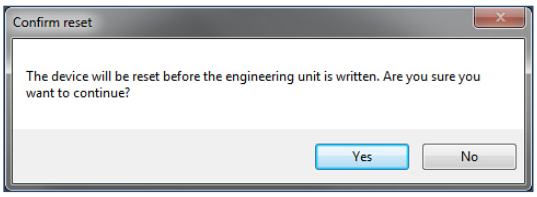


6. At the **Select unit** screen, choose a different engineering unit that has already been created, it will be located in the **Select unit** list box.

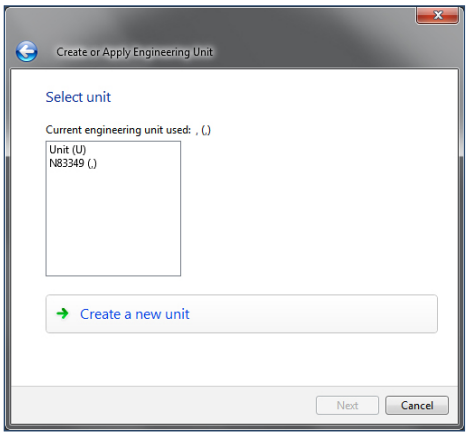


7. At the **Confirm Unit Settings** screen, click **Write**, and the following message will appear. *(Note: Keep in mind that when a device is reset, all of the stored data is lost.)*

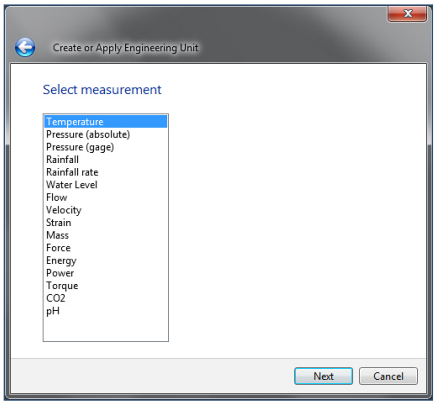


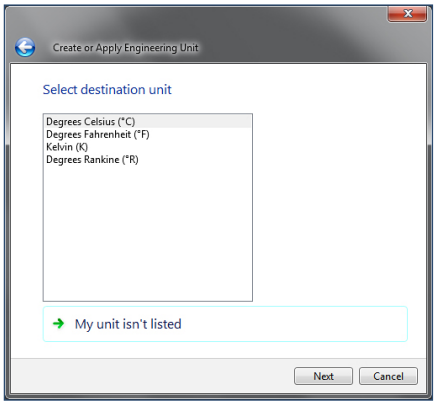


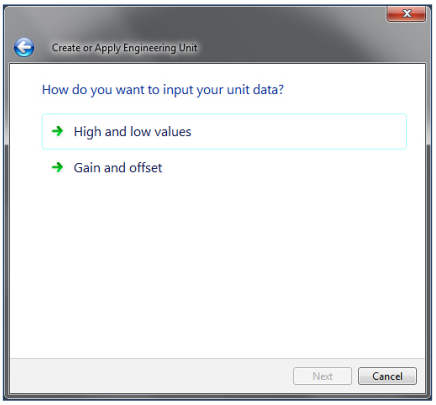
8. From the **Select unit** screen, new units can be created by clicking the **Create a new unit** option. The following wizard screens will appear:



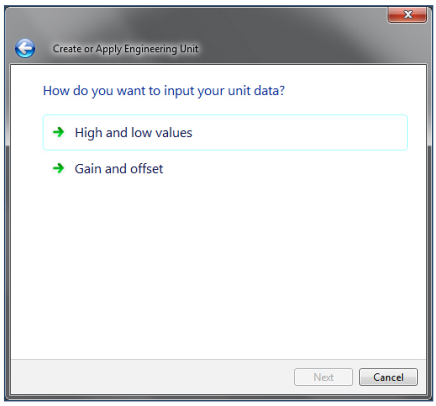
9. When the **Select measurement** screen appears, input the unit data. Refer to the explanations about the two options in the calibration section to choose the appropriate option.

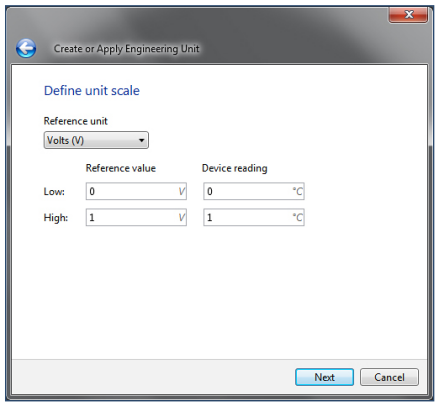


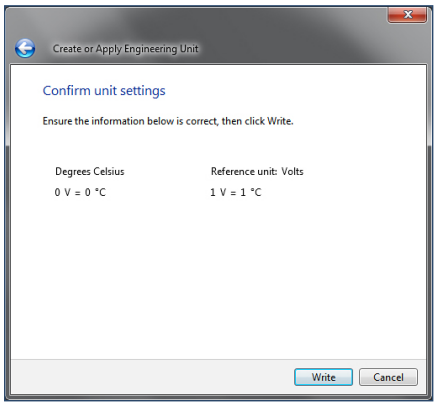




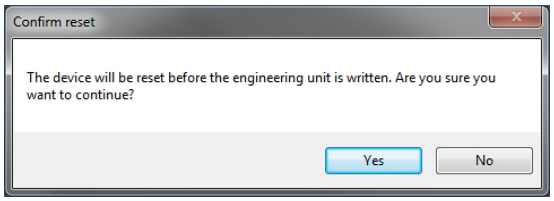
10. When the **High and low option** is selected, the following screens will appear:



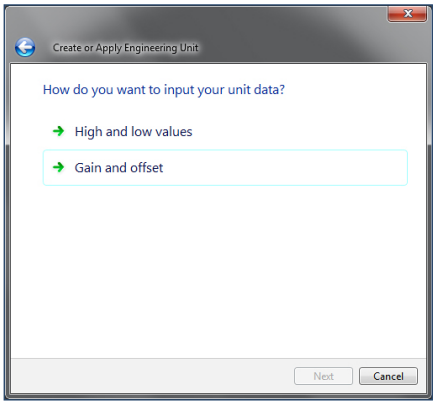


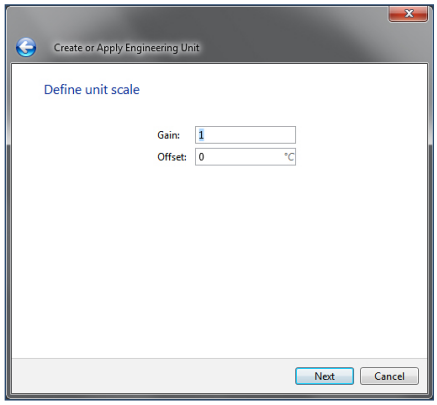


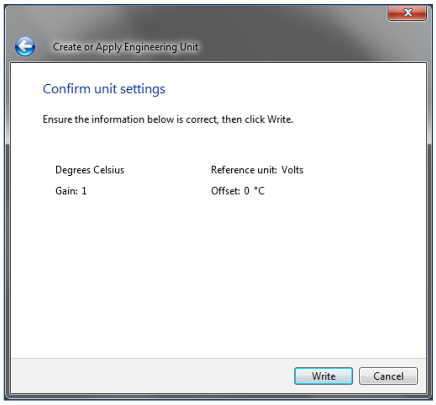
11. At the **Confirm unit settings** screen, click **Write**, and the following message will appear. *(Note: Keep in mind that when a device is reset, all of the stored data is lost.)*



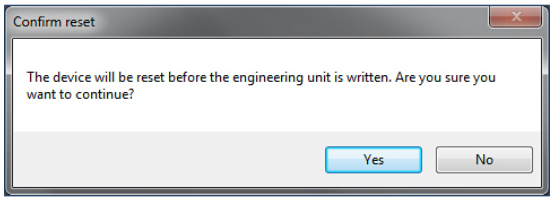
12. When the **Gain and offset** option is selected from the screen below, the **Confirm unit setting** screen will appear.





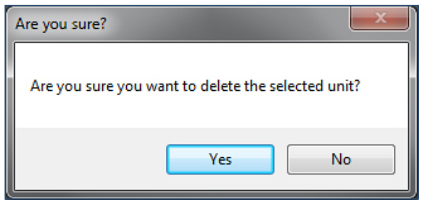


13. Click **Write**, and the following message will appear to confirm a reset of the device. *(Note: Keep in mind that when a device is reset, all of the stored data is lost.)*



Removing an Engineering Unit

Engineering units can be removed at any time.



To remove an Engineering Unit:

1. On the **Device** tab, in the **Information** group, click **Engineering Units**.
2. Select an engineering unit to remove.
3. Click the **Delete** button.
4. The following message will appear. *(shown right)*
5. Clicking **Yes** will delete the engineering unit, clicking **No** will keep the engineering unit.

Display Settings

MadgeTech offers a variety of data loggers that are equipped with an LCD screen. The **Display settings** refer to the physical display on the device itself.

To change the display setting of a device:

1. In the **Connected devices** panel, select the intended device to change the display settings.
2. On the **Device** tab, in the **Information** group, click **Properties**. Users can also right-click on the device and select **Properties** in the context menu.
3. Click the **Display** tab. If the **Display** tab is missing, the device does not have any display settings.
4. Configure the display settings. The number and type of settings displayed may vary depending on the device model. The following are examples of settings that might be available:
   - **Display mode** indicates when the device display should appear.
   - **Display auto off interval** indicates when the device display should automatically shut off.
   - **Update mode** indicates when the device display should update. If **Custom** is selected, the **Display update interval** indicates how often the display should update.
   - **Channel size** indicates the text size of channel names on the device display.
   - **Backlight mode** indicates when the backlight should be on.
   - **Pixel mode** indicates whether the device display uses inverted colors.
   - **Enable LEDs** setting indicates whether the device LEDs should activate.
   - **Enable buzzer** setting indicates whether the device buzzer should be triggered.
5. Click **Apply**.

Managing Wireless Devices

Managing wireless devices is simple through the use of the MadgeTech 4 Secure Software. All MadgeTech wireless data loggers require the use of an interface cable or wireless transceiver to transmit the data back to the software.

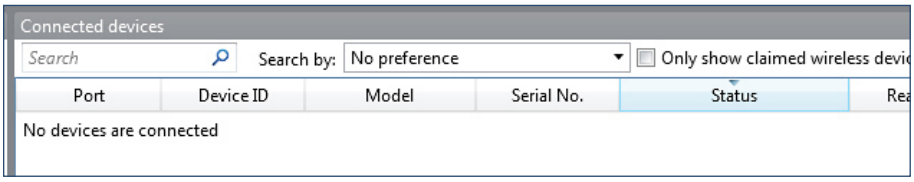
Claiming a Wireless Device to the Network

The RFC1000 transceiver connects to the computer and provides the wireless network access for the data loggers. The RFC1000 may pick up signals from nearby wireless devices other than the target data logger. To avoid this problem, users can add wireless devices to the specific network by claiming them. Multiple RFC1000s may be used to extend the range of the network.

To add a wireless device to the network:

1. In the **Connected devices** panel, ensure that the **Only show claimed wireless devices** checkbox is unchecked. All wireless devices that the RFC1000 is picking signals up from will be displayed in the **Connected devices** panel.
2. Select the intended device to claim.
3. On the **Device** tab, in the **Wireless** group, click **Claim**.
4. Now the selected device will be a part of the connected devices panel and users are able to record data/change device settings.

Unless **Only show claimed wireless devices** is selected in the **Connected devices** panel, the list of wireless devices will remain in the **Connected devices** panel and the claimed device will remain highlighted. Once the **Only show claimed wireless devices** checkbox is checked, only the claimed wireless devices will be displayed in the **Connected devices** panel.



Removing a Wireless Device

When a user no longer needs access to a wireless device, the device may be released.

To release a wireless device:

1. In the **Connected devices** panel, select the intended device to release.
2. On the **Device** tab, in the **Wireless** group, click **Release**.
3. Now the wireless device will no longer be claimed.

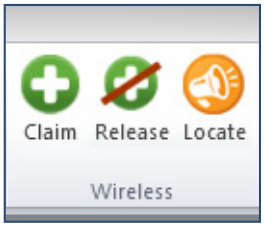
Changing the Communication Channel of a Wireless Device

To change the frequency at which a wireless device communicates, the user can change the wireless channel.
(Note: After changing the wireless channel, communication with the device will be lost until all connected RFC1000s are configured to use the same channel.)

To change the channel of a wireless device:

1. In the **Connected devices** panel, select the intended device to change.
2. On the **Device** tab, in the **Information** group, click **Properties**. Users can also right-click the device and select **Properties** in the context menu.
3. Click the **Wireless** tab. If the **Wireless** tab is missing, the device does not have any wireless settings.
4. Change the value in the **Wireless Channel** dropdown menu to the desired setting.
5. Click the **Apply** button. *(Note: To change the selected wireless channel on the RFC1000 transceivers, please refer to the RFC1000 product documentation.)*

Physically Locate a Claimed Wireless Device



Certain wireless devices can produce a repeated tone to help locate them.

To locate a claimed wireless device in network:

1. In the **Connected devices** panel, select the intended device*(s)* to locate.
2. On the **Device** tab, in the **Wireless** group, click **Locate**. Users can also right-click on the device and select **Locate** in the context menu.
3. The selected device will sound with the repeated tone for a few moments and then it will stop. This action can be repeated as many times as necessary in order to locate the device*(s)*. If the **Locate** button is disabled, one or more of the selected devices do not have this feature.

Managing Folders and Reports

When utilizing the MadgeTech 4 Secure Software, users have the ability to manipulate folders and reports to streamline analysis. This chapter provides assistance in achieving optimum organization by outlining steps to create, move, delete or recover folders and reports. This section will also highlight ways to manage reports and datasets.

Folders

All of the folders can be found in the **File Database** panel. The folders are available for organization of reports and datasets. Folders can be created, renamed, moved to different locations, and deleted.

Create a New Folder

To create a new folder:

1. In the **Files Database** panel, select the location to contain the new folder.
2. Right-click in the location and select **New Folder**.

Rename a Folder

To rename a folder:

1. In the **File Database** select the intended folder to rename.
2. Complete one of the following steps:
    a. Click on the name of the folder, enter a new name, and press **Enter**.
    b. Right-click on the folder and select **Rename Folder** in the context menu. Enter a new name and press **Enter**.

Move a Folder

To move a folder:

1. In the **File Database** panel, select the intended folder to move.
2. Hold and drag the folder into a different folder.

Delete a Folder

To delete a folder:

1. In the **File Database** panel, select the intended folder to delete.
2. Complete one of the following steps:
    a. Press the **Delete key**.
    b. Right-click the folder and select **Delete Folder**.
    c. Hold and drag the folder to the appropriate recycle bin.

Managing Reports

Reports can be generated in the form of a **Graph**, **Data table**, or **Statistics view** and will be displayed in the chart window. All **saved**, **example**, and **deleted** reports *(as long as they haven't been permanently deleted)* will be located in one of the folders in the **File Database** panel. There are many ways to create and manipulate types of reports to fit the user's need, which will be detailed in this section.

Creating a New Blank Report

Users can create a blank graph, data table, or statistics view when creating a new report.

To create a blank report:

1. Click the **File** tab, then hover or click the expander arrow next to **New**.
2. Select the type of report to create. Users can also click the **Generate** button located in the **Graph**, **Data Table**, and **Statistics** groups of the **Report** tab. *(Note: A report is automatically generated when double-clicking on a dataset in the Files panel.)*

Generating a Report from Another Report

To view the data of a report in a different format, users can generate a new report using the same data. The reports are then linked, which means that any changes applied to one report are also applied to other reports that are using the same data. To create a new report using the same data as the selected report without linking them, users will need to create a blank report and add the data manually.

To generate a report from another report:

1. Open the original report or select the tab or window that contains it.
2. On the **Report** tab, complete one of the following steps:
   a. In the **Graph** group, click **Generate** to create a new graph report based on the data of the selected report.
   b. In the **Data Table** group, click **Generate** to create new data table report based on the data of the selected report.
   c. In the **Statistics** group, click **Generate** to create a new statistics view based on the data of the selected report.

Opening a Report

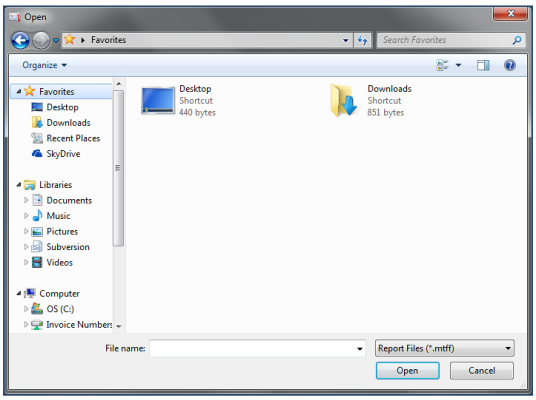
There are two locations available from which a report can be opened: the internal database or from a file on the user's computer.

To open a report from the database:

1. On the **File Database** panel, click the folder that contains the report.
2. In the **Files** list, double-click the name of the report to open it. Users can also right-click on the report and select **Open report** in the context menu.

To open a report from a file:

1. Click the **File** tab, and then click **Open**. This will display the **Open** dialog box.
2. The keyboard shortcut to display the **Open** dialog box is **Ctrl+O**. *(shown right)*.
3. In the **Navigation** pane, browse to the **Folder**, **Drive**, **Removable media** *(such as flash drive, CD, or DVD)*, or **Internet location** that contains the file.
4. Select the file, and the click **Open**.



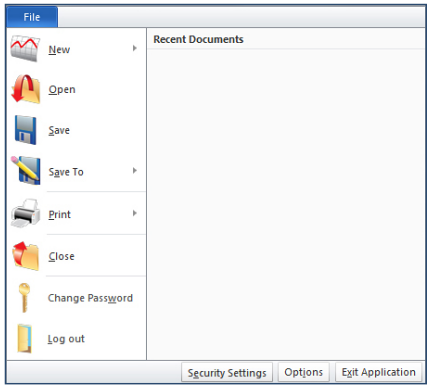
The **Recent Documents** list is available from the **File** tab and can be used to open recent reports. Reports can also be opened through **Windows Explorer** by double clicking the icon. If the software is not running, it will be started and the report will be displayed.

Saving a Report

A report can be saved to a file or to the internal database. By default, new reports are saved to the **Reports** folder of the internal database. A report that has already been saved will be saved to its previous save location.

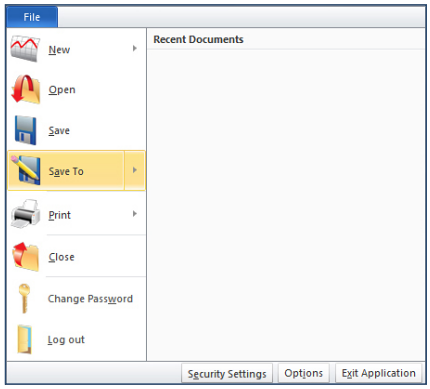
To save a report:

1. Click the tab or window containing the report to save.
2. Click the **File** tab, then click **Save**. The keyboard shortcut to save a report is **Ctrl+S**. New unsaved reports will now be saved to the internal database.



To save a report to a file:

1. Click the tab or window containing the report to save.
2. Click the **File** tab, and then click **Save To**. *(shown right)*
3. Select **Save To** and click **File**. The keyboard shortcut to open the Save As dialog box is **ALT+F+A**.
4. In the **File name** box, enter a name for the file.
5. Click **Save**. The report will now be saved to the selected destination.



To save a report to the internal database:

1. Click the tab or window containing the report to save.
2. Click the **File** tab, **Save To** and click **File database**. *(shown right)*
3. The report will now be saved and located in the **Datasets** folder within the **File Database** panel.

Closing a Report

To close a window containing a report, use either the File menu or the report window.

To close a report:

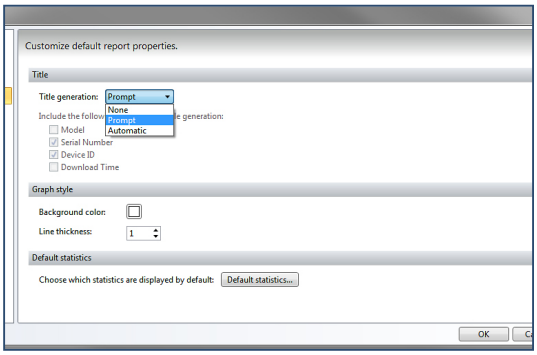
1. To close a report from the file menu, with the report window selected, click the **File** tab, and then choose **Close**.
2. To close a report from the chart window, on the **Report** header, click the **X**.

Changing How a Report Title is Generated

By default, a new report uses a generic title until it is renamed. Users can change what appears in the title so reports can be recognized.

To change how a report title is generated:

1. Click the **File** tab, and then click the **Options** button located at the bottom of the menu.
2. Click the **Reports** tab.
3. Select a **Title generation** method:
   a. **None** uses a generic title for new reports.
   b. **Prompt** asks for a title for new reports.
   c. **Automatic** creates a title for new reports based on the selectable options under **Include the following in automatic title generation**. Users can choose to check any and/or all of the following options in this section: *(shown below)*
      - **Model** *(Device Type)*
      - **Serial Number**
      - **Device ID**
      - **Download Time**



Renaming a Report

Renaming a report changes the title of the report. There are two ways to rename a report. A report stored in the internal database can be renamed without opening it. The report must be closed before it can be renamed in the database.

To rename a report in the database:

1. In the **File Database** panel, select the folder that contains the report to rename.
2. In the **File** list panel, select the report to rename.
3. Click on the name of the report in the **Title column** twice. The current title will now be highlighted and can be edited.
4. Be careful not to double-click on the report, which will open the selected report.
5. Enter a new name for the report.
6. Press the **Enter key**. The report will now have a new name and will retain that name until it is renamed again.

Renaming an Open Report

A report can also be renamed while it is opened. The report must be saved after it has been renamed in order for the new name to be applied once the report is closed.

To rename an open report:

1. Double-click the tab containing the report to rename. The current title will now be highlighted and can be edited.
2. If the report is in a floating window, right-click the title bar of the report window and select **Rename** in the context menu.
3. Enter a new name for the report.
4. Press the **Enter key**, or click **OK** if using the right-click method.

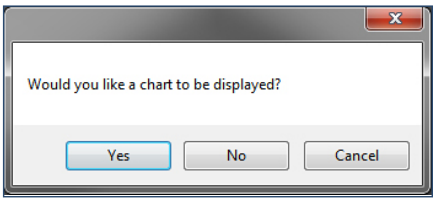
Exporting a Report to Microsoft Excel®

To see report data in a spreadsheet, users can export reports to **Microsoft Excel®**. *(Note: Only Microsoft Excel® 2003 and later are supported. Exported data cannot be re-imported.)*

Export All Data to Microsoft Excel®

If multiple versions of Microsoft Excel® are installed, the version that was most recently installed will be used to display the data. All of the data included in the report can be exported to Microsoft Excel®, or only a selected portion of the data if desired. If there are more than 1 million readings to export, Microsoft Excel® will display the data spanning multiple sheets within a workbook as necessary.

To export all data to Microsoft Excel®:



1. Select the tab or window containing the report to export data from.
2. On the **Report** tab, in the **Report Options** group, click **Export to Excel®**, then click **Export All Data To Excel®**.
3. The **Display Chart** message will appear before Microsoft Excel® opens:
   - Click **Yes**: A chart and spreadsheet will open and be located in the **Chart** and **Data** tabs respectively.
   - Click **No**: Only a spreadsheet will open, it will be located in the **Data** tab.
   - Click **Cancel**: The command will be canceled and no data will be exported to Microsoft Excel®. *(Note: The title of the graph does not carry over to the Microsoft Excel® display chart.)*

Exporting Graph Timeslice Data to Microsoft Excel®
Graph data can be selected using a timeslice in order to export only selected data.

To export graph Timeslice data to Microsoft Excel®:
1. Select the tab or window containing the report to export.
2. Select the data to export by creating a **Timeslice**. *(Note: The Timeslice icon is located on the Report tab in the Graph group. For more information on creating a timeslice, refer to **Create a Timeslice with a Graph** in this manual.)*
3. On the **Report** tab, in the **Report Options** group, click the expander button below **Export to Excel®**, and then click **Export Selected Data to Excel®**.
4. The **Display Chart** message will appear before Microsoft Excel® opens
   - Click **Yes**: A chart and spreadsheet will open and be located in the **Chart** and **Data** tabs respectively.
   - Click **No**: Only a spreadsheet will open, located in the Data tab.
   - Click **Cancel**: The command will be canceled and no data will be exported to Microsoft Excel®. *(Note: The title of the graph carries over to the Microsoft Excel® display chart.)*

Printing a Report

There are a few different methods available to print reports that will be discussed in this section. There is also a print preview option available in order to preview what is planned to print before performing the actual print command.

Viewing a Print Preview of a Report
The print preview option allows users to preview what the actual printed report will resemble.

To view a print preview of a report:
1. Open or click the tab or window containing the report.
2. Click the **File** tab, then choose **Print** and then click **Print Preview**. The keyboard shortcut to display the print preview dialog box is **Ctrl+F2**.

In the print preview screen, under the **Print Preview** tab**, Margins**, **Page orientation**, **Page size**, and **Zoom** of the report can all be adjusted. The user can also print directly from the print preview screen by clicking the **Print** icon in the **Print** group on the **Print Preview** tab.

Printing a Report without Using the Print Screen
Using the **Quick Print** option allows users to print a report without using the print screen. The report will automatically print to the PC's default printer and will print with the previously selected settings. When **Quick Print** has been selected there will not be an opportunity to change any print settings in the print dialog box because it will not appear.

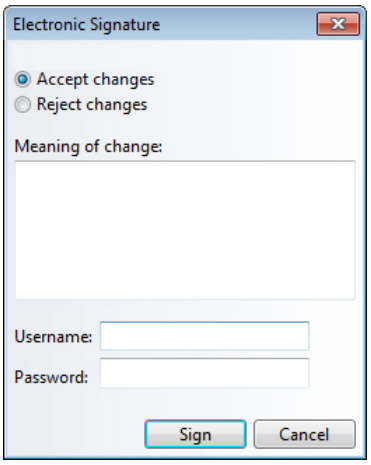
To print a report without using the print screen:
1. Open or click the tab or window containing the report to print.
2. Click the **File** tab and then hover or click the arrow button next to print, then select **Quick Print**.

Adding a Dataset to a Report

When a user wants to display additional data within the same view, a dataset can be added to a report.

To add a dataset to a report:
1. Open a report or select the tab or window containing the report.
2. In the **Files Database** panel, select the folder that contains the required dataset. The user can select multiple datasets by holding the **Ctrl** or **Shift key** and either selecting additional datasets or using the arrow keys.
3. Right-click the dataset and click **Add to current report**. Datasets can also be dragged into the report window.

Signing a Report



A user can sign a report to signify that it has been approved. Reports will need to be re-signed when any changes are made.

To sign a report:

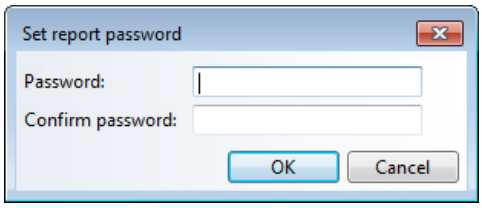
1. Open the report you want to sign, or select it if it's already open.
2. On the **Report** tab, in the **Security** group, click **Sign**
3. Select **Accept changes**, add a description of the changes and insert the **Username** and **Password** to confirm the changes.
4. Click **Sign**.

Locking a Report

Locking a report prevents any changes from being made. Only signed reports can be locked.

To lock a report:

1. Open the report you want to lock, or select it if it's already open.
2. On the **Report** tab, in the **Security** group, click **Lock**.
3. Insert a **Password** and **Confirm** the password.
4. Click **OK**.



To unlock a report:

1. Open the locked report you want to unlock, or select it if it's already open.
2. On the **Report** tab, in the **Security** group, click **Unlock.**
3. Insert a **Password** and **Confirm** the password.
4. Click **OK**.

Organizing Channels

In the MadgeTech 4 Secure Software, users can customize how channels are organized within the Channels panel.

To change how channels are organized in a report:

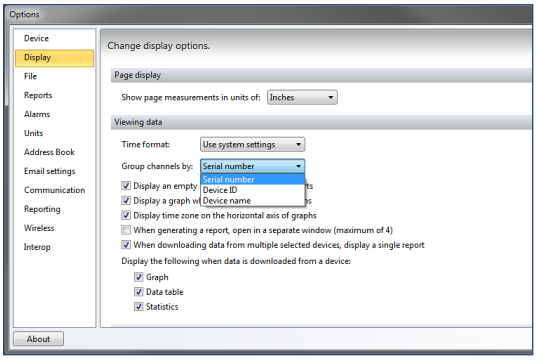
1. Select a report to customize.
2. On the **Report** tab, in the **Channels & Readings** group, click **Channel Grouping** and select one of the following options:
    - Serial Number
    - Device ID
    - Device Name

Setting the Default Channel Grouping

Setting a default channel grouping means that all new reports will use that channels organization setting.

To set the default channel grouping:

1. Click the **File** tab and then click **Options**.
2. Click the **Display** tab.
3. Click the **Group channels by** dropdown menu and select one of the following options: *(shown right)*
    - Serial Number
    - Device ID
    - Device Name



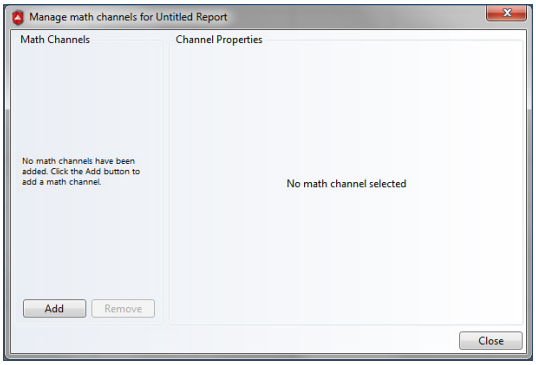
An example of the Options box and the Display tab.

Math Channels

Math channels allow data to be displayed as a calculation of other channels, such as an average or sum. Users are able to **Add**, **Change**, and **Remove** math channels.

To add a Math Channel to a report:

1. Click the tab or window containing the report to add a math channel to.
2. On the **Report** tab, in the **Channels & Readings** group, click **Math Channels**. A **Manage math channels** box will open. *(shown right)*. Users can also right-click on a channel in the **Channels** panel and select **Math Channels** in the context menu.
3. Click the **Add** button. A **Manage math channels** box will appear. A list of available math channels will appear in the **Math Channels** box.
4. Select a channel from the list that appears and click the **OK** button. When a channel is selected, its description is shown to the right of the channel title under **Channel Properties**.
5. Click the **Close** button. The new math channel will now be displayed under the **Channels** panel and in the open report to which it was added.

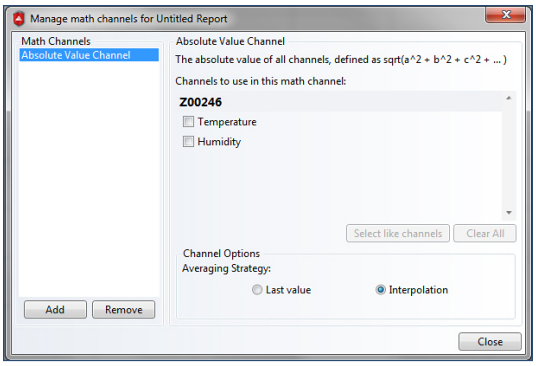


An example of the Manage math channel box.

Changing a Math Channel in a Report

To change a Math Channel in a report:

1. Click the tab or window containing a report with a math channel.
2. On the **Report** tab, in the **Channels & Readings** group, click **Math Channels**. Users can also right-click on a channel in the **Channels** panel and click **Math Channels** in the context menu.
3. Click the math channel to be changed. Make the applicable property edits to the selected math channel.
4. The user can make changes to the math channel properties in the right side of the box. *(shown right)*



An example of the Manage math channels box properties.

Removing a Math Channel from a Report

To remove a Math Channel from a report:

1. Click the tab or window containing the report to remove a math channel.
2. On the **Report** tab, in the **Channels & Readings** group, click **Math Channels**. Users can also right-click on a channel in the **Channels** panel and select **Math Channels** in the context menu.
3. Select the intended math channel to remove.
4. Click **Remove**. The selected math channel will no longer be listed under the **Channels** panel or shown on any reports.
5. Click **Close**.

Changing the Display Unit of a Channel in a Report

The display unit of a channel can be changed in order to modify how the readings are displayed.

To change the display unit of a channel in a report:

1. In the **Channels** panel, select the intended channel to change the display unit.
2. Multiple channels can be selected in the **Channels** panel by holding the **Ctrl** or **Shift key** and either selecting additional channels or using the up and down arrow keys.
3. On the **Report** tab, in the **Channels & Readings** group, click the **Unit** dropdown menu. Select a specific unit from the available list. The selected channel will now be displayed in the selected unit in any report.

Removing a Channel from a Report

When data is no longer needed from a channel, it can be removed from the report. However, if a report only contains one channel, that channel cannot be removed.

To remove a channel from a report:

1. In the Channels panel, select the intended channel to remove.
2. Multiple channels can be selected by holding the **Ctrl** or **Shift key** and either selecting additional channels or using the up and down arrow keys.
3. On the **Report** tab, in the **Channels & Readings** group, click **Remove Channel**. Users can also right-click on the intended channel and select **Remove Channel** in the context menu.
4. To add the channel again, re-add the dataset containing the channel to the report.

Selecting All Channels of the Same Type in a Report

When a report contains multiple channels of the same type, the user can choose to automatically select them all.

To select all channels of the same type in a report:

1. In the **Channels** panel, select the intended channel with the desired type.
2. Right-click the selected channel and select **Select Like Channels** in the context menu.
3. This step can be applied to multiple channels by holding the **Ctrl key** and selecting a channel of another type before right-clicking.

Renaming a Channel in a Report

A channel can be renamed in a report to help distinguish it from other similarly named channels. Naming channels is beneficial to keep things organized.

To rename a channel in a report:

1. In the **Channels** panel, select the intended channel to rename.
2. Click the channel name text. Users can also right-click the channel and select **Rename** in the context menu.
3. Enter a new name for the channel.
4. Press the **Enter key**.

Viewing Device Properties of a Channel in a Report

To see more information about the device associated with a channel, view the device properties. **Device properties** cannot be viewed if the selected channels are associated with different devices.

To view the device properties of a channel in a report:

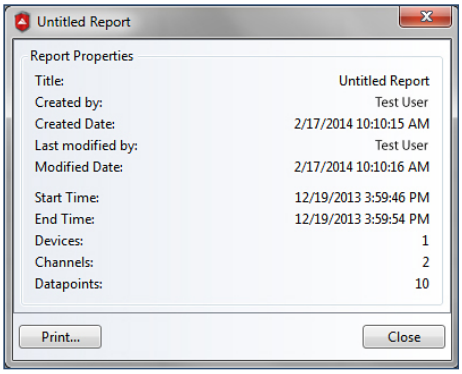
1. In the **Channels** panel, click a channel to select.
   - If the report is a graph, users can also click the channel line.
2. On the **Report** tab, in the **Channels & Readings** group, click **Device Properties**.

Viewing the Properties of a Report

Viewing the properties of a report allows users to see more information about the report. **Report properties** can also be printed.

To view the properties of a report:

1. Click the tab or window containing the intended report.
2. On the **Report** tab, in the **Report Options** group, click **Report Properties**.
3. The **Created by** and **Last modified by** fields are based on the name of the computer user account that was logged in at the time of report creation or modification. *(shown right)*
4. The Report Properties will also include **Electronic Signatures** with the report.



An example of the Report Properties box

Optional Sterilization Data in Report Properties

To view F0 and A0 sterilization data in report **Properties,** it can be added through the **Add/Remove** icon in the **Statistics** group, located in the **Report** tab.

To set sterilization properties of a report:

1. Open or click the tab or window containing the statistics report.
2. On the **Report** tab, in the **Statistics** group, click the **Add/Remove** icon. A **Manage statistics** box will appear.
3. Click the **Add** button. An **Add statistic box** will appear.
4. Add either A0 and/or F0. Scroll down to the bottom of the options box to the right of the **Current Statistics** choices. There will be a check box to **Display sterilization data in report properties**, make sure this is selected and hit **Close**.
5. On the **Report** tab, in the **Statistics** group, select **Report Properties**. The sterilization data for the report will now be displayed.

Moving a Dataset or Report to another Folder

For optimal organization, reports and datasets can be moved to any folder.

To move a dataset or report to another folder:

1. In the **File Database** panel, select the intended folder that contains the dataset or report to move.
2. Within the selected folder, choose the dataset or report to move. The user can select multiple datasets or reports by holding the **Ctrl** or **Shift key** and either selecting additional datasets or using the arrow keys.
3. Complete one of the following steps:
   a. Right-click on the dataset or report and select **Move to folder** in the context menu, then select the destination folder.
   b. Hold and drag the dataset or report into a different folder.

Deleting a Report

Reports and datasets can be deleted at any time. Deleted datasets and reports are moved to the **Deleted Reports** folder and are able to be recovered. Once a report or dataset is deleted from the **Deleted Reports** folder, it is permanently deleted and cannot be recovered.

To delete a dataset or report:

1. In the **File Database** panel, select the intended folder containing the dataset or report to be deleted.
2. In the **Files** list, select the relevant report or dataset to delete. To select multiple reports, hold the **Ctrl** or **Shift key** and either selecting additional datasets, or use arrow keys.
3. Complete one of the following steps:
   a. Press the **Delete key**.
   b. Right-click the dataset or report and select **Delete**.
   c. Drag the dataset or report to the recycle bin.

Recovering a Dataset or Report from a Recycle Bin

Deleted datasets and reports are sent to the software Recycle Bins within the **File Database** panel. This allows users to recover them as long as they haven't been permanently deleted.

To recover a dataset or report from the software recycle bin:

1. In the **File Database** panel, select the appropriate recycle bin, depending on whether a dataset or report is being recovered.
2. In the **Files** list, select the intended report or dataset to recover.
3. Select multiple datasets or reports by holding the **Ctrl** or **Shift key** and either selecting additional datasets or using the arrow keys.
4. Complete one of the following steps:
   a. Right-click on the dataset or report and select **Restore** in the context menu.
   b. Drag the dataset or report into a different folder.
   c. All of the contents of a recycle bin can be restored by right-clicking the recycle bin and clicking **Restore Deleted Items** in the context menu.

Permanently Delete a Dataset or Report from a Recycle Bin

Users can permanently delete datasets and reports from the internal database one at a time or empty a recycle bin to delete all of its contents at once.

To permanently delete a dataset or report from the software recycle bin:

1. In the **Files Database** panel, select the appropriate recycle bin, depending on whether a dataset or report is being deleted.
2. In the **Files** list panel, select the intended report or dataset to permanently delete.
3. Select multiple reports by holding the **Ctrl** or **Shift key** and either selecting additional datasets, or using the arrow keys.
4. Complete one of the following steps:
   a. Press the **Delete key**.
   b. Right-click on the dataset or report and select **Delete**.
   c. The entire contents of a recycle bin can be permanently deleted by right-clicking the recycle bin and selecting **Empty Deleted Items** in the context menu.

Graph Reports

Annotations

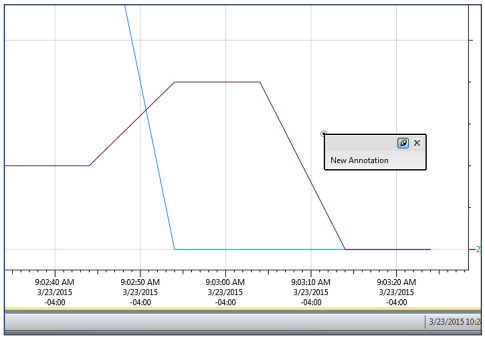
An annotation provides additional information about a graph or reading. Annotations can contain general information about the graph or information about a specific reading. An annotation can be titled by double clicking on its header and changing the text. Annotations in locked graphs cannot be altered. *(Note: Annotations are visible when a graph report is printed but not visible when the report is exported to Microsoft Excel®)*.

Adding an Annotation to a Graph

A graph annotation is not associated with a reading. Users can add multiple annotations. *(shown below)*

To add an annotation to a graph report:

1. Select the graph report requiring the annotation.
2. On the **Report** tab, in the **Channels & Readings** group, click the **Add Annotation** dropdown, and then select **Add Annotation to Graph**. Users can also right-click on the graph report and select **Add graph annotation** in the context menu.
3. Annotations added to a graph report can be toggled on and off for visibility purposes by clicking the pin icon on the top right of the annotation.



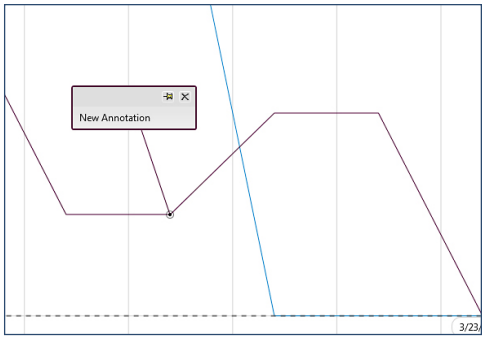
An example of a Graph annotation.

Adding an Annotation to a Reading in a Graph

Users can annotate a specific graph point to provide reading-specific information. Only one annotation can be added to each reading. *(shown right)*

To add an annotation to a reading in a graph:

1. Click the point on a graph to annotate.
2. On the **Report** tab, in the **Channels & Reading** group, click **Add Annotation**, and then select **Add Annotation to Selected Point**. Users can also right-click on the graph and select **Annotate selected point** in the context menu.
3. Annotations added to a reading in a graph report, can be toggled on and off for visibility purposes by clicking the pin icon on the top right of the annotation.



An example of a Reading-specific annotation.

Creating a Timeslice with a Graph

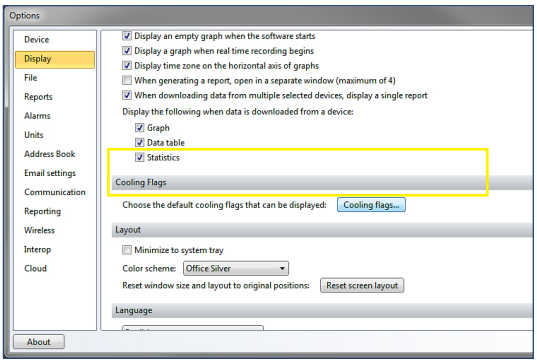
To see data based on a portion of a graph, a **Timeslice** can be created. This will allow data tables and statistic reports to be viewed with only the timeslice data present.

To create a timeslice with a graph:

1. Open or click the tab or window containing the graph of which to create a timeslice.
2. On the **Report** tab, in the **Graph** group, click **Timeslice**.
3. Select the check box next to **Enable Timeslice**.
4. The size of the highlighted area can be adjusted by doing one of the following:
   a. Drag an outer edge of the **Timeslice**.
   b. Change the **Start** or **End value**.
   c. Drag the timeslice to move the highlighted area.
   d. Choose **Select all** to highlight all the data on a graph.

Cooling Flags

Cooling flags are automatic reading annotations that specify when certain temperature thresholds are met. Users can set the default cooling flags, as well as manage cooling flags that have already been created.

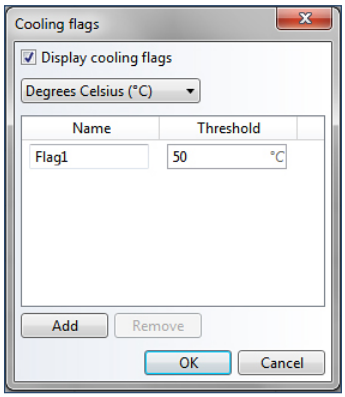


Managing the Cooling Flags of a Graph

Managing the cooling flags of a graph allows the user to freely adapt the graph to meet requirements and simplify the search for changes in the data regarding the variations of temperature.

To manage the cooling flags of a graph:

1. Select the intended graph to manage the cooling flags.
2. On the **Report** tab, in the **Graph** group, click the **Cooling Flags** icon.
3. Do any of the following:
   a. Check or Uncheck the **Display cooling flags** checkbox to toggle when the cooling flags are displayed.
   b. Configure the names and thresholds of the cooling flags to display. The number of flags to display can be adjusted with the **Add** and **Remove** buttons.
4. Set the cooling flags to be the default for all new graphs by clicking **Set as default**.



Setting the Default Cooling Flags

Setting default cooling flags means that all new graphs will automatically use the cooling flags chosen.

To set the default cooling flags:

1. Click the **File** tab, and then click **Options**.
2. Click the **Display** tab.
3. Click the **Set Cooling Flags** button and set the intended cooling flags, click **OK**. *(shown right)*

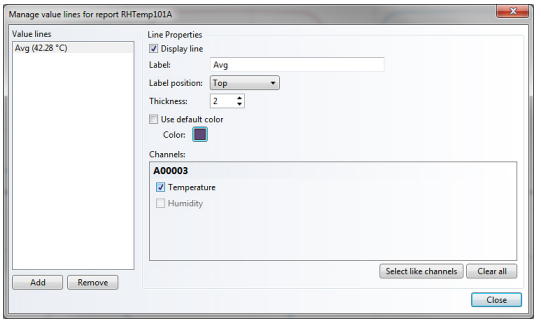
Value Lines

A Value Line is a visual horizontal line on a graph report representing a specific calculation or user selected value within the recorded data. There are 5 options for Value Line types; Minimum, Maximum, Average, Mean Kinetic Temperature *(MKT)* or Fixed Value.

A Fixed Value line represents a specific value on a graph report that is selected by the user and can be changed at any time. Minimum, maximum, average or MKT values are calculations based on the recorded data for that parameter. Existing Value Lines will automatically be converted when the graph unit changes. For example, the value line with an initial value of 0 °C will automatically recalculate to +32 °F when the user changes the units from Celsius to Fahrenheit. When a unit conversion is not possible, the line will not be displayed. Value Lines are saved along with a graph report and are available to the user when that report is reopened. *(Note: When recording data in real time, calculated value lines will automatically recalculate to reflect the new data.)*

To add a value line to a graph:

1. Open or click the tab or window containing the graph report of which to add a value line.
2. On the **Report** tab, in the **Graph** group, click the **Value Lines** icon. Users can also right-click on the graph report and hover over **Value lines** and select **Add value line** in the context menu.
3. Select a line type in the dialog that appears and click **OK.**



To change a value line in a graph:

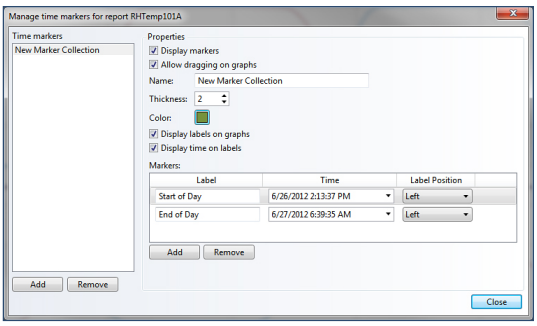
1. Open or click the tab or window of the graph report with Value Lines to be edited.
2. On the **Report** tab, in the **Graph** group, click the **Value Lines** icon. Users can also right-click on the graph report and hover over **Value lines** and select **Manage value lines** in the context menu.
3. Select the value line to be changed from the left pane, then make the applicable property modifications and click Close. *(Note: Users can toggle the visibility of value lines by right-clicking on the graph report, clicking Value lines, then clicking a line in the list. Up to six value lines can appear in the context menu.)*

To remove a value line from a graph:

1. Open or click the tab or window of the graph report with Value Lines to be removed.
2. On the **Report** tab, in the **Graph** group, click the **Value Lines** icon. Users can also right-click on the graph report and hover over **Value lines** and select **Manage value lines** in the context menu.
3. Select the value line to be deleted from the left pane and click **Remove**.

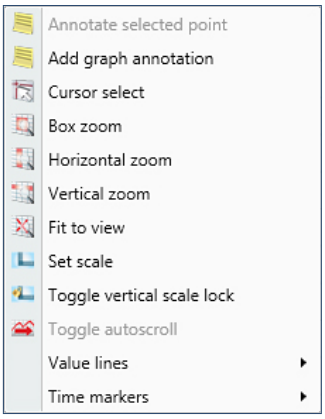
Time Markers

A Time Marker is a visual representation of a specific time within the recorded data. It appears as a vertical line on a graph report or a colored row in a data table. Time markers are organized into collections. Modifications to the properties of a collection will apply settings to all Time Markers within that collection.



To add a time marker in a graph or data table:

1. Open or click the tab or window containing the report to add a time marker.
2. On the **Report** tab, in the **Channels & Readings** group, click the **Time Markers** icon.
3. Click **Add**. Users can also right-click on a graph report and hover over **Time markers** and select **Add time marker** in the context menu. *(Note: To add a time marker to a data table, right-clicking is not an option. Use the Time Markers icon in the Channels & Readings group on the Report tab.)*
4. Select the desired properties and click **Close**.



To change a time marker in a graph or data table:

1. Open or click the tab or window containing the report to change a time marker.
2. On the **Report** tab, in the **Channels & Readings** group, click the **Time Markers** icon. Users can also right-click on a graph report and hover over **Time markers** and select **Manage time markers** in the context menu. *(shown right)* *(Note: To add a time marker to a data table, right-clicking is not an option. Use the Time Markers icon in the Channels & Readings group on the Report tab.)*
3. Click the time marker to change, then make the applicable property modifications and click **Close**. *(Note: Users can toggle the visibility of time marker collections by right-clicking on the graph, clicking Time markers, then clicking an item in the list. Up to six collections can appear in the context menu.)*

To remove a time marker in a graph or data table:

4. Open or click the tab or window containing the report to remove a time marker.
5. On the **Report** tab, in the **Channels & Readings** group, click the **Time Markers** icon. Users can also right-click on the graph report and hover over **Time markers** and select **Manage time markers** in the context menu. *(shown right)* *(Note: To remove a time marker in a data table, right-clicking is not an option. Use the Time Markers icon in the Channels & Readings group on the Report tab.)*
6. Click the time marker collection to remove, or when in a time marker collection, click the time marker to delete then select **Remove**.

Automatically Scroll a Graph during Real Time Recording

When a device is recording in real time, a graph displaying the data can be set to automatically scroll horizontally so the most recent readings are always displayed.

To automatically scroll a graph during real time recording:

1. Select the intended graph report.
2. On the **Report** tab, in the **Graph** group, click **Enable Autoscroll**.

Showing or Hiding the Time Zone on the Horizontal Axis of Graphs

Users can choose to show or hide the time zone on the horizontal axis of graphs. This will display the time zone in which the current graph report was downloaded.

To show or hide the time zone on the horizontal axis of graphs:

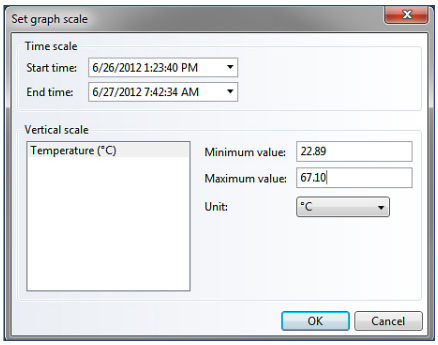
1. Click the **File** tab, and then click **Options**.
2. Click **Display**, then Check or Uncheck the **Display time zone on the horizontal axis of graphs** checkbox, click **OK**.

Locking the Vertical Scale of a Graph

The vertical scale of a graph can be locked to prevent any automatic adjusting from occurring when new data is added. Any values that lie outside the displayed range will not resize the graph view.

To lock the vertical scale of a graph:

1. Select the intended graph report.
2. On the **Report** tab, in the **Graph** group, click **Lock Vertical Scale**.
3. The **Vertical scale** will be locked and unable to be scrolled.



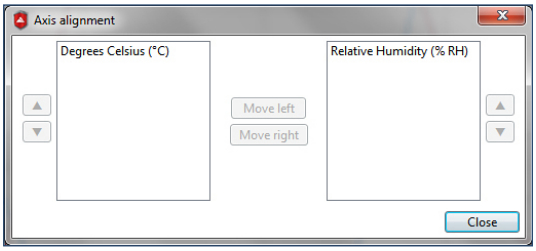
Setting the Vertical or Horizontal Scale of a Graph

Users can set the value, unit, and time on the vertical or horizontal scale of a graph.

To set the vertical or horizontal scale of a graph:

1. Select **the intended** graph report to customize.
2. On the **Report** tab, in the **Graph** group, click **Set Scale**. The following **Set graph scale** box appears.
3. Complete one of the following steps:
   a. Change the **Time Scale** values to determine how the horizontal axis should be displayed.
   b. Change the **Vertical Scale** values to determine how the vertical axis should be displayed.
   c. Change the **Unit** to convert the vertical axis and all associated channels to the selected unit.
4. Click **OK**.

Moving a Vertical Axis of a Graph



To move a vertical axis to the left or right side of a graph:

1. Open the intended graph report, or select it if it is already open.
2. On the **Report** tab, in the **Graph** group, click **Axis Positions**. An **Axis Alignment** box will open. *(shown right)*
3. Complete one of the following steps:
   a. To move an axis to the right side, select one or more axes in the list on the left, and then click the **Move right** button.
   b. To move an axis to the left side, select one or more axes in the list on the right, and then click the **Move left** button.
   c. Drag one or more axis to or from either list for desired display location.

Independently Set the Scale Units of a Graph

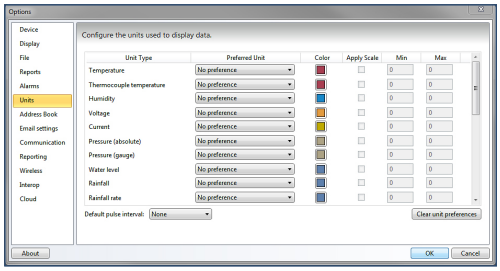
This feature allows users to independently edit the scale and position of individual channels within a graph report to optimize presentation. Scaling preferences are saved along with the graph and are applied when the report is reopened. *(Note: Exporting the graph to Microsoft Excel® will not retain the set scale modifications due to how Microsoft Excel® translates the data.)*

To independently set the scale units of a graph:

1. Open the intended graph report, or select it if it is already open.
2. Hover over the vertical axis of a graph report and hold the **CTRL** key. Click and drag up or down to set the scaling of each channel separately.

Setting the Units and Colors Used to Display Readings

Reading data is normally displayed in the units and colors defined by each channel of a device. Setting unit preferences means that any new data downloaded will initially display in the selected units. Existing data will remain unchanged, and users are also able to clear any preferences previously set.



To set display units and colors:

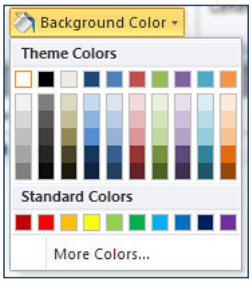
1. Click the **File** tab, and then click **Options**.
2. Click the **Units** tab.
3. Select the unit options to use for new data by clicking the dropdown menus under the **Preferred Unit** column.
4. Select a preferred color to use for new data by clicking the colored square under the **Color** column. *(shown right)*

Clearing Unit Preferences

All unit preferences can be cleared so that the original default units and colors are used.

To clear unit preferences:

1. Click the **File** tab, and then click **Options**.
2. Click the **Units** tab.
3. Click the **Clear unit preferences** button.
4. The units and colors will be returned to the default.



An example of the Background color options.

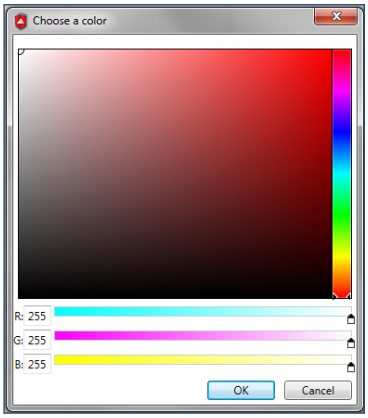
Graph Line Preferences and Background Color

Changing the Background Color of a Graph

A graph's background color can be changed to customize how a graph is visually represented.

To change the background color of a graph:

1. Select the intended graph to customize.
2. On the **Report** tab, in the **Graph** group, click **Background color** and select a color. *(shown right)* If the intended color is not present, click **More Colors…** and the following box will appear to customize a hue. *(shown below)*



An example of the Hue pallet to select more colors.

Setting the Default Graph Background Color

Setting a default graph background color means that all new graphs will be visually represented in the selected color.

To set the default graph background color:

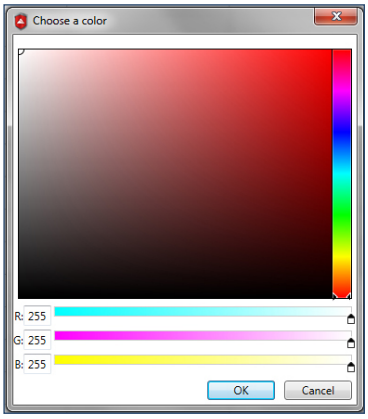
1. Click the **File** tab, and then click **Options**.
2. Click the **Reports** tab.
3. Click the color square next to **Background color**, a **Choose a color** box will appear.
4. Select the desired color, and then click **OK**.
5. The default graph background color will now be the new selection, and all new graphs will appear with this color background.

Changing the Color of a Line in a Graph

Along with changing the background color of a graph, users are also able to change the color of a specific line in a graph.

To change the color of a line in a graph:

1. In the **Channels** panel, select the intended channel to change the color.
2. Multiple channels can be selected in the **Channels** panel by holding the **Ctrl** or **Shift key** and either selecting additional channels or using the up and down arrow keys.
3. On the **Report** tab, in the **Graph** group, click **Line Color** and select a color. The following color options are available. Above is an example of the **Background color** options.
4. If the intended color is not present, click **More Colors…** and the following box will appear to customize a hue. *(shown right)*
5. Now the selected channel will be displayed on the graph in the new selected color.



Line Thickness

In addition to changing the color of a line in a graph, the thickness of a line in a graph can be changed in order to make it stand out more or less. This is helpful when there are many channels displayed on one graph.

Changing the Thickness of a Line in a Graph

To change the thickness of a line:

1. In the **Channels** panel, select the intended channel, or click the line in the graph.
2. Multiple channels can be selected in the **Channels** panel by holding the **Ctrl** or **Shift key** and either selecting additional channels or using the up and down arrow keys.
3. On the **Report** tab, in the **Graph** group, type or select a number between 0.5-20 in the Line thickness box.
4. The thickness of the selected line will change according to the chosen setting.

Setting the Default Line Thickness

Setting a default line thickness means that all channels of a dataset added to a graph use the line thickness setting chosen.

To set the default line thickness:

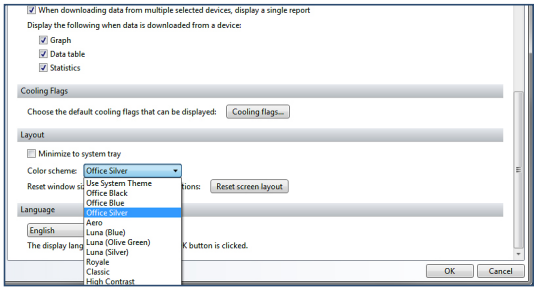
1. Click the **File** tab, and then click **Options**.
2. Click the **Reports** tab.
3. Choose the line thickness using the selector on the line thickness scale. *(shown right)*

Changing the Application Color Scheme

Appearance of the software can be changed by selecting a different color scheme.

To change the application color scheme:

1. Click the **File** tab, and then click **Options**.
2. Click the **Display** tab, and then select a theme from the dropdown menu next to **Color scheme** in the **Layout** section. The image to the right is an example screen of the **Options**, **Display** tab and **Layout** section.



Setting the Default Language

Users can set the default language for the MadgeTech 4 Secure Software.

To change the default language:

1. Click the **File** tab, and then click **Options**.
2. Click the **Display** tab, scroll down to the bottom where language is located. Select the default language from the dropdown menu and select **OK**.

Data Table Reports

Using a data table report allows the user to view the data and channels from the current graph or statistics report in a data table format. In addition, data table reports can also be exported to Microsoft Excel®. Users are also able to generate a blank data report if there is no current report open. For more information on how to generate a data table report, please refer to the **Create a New Blank Report** and **Generating a Report from Another Report** sections of this manual.

Data table reports can also display Time Markers. Time Markers can be added while the data table report is open by clicking the Time Markers icon in the Report tab under the Channels & Readings group.

RHTemp101A* | RHTemp101A* ×

Date	Time	Time Zone	Delta	A00003 Temperature (°C)	A00003 Humidity (% RH)
Start of Day	**6/26/2012 2:13:37 PM**				
6/26/2012	2:13:37 PM	-04:00	-00:00:00	24.90	50.1
6/26/2012	2:14:37 PM	-04:00	+00:01:00	24.90	50.1
6/26/2012	2:15:37 PM	-04:00	+00:02:00	24.90	50.1
6/26/2012	2:16:37 PM	-04:00	+00:03:00	24.91	50.1
6/26/2012	2:17:37 PM	-04:00	+00:04:00	24.91	50.1
6/26/2012	2:18:37 PM	-04:00	+00:05:00	24.92	50.0
6/26/2012	2:19:37 PM	-04:00	+00:06:00	24.91	50.1
6/26/2012	2:20:37 PM	-04:00	+00:07:00	24.92	50.1
6/26/2012	2:21:37 PM	-04:00	+00:08:00	24.92	50.1
6/26/2012	2:22:37 PM	-04:00	+00:09:00	24.92	50.1
6/26/2012	2:23:37 PM	-04:00	+00:10:00	24.92	50.1
6/26/2012	2:24:37 PM	-04:00	+00:11:00	24.92	50.1
6/26/2012	2:25:37 PM	-04:00	+00:12:00	24.93	50.1
6/26/2012	2:26:37 PM	-04:00	+00:13:00	24.93	50.1
6/26/2012	2:27:37 PM	-04:00	+00:14:00	24.93	50.1
6/26/2012	2:28:37 PM	-04:00	+00:15:00	24.94	50.0
6/26/2012	2:29:37 PM	-04:00	+00:16:00	24.94	50.1
6/26/2012	2:30:37 PM	-04:00	+00:17:00	24.94	50.1
6/26/2012	2:31:37 PM	-04:00	+00:18:00	24.94	50.1
6/26/2012	2:32:37 PM	-04:00	+00:19:00	24.94	50.0
6/26/2012	2:33:37 PM	-04:00	+00:20:00	24.94	50.1
6/26/2012	2:34:37 PM	-04:00	+00:21:00	24.94	50.0
6/26/2012	2:35:37 PM	-04:00	+00:22:00	24.95	50.0
6/26/2012	2:36:37 PM	-04:00	+00:23:00	24.95	50.0

An example of a Time Marker made in a Data Table Report to show the beginning of a time frame.

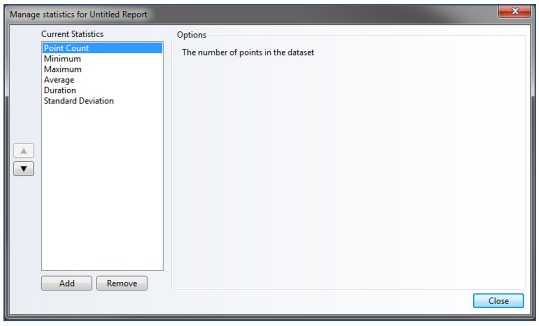
6/27/2012	6:11:37 AM	-04:00	+15:58:00	24.99	50.0
6/27/2012	6:12:37 AM	-04:00	+15:59:00	24.99	50.0
6/27/2012	6:13:37 AM	-04:00	+16:00:00	24.98	50.0
6/27/2012	6:14:37 AM	-04:00	+16:01:00	24.98	50.0
6/27/2012	6:15:37 AM	-04:00	+16:02:00	24.98	50.0
6/27/2012	6:16:37 AM	-04:00	+16:03:00	24.98	50.0
6/27/2012	6:17:37 AM	-04:00	+16:04:00	24.98	50.0
6/27/2012	6:18:37 AM	-04:00	+16:05:00	24.97	50.0
6/27/2012	6:19:37 AM	-04:00	+16:06:00	24.98	50.0
6/27/2012	6:20:37 AM	-04:00	+16:07:00	24.97	50.0
6/27/2012	6:21:37 AM	-04:00	+16:08:00	24.97	49.9
6/27/2012	6:22:37 AM	-04:00	+16:09:00	24.97	50.0
6/27/2012	6:23:37 AM	-04:00	+16:10:00	24.96	50.0
6/27/2012	6:24:37 AM	-04:00	+16:11:00	24.97	50.0
6/27/2012	6:25:37 AM	-04:00	+16:12:00	24.96	50.0
6/27/2012	6:26:37 AM	-04:00	+16:13:00	24.96	50.0
6/27/2012	6:27:37 AM	-04:00	+16:14:00	24.96	50.0
6/27/2012	6:28:37 AM	-04:00	+16:15:00	24.95	50.0
6/27/2012	6:29:37 AM	-04:00	+16:16:00	24.95	50.0
6/27/2012	6:30:37 AM	-04:00	+16:17:00	24.95	49.9
6/27/2012	6:31:37 AM	-04:00	+16:18:00	24.94	49.9
6/27/2012	6:32:37 AM	-04:00	+16:19:00	24.94	50.0
6/27/2012	6:33:37 AM	-04:00	+16:20:00	24.95	49.9
6/27/2012	6:34:37 AM	-04:00	+16:21:00	24.94	49.9
6/27/2012	6:35:37 AM	-04:00	+16:22:00	24.94	49.9
6/27/2012	6:36:37 AM	-04:00	+16:23:00	24.93	49.9
6/27/2012	6:37:37 AM	-04:00	+16:24:00	24.94	49.9
6/27/2012	6:38:37 AM	-04:00	+16:25:00	24.93	49.9
End of Day	**6/27/2012 6:39:35 AM**				

An example of a Time Marker in a Data Table Report to show the end of a time frame.

Statistics Reports

When using a statistics report, statistic calculations can be added, changed, or removed from the report. This will provide optimal information about the report readings and the relationship between the readings.

Adding a Statistic



To add a statistic:

1. Open or click the tab or window containing the statistics report.
2. On the **Report** tab, in the **Statistics** group, click **Add/Remove**. A **Manage statistics** box will appear. *(shown right)*
3. Click the **Add** button. An **Add statistic** box will appear.
4. Select the statistic to add, and then click the **OK** button. When a statistic is selected, the description is show to the right of the statistic title.
5. Click the **Close** button.
6. A new statistic will now be displayed in the selected statistics report.

Setting Default Statistics

Setting the default statistics allows the user to select the statistics that appear by default when creating a report. Default statistic are stored in the MadgeTech 4 Secure Software preferences on the local PC being used and can be modified or deleted by other users with access to the software.

To set default statistics:

1. Click the **File** tab, and then click **Options**.
2. Click the **Reports** tab, and then select **Default Statistics**.
3. From the **Default Statistics** box, select the desired statistics by either **Adding** or **Removing**. To change how they appear in order of importance, highlight the statistic and use the up and down arrows.

Changing the Properties of a Statistic

To change the properties of a statistic:

1. Open or click the tab or window containing the statistics report to change.
2. On the **Report** tab, in the **Statistics** group, click **Add/Remove**.
3. Select the intended statistic to change the properties of from the **Current Statistics** list.
4. Enter the information into the appropriate section under the statistic title. If no parameters are listed, the selected statistic does not require additional information.
5. Click the **Close** button.

Removing a Statistic

To remove a statistic:

1. Open or click the tab or window containing the statistics report.
2. On the **Report** tab, in the **Statistics** group, click **Add/Remove**.
3. Select the intended statistic to remove.
4. Click the **Remove** button.
5. Click the **Close** button.
6. The selected statistic will no longer be listed on the statistics report.

Time to Threshold Statistic

The Threshold statistic option allows users to add statistics regarding the duration of time it took to reach a specific measurement, one value for ascending and one for descending. Multiple statistics can be added.

To add threshold statistics:

1. Open or click the tab or window containing the statistics report.
2. On the **Report** tab, in the **Statistics** group, click the **Add/Remove** icon. A **Manage statistics** box will appear.
3. Click the **Add** button at the bottom to display the **Add statistic** box.
4. Scroll down the list to **Time to Threshold** *(ascending)* or *(descending)*, select and then click the **OK** button to add either one.
5. Click the **Close** button. A new statistic will now be displayed in the selected statistics report.

Sterilization Data

Optional F0 and A0 sterilization data can be added to a statistics report.

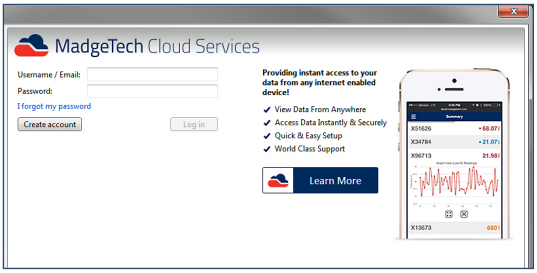
To add sterilization data to a statistics report:

1. Open or click the tab or window containing the statistics report.
2. On the **Report** tab, in the **Statistics** group, click the **Add/Remove** icon. A Manage statistics box will appear.
3. Click the **Add** button. An **Add statistic box** will appear.
4. Add either A0 and/or F0. Scroll down to the bottom of the options box to the right of the **Current Statistics** choices. There will be a check box to **Display sterilization data in report properties**, make sure this is selected and hit **Close**. Sterilization data will now be visible in the statistics report.

Using MadgeTech Cloud Services

The MadgeTech Cloud Hosted data logging platform provides continuous logging and monitoring of temperature, pressure, and humidity data and more, while giving users instant access from any location. With MadgeTech Cloud Services, a wireless data logger system can securely transmit data in real time to be viewed on any internet or data enabled device such as a computer, tablet, or cell phone.

Logging into a Cloud Services Account



To log into a cloud services account:

1. In the MadgeTech 4 Secure Software, click the **File** tab, and then click **Options**.
2. Click the **Cloud** tab.
3. Enter the username and password, then click **Log in**.

Logging out of a Cloud Services Account

To log out of a cloud services account:

1. In the MadgeTech 4 Secure Software, click the **File** tab, and then click **Options**.
2. Click the **Cloud** tab.
3. Under the username and password, click **Log out**.

Enabling Cloud Monitoring for a Device

To enable cloud monitoring for a device:

1. In the MadgeTech 4 Secure Software, select a device that is not currently cloud-enabled.
2. On the **Device** tab, in the **Control** group, click **Enable Cloud Monitoring**. Users can also right-click on the device and click **Enable Cloud Monitoring** in the context menu.
3. After cloud monitoring is successfully enabled, a cloud icon will appear in the Cloud column of the device list. If the device is running in real time, the icon will be colored, otherwise it will appear gray.

Disabling Cloud Monitoring for a Device

To disable cloud monitoring for a device:

1. In the MadgeTech 4 Secure Software, select a device that is currently cloud-enabled.
2. On the **Device** tab, in the **Control** group, click **Disable Cloud Monitoring**. Users can also right-click on the device and click **Disable Cloud Monitoring** in the context menu.
3. After cloud monitoring is successfully disabled, a cloud icon will disappear in the Cloud column of the device list.

Viewing and Monitoring Cloud Data

Options for viewing and monitoring cloud data:

1. From a mobile device or remote PC, navigate to **cloud.madgetech.com**. Type in the username and password and click **Login**.
2. From a mobile device, scan the QR code in the Cloud **Options** menu within the MadgeTech 4 Secure Software.
3. In the MadgeTech 4 Secure Software, on the **Device** tab, in the **Control** group, click **View Cloud Data**. Users can also right-click on a cloud enabled device and select **View Cloud Data** in the context menu.

Scan the QR Code above using a mobile device to access your data.

cloud.madgetech.com

Downloading Cloud Data

To download cloud from a device:

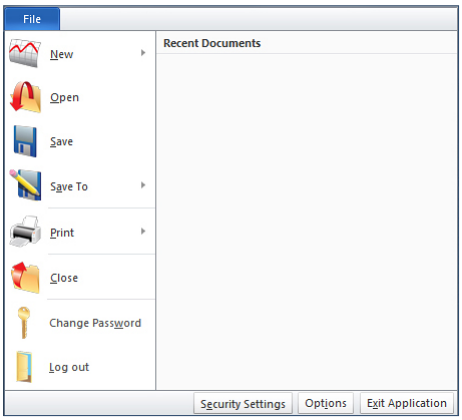
1. In the MadgeTech 4 Secure Software, on the **Device** tab, in the **Control** group, click **Download Cloud Data** .
2. Do any of the following:
   - Click **Select all** to select all data from all loggers.
   - Select a **Start time** and **End time**, then click **Update** to select data within the time range.
   - Click a checkbox next to a logger to select or deselect it.
3. Click **OK** to download the selected data.

Maintenance

MadgeTech data loggers do not require a great deal of maintenance. Like most high-tech devices, they do require services in order to extend the life of the data logger. Information regarding **Firmware** updates will all be detailed in this section.

Firmware Updates

Firmware Upgrade for Data Loggers



Required before the upgrade:

› A good battery installed in the device
› Access to a computer with:
- MadgeTech 4 Secure Data Logging Software installed
- The interface cable necessary for that device *(with necessary drivers installed)*
- The appropriate firmware upgrade image file *(xxxx_###.MTFirmwareImage)* for the device. (*found at* ***madgetech.com/firmware***)

Upgrading the firmware on the data logger:

1. Once the correct firmware file is downloaded (*found at* ***madgetech.com/firmware***) and saved to the computer, launch the MadgeTech 4 Secure Software.
2. Connect the data logger to the PC using the USB interface cable or docking station for that device. For wireless data loggers, ensure that the wireless setting is set to **OFF** mode.
3. In the MadgeTech 4 Secure Software choose **File** > **Options** *(shown right)*.
4. With the Options screen open, hold down the **Shift + Alt** keys at the same time and click **OK**.
5. A password dialog box will appear. Type **technicalsupport** in the password field then click **OK**.
6. Locate the device to be upgraded in the connected devices list, right-click the device and choose **Update Firmware** from the context menu.
7. A prompt will appear, saying that the firmware will be updated on the device and to keep the device plugged in, select **OK**.
8. Browse to the file that was downloaded in step 1 and click **Open**.
9. When the process is complete, a brief message will be displayed and the logger will be removed from the list until the software is restarted.
10. Quit and restart the MadgeTech 4 Secure Software.

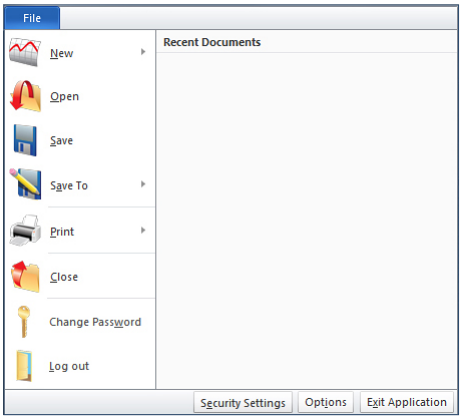
Firmware Upgrade for Interface Cables and Transceivers

Required before the upgrade:

› Access to a computer with:
- Microsoft .NET Framework 4.0 *(or higher)* installed
- The Windows 8 and Windows 10 operating system comes with 4.5 .Net Framework already installed, however, if the .Net 4.0 Framework has not been installed on the PC, it can be downloaded at: http://www.microsoft.com/en-us/download/details.aspx?id=17851
- The appropriate firmware upgrade .zip file for the device *(found at **madgetech.com/firmware**)*

Upgrading the firmware:

1. Download the correct firmware file and save it to the computer.
2. Launch the MadgeTech 4 Secure Software.
3. Connect the interface cable or transceiver to the PC.
4. In the MadgeTech 4 Secure Software choose **File** > **Options** *(shown right)*
5. Navigate to the Communication tab on the left column.
6. In the Detected interfaces box, locate the interface cable or transceiver and select **Update**.
7. A prompt will appear, saying that the firmware will be updated on the device and to keep the device plugged in, select **OK**.
8. Browse to the file that was downloaded in step 1 and click **Open**.
9. Wait for the firmware upgrade process to complete.
10. Repeat these steps for each interface cable or transceiver that needs to be updated.
11. Once the process is complete, quit and restart the MadgeTech 4 Secure Software.



Troubleshooting

This section of the manual contains information that will help users answer questions to correct common connection missteps or other errors while using the software or devices.

Why are my Devices not Appearing?

Sometimes a device connected to the computer does not appear in the **Connected devices** panel. This is often due to a minor connectivity issue. If a data logger does not show up in the **Connected devices** panel, or an error message is received while using a data logger, try the following:

1. Check that the interface cable is properly connected to the PC and the data logger.
2. Ensure that the battery in the data logger is not discharged. For best voltage accuracy, use a voltage meter or multi-meter connected to the battery of the device. Alternatively, try swapping out the battery of a device that is connecting successfully, if one is available.
3. Ensure that no other data logging software is running.
4. Ensure that the **Connected devices** panel is large enough to display devices. This can be verified by positioning the cursor on the edge of the **Connected devices** panel until the resize cursor appears, then dragging the edge of the panel to resize as necessary.

Is this Device Supported?

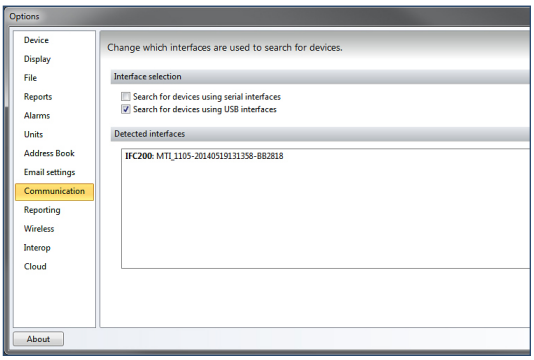
While many of the MadgeTech data loggers are supported in the MadgeTech 4 Secure Software, there are a few that are not. The following is a list of all the devices that are **not** supported in the software:

- **BTIF1000 (Discontinued)**
- **PRTemp101 (Discontinued)**
- **SVR101**

Interface Cables

MadgeTech offers several different types of interface cables. To learn more about each interface cable and the products that are compatible with them, please visit: www.madgetech.com/data-loggers/accessories/interface-cables.html or the product page for the specific device. Check that the software recognizes the interface cable. If a device is not appearing in the **Connected devices** panel, it may be that the interface cable is not properly connected.

Check that the Software Recognizes the Interface Cable



To check that the software recognizes the interface cable:

1. In the software, click the **File** button, and then click **Options**.
2. In the **Options** window, click the **Communications tab**. *(shown right)*
3. The **Detected Interfaces** box will list all of the available communication interfaces. If an interface cable is listed, the software has correctly recognized it and is ready to be used.

Check that Windows Recognizes the Interface Cable

If the software does not recognize the interface cable, there may be a problem with Windows or the USB drivers.

To check that Windows recognizes the interface cable:

1. On the Windows desktop, click **Start**, right-click **Computer** and choose **Properties**. **Windows+Break** can be selected as a keyboard shortcut.
2. Click **Device Manager**.
3. In the **Options** window, click **Communications**. Depending on the type of interface cable in use, choose one of the following steps accordingly:

- **Interface cables that use MadgeTech drivers** (*old IFC200, IFC300, IFC400, RFC1000*):
    1. Click **Universal Serial Bus Controllers**.
    2. Look for an entry for **Data Logger Interface**.
        - If the entry is present, and there are no warning messages or icons, then windows has correctly recognized the interface cable.
        - If the entry is not present, or has an exclamation point icon next to it, USB drivers may need to be installed.

- **Interface cables that use Windows drivers** (*new IFC200/202*):
    1. Click **Human Interface Devices**.
    2. Look for one or more entries listed as **HID-compliant device**. If there are no entries, Windows has not recognized the interface cable.
    3. Right click the entry and choose **Properties**.
    4. In the **Properties** window click the **Details tab**.
    5. From the **Property combination** box, choose the Hardware ID's item.
    6. Verify that the **Hardware ID** string **HID/VID_10C4&PID_8748** is present.
        - If the entry is present, and there are no warning messages or icons, then windows has correctly recognized the interface cable.
        - If the entry is not present, or has an exclamation point icon next to it, USB drivers may need to be installed.

Ensure that the USB end of the Interface Cable is Securely Connected to the Computer

To ensure that the USB end of the interface cable is securely connected to the computer:

1. Identify the type of interface cable being used.
2. Locate the **USB-A** plug of the interface cable.
3. If the interface cable is connected to the PC, unplug it.
4. Wait ten seconds, and then reinsert it.
5. Check to make sure that the blue LED is lit, indicating a successful connection.

Installing the Interface Cable Drivers

1. Identify the type of interface cable.
2. If the interface cable is one of the following types, drivers must be installed for it:
   - IFC200 *(box style)*
   - IFC300
   - IFC400
   - IFC406
   - RFC1000
3. Navigate to the Downloads page of the MadgeTech website.
4. Click **Download USB Drivers**.
5. Save the zip file to the computer, open it and click the file **preinstaller.exe** and follow the steps of the installer.

FAQ

What is the Difference between a Dataset and a Report?

- **A Dataset is the data downloaded from a device. This data cannot be altered.**
- **A Report is what is displayed when a dataset is opened**: a visual representation of the data that can be changed as necessary. Any changes to the report, such as removing channels or using the timeslice feature, are not applied to the underlying datasets. Available report types are graph, data table, and statistics view.

How can a Composite Graph be Generated?

A **Composite graph** can be created by adding multiple datasets to any open graph. For more information on composite graphs, refer to the **Adding a Dataset to a Report** section of this manual.

How are Engineering Units Specified between Software based and Portable Engineering Units?

Only portable engineering units are supported. This is to ensure that engineering units will be recognized from any location without needing to transfer software settings.

How is a Collection of Reports Saved?

Report collections are currently not supported but will be installed in a future release.

Resetting the Screen Layout

To restore all windows to their original positions, reset the screen layout.

To reset the screen layout:

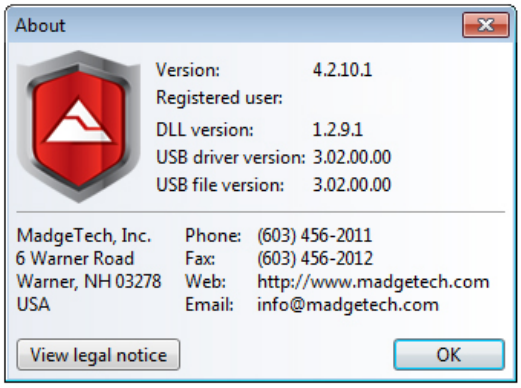
1. Click the **File** button, and then click **Options**.
2. Click **Display**.
3. Click the **Reset screen layout** button.

Retrieving the Version Number of the Software and Other Components

Users can check which version of the software is installed and obtain information about other software components.

To get the version number of the software as well as other components:

1. Click the **File** button, and then click **Options**.
2. Click the **About** button.
3. The following information is available in the **About** window:
   - **Version** is the software version.
   - **DLL version** is the version of the software component that allows device communication.
   - **USB driver version** is the version of the driver that detects USB-based device communication cables.
   - **USB file version** is the version of the software component that allows communication between the software and USB-based device communication cables.
   - The contact information of the company
   - Registered user
   - There is a button available to view the legal notice. *(shown right)*



Error Messages

Error messages could potentially appear when using the MadgeTech 4 Secure Software. To resolve any error message that is not listed here, please contact a member of the MadgeTech Customer Support team.

"Configuration Update Timed Out"

The **Configuration update timed out** message means that the software sent a request to the data logger but did not receive a response.

The following suggestions may help solve the problem:

1. First, attempt to retry the operation. Due to the ultra-low power nature of the data logger, some communications may be missed and will need to be retried.
2. Check that the device is properly connected to the interface cable. For more information, see the **Why are my Devices not Appearing?** section of this manual.
3. Restart the software.

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MadgeTech 4 Secure Data Logger Software

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For questions, write to the above address, email ***info@madgetech.com***, or call 1 *(603)* 456-2011.

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Contact Information

For further information described in this manual, please contact the Sales Department at MadgeTech by phone, email or mail:

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