



# The HACCP Manager™

Rev. 2.0

## Software Installation instructions and Operating Manual

HT3100 Data Collector & GL100 Data Logger



### Cooper-Atkins Corporation

33 Reeds Gap Road • Middlefield, CT 06455-0450 U.S.A. • [www.cooper-atkins.com](http://www.cooper-atkins.com)  
800-835-5011 or 860-347-2256 • Fax: 860-347-5135

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# SOFTWARE INSTALLATION INSTRUCTIONS

**Your computer system must meet the following requirements to install the HACCP Manager software:**

- IBM or IBM compatible, 386 or higher
  - Microsoft Windows 95 or higher
- A 9-pin serial communication port
  - 4 MB of hard disk space
  - Compact Disc drive

**It is recommended that your computer also have:**


- Mouse or other pointing device
- Printer

**If you plan to use both HT3100 and GL100 devices on your system, it is suggested that you have a 2nd 9-pin serial communication port to accommodate both connections.**

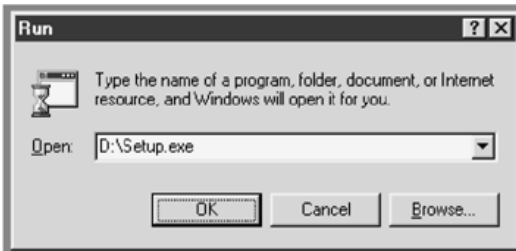
**Before Beginning the Installation...** Save and Close any programs that are running. Disable any anti-virus program that is running before continuing.

Place the HACCP Manager software disc in the disk drive of your computer.

## From Windows:

- Click on .
- Click on **Run**.
- In the "Run" window, type: **<drive>:setup.exe**

where **<drive>** indicates the letter of the drive containing the installation disc. For example, if the letter of your compact disc drive is "D", in the "Open" data field, type:



- Click on the **OK** button, and the Family Manager Installation program will begin.

- Follow the installation instructions. In most installations the default selections should be acceptable. When all files have been copied to your hard drive the installation program will ask if you want to restart your computer.

- Click on **Finish** and wait for your computer to restart. The installation is now complete.

## RUNNING THE HACCP MANAGER FAMILY SOFTWARE



The HACCP Manager Family program allows you to run either the HT3100 Manager, for your temperature auditing requirements, or the GL100 Manager for maintaining your data loggers. To use the HT3100 Manager you will need at least one HT3100 Data Collector device. To use the GL100 Manager you will need at least one GL100 Mini Data Logger.

Run the HACCP Manager Family program by double clicking on the **Cooper Family** program icon, or select the family program from your Windows Programs listing.

The "Welcome Screen" shows two product pictures. Use your mouse to click on the picture, and the selected program will run. Upon exiting the GL100 Manager or the HT3100 Manager program, you will return to the "Family Welcome Screen". You may select another program, or click on the **Close** button to exit the HACCP Manager program.

# THE GL100 MANAGER



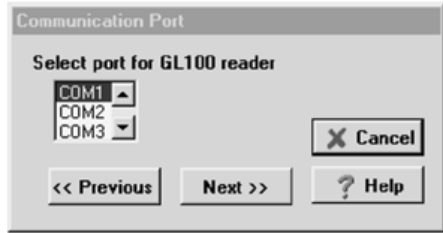
From the Welcome Screen, click on the **Mini Data Logger** picture to run the GL100 Manager program. The first time the GL100 Manager program runs it will ask you to make some initial settings. The “Setup” window will appear.

Click on the **Initial Setup** button. ==>>

Then select the port to which your GL100 reader will be connected.



==>>

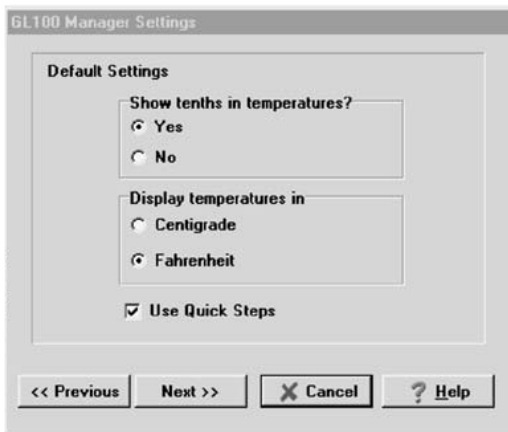


The GL100 reader that comes with the GL100 full system is designed to connect to your computer’s serial communication port. On most computers, the 9-pin serial port is COM1. If you know the number of your COM port, select it in the port selection box. If you are not sure about your machine, leave the selection at COM1, and refer to the “Troubleshooting” section for additional information.

Click on the **Next>>** button to continue.

## The GL100 Manager Settings Window

This window allows you to control how temperature data will be displayed.



### **Show tenths in temperatures?**

If **Yes** is checked, temperatures in the GL100 Manager will be displayed to the nearest tenth of a degree. If **No** is checked, temperatures in the GL100 Manager will be displayed to the nearest whole degree.

### **Display temperatures in:**

If **Centigrade** is checked, temperatures will be in degrees Centigrade.

If **Fahrenheit** is checked, temperatures will be in degrees Fahrenheit.

### **Use Quick Steps:**

If checked, the “Quick Steps” window will appear each time the GL100 Manager program starts. If unchecked, the “Quick Steps” window will not be displayed when the program starts.

When the default settings have been made, click on the **Next>>** button to continue.

## Corrective Action List Editor Window

The “Corrective Action List Editor” allows you to create your own list of corrective actions that you may select from while analyzing data. To build your own corrective action list:



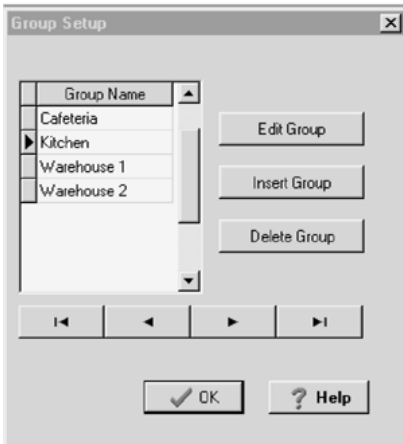
- In the **Action Table**, click on any line that shows “Empty”. All the Empty lines will highlight.
- Click inside the edit box under “Type the Corrective Action here”.
- Type a corrective action statement.
- Click on the **Add** button.

Your corrective action will be added to the list.

- Continue adding your own corrective actions (up to eight may be added) then click on the **Next>>** button to continue. The “Group Setup” window will appear.

## Group Setup Window

The “Group Setup” window allows you to create a list of groups to which you may assign a GL100 Mini Data Logger. Assigning a GL100 to a specific group will help you later on when you need to look at data from a set of devices and create a report. To add a group name to the list:



- Click on the **Insert Group** button.
- Click inside the blank space in the list.
- Type the name of your new group. You can create as many groups as you like.

When finished making groups...

- Click on the **Finish** button.

The initial settings have been completed, and the GL100 Manager “Quick Steps” window is displayed.

## Using Quick Steps



From the “Quick Steps” window you can easily perform these functions: Tag setup, data download, and examine the GL100 logger. If there is not a GL100 in the reader, or if the reader is not connected to the proper COM port, the GL100 Status will display “GL100 Not Detected”. Examine all connections and check the COM port assignment to verify that the setup is correct. When the GL100 Manager program detects a GL100 device, the GL100 status will show “Found GL100”.

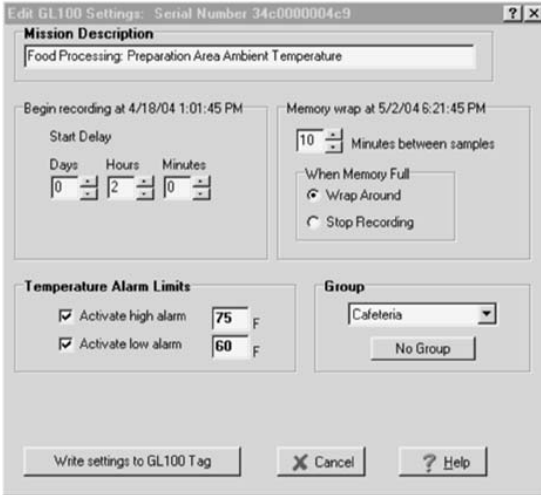
## Prepare GL100 to Record

Place a label in the space provided on the GL100 which contains identifying information such as location used or barcode. (Use Avery label #5267 or similar .5" x 1.75" label.)

To program a GL100 for a mission...

- Click on the **Prepare GL100 to Record** button. The “Edit GL100 Settings” window will open.

## Edit GL100 Settings



**Mission Description:** Type a meaningful phrase or a name in the Mission Description area.

**Scheduling:** “Begin recording at...” indicates the time and date when this logger will begin recording. If you want to delay the start of the data logger, use the **Start delay** boxes to set the delay. As you change the delay time, notice the start date and time above will reflect the new setting.

Set the value in the **Minutes between samples** box. This number can be from 1 to 255. Notice as you change this number, the date and time when the “wrap” or “stop recording” event will occur changes to reflect your settings.

When the data logger memory is full (2,048 records), the logger will either

**Stop Recording** and wait for you to download the data, or it will **Wrap Around**, and start overwriting the oldest records in memory depending on the setting under **When Memory Full**.

- Select **Wrap Around** if you are only interested in the latest data at any moment.
- Select **Stop Recording** if you need to have a record of a certain time period.

(See “Tips on Using the GL100 Logger” section.)

**Temperature Alarm Limits:** You can set high and low limit temperatures for the GL100.

- If you check the **Activate high alarm** box, a small window will appear for you to set the temperature for the high limit. Later on, when you download the data logger to your computer, the temperature history will be shown on a graph. The high alarm you set will appear on the graph as a red line. Any temperatures on the graph that are above the red line have exceeded your high alarm point.
- If you check the **Activate low alarm** box, a small window will appear for you to set the temperature for the low limit. Later on, when you download the data logger to your computer, the temperature history will be shown on a graph. The low alarm you set will appear on the graph as a blue line. Any temperatures on the graph that are below the blue line have exceeded your low alarm point.

**Group:** If you want to assign the GL100 to one of your groups...

Select the group name in the **Group** pulldown box. (Groups are established during the initial setup phase. See “The Group Setup Window” section.)

- Click on the small black triangle near the right side of the pulldown box and the group list will be shown. If there are many groups in the list, you may need to use the scroll bar to see some of them.
- Find the group you want and click on it. The group list will close and the group you selected will be showing in the pulldown window. If you change your mind and don't want to have the GL100 be a member of a group, then click on the **No Group** button and the pulldown box will be blank.

When you are sure all the settings in the window are correct...

- Click on the **Write settings to GL100 Tag** button. A message window warns you are about to change the settings in the GL100. Click on the Yes button to send the new settings to the GL100. If you click on the No button you will cancel the programming operation. A message indicates the programming was successful, and you return to the “Quick Steps” window.

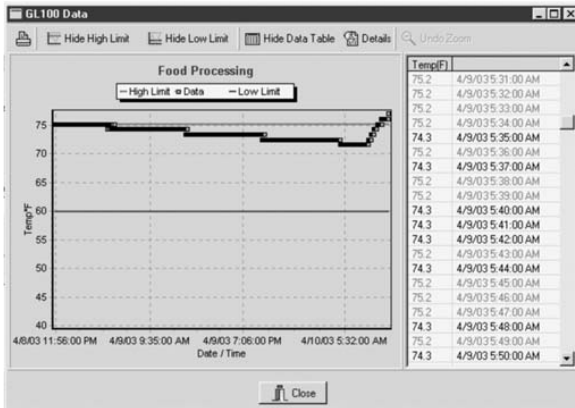
## Read Data from GL100

To transfer collected data from the GL100 to your computer, click on the **Read Data From GL100** button of the “Quick Steps” window. The “Download Temperature Data” window will appear.



The info box displays general information about the data in the GL100.

- Click on the **View Data** button to see a graph of the GL100 data before you save the data to your computer. The “GL100 Data” window displays a graph of the data that is either in the GL100, or that you have previously downloaded to your computer.



If you set high and low alarm points in the GL100, the graph will show a red line for high, and a blue line for low. You can click on the **Hide High Limit** or **Hide Low Limit** buttons to turn off either one. If you have only programmed one alarm point, or no alarm point, then the Hide button will be disabled (grayed out).

- Click on the **Details** button to see how many points are in the data set, and how many of those points were above or below alarm points.
- Click on the **Details** button again to hide the details panel.
- Click on the **Show Data Table** button to see a listing of each data point in the data set, including the temperature and the date and time of the record. Notice that any temperatures that exceeded the high alarm point will have red text, and those that exceeded the low alarm point will have blue text.

**Zoom:** You can enlarge a specific area in the graph by positioning the mouse pointer inside the graph in the upper left-hand corner of the selected segment of the graph.

- While holding down the left mouse button, drag the mouse cursor down and to the right to create a “zoom rectangle”. When you release the mouse, the graph will zoom into the created rectangle. To zoom in more, repeat the procedure.
- To zoom out, click on the **Undo Zoom** button near the top of the window.

After viewing the data graph, click the **Close** button.

- Click on the **Save** button to save the GL100 data on your computer, or click on the **Cancel** button to get back to the “Quick Steps” window without saving the data. The information in the GL100 is still in the logger and the GL100 will continue recording whether or not you saved the data.

## **Examine GL100 Settings**

If you need to see how a particular GL100 has been programmed you can put the GL100 into the reader and click on the **Examine GL100 Settings** button. The “GL100 Settings” window will open, showing the status of the GL100.

GL100 Settings: Serial Number 34c00000115d

**Mission Description**  
Food Processing

**Data Collection**  
Minutes between samples: 1  
When Memory Full: Wrap Around

**Date and Time**  
Current Time: 4/10/03 10:03:51 AM  
GL100 Time: 4/10/03 10:14:16 AM

**Temperature Alarm Limits**  
High Alarm Set Point: 75.2°F  
Low Alarm Set Point: 59.9°F

**Status**  
Tag was started at 4/6/03 9:57:00 AM.  
Sampling is currently active.  
5778 samples pending. Sampling has wrapped around.

**Group**

Buttons: Prepare GL100 to Record, Read Data From GL100, Put GL100 to Sleep, Wake up GL100, Close, Help

From this window you can also...

- Download the GL100 by clicking on the **Read Data From GL100** button.
- Change settings in the GL100 and begin a new mission by clicking on the **Prepare GL100 to Record** button.
- If you won't be using the GL100, you can turn off the clock (this preserves the battery power while the GL100 is not being used) by clicking on the **Put GL100 to Sleep** button. The GL100 will be awakened the next time you program it for a mission, or click on the **Wake up GL100** button.

Click on the **Close** button to return to the “Quick Steps” window.

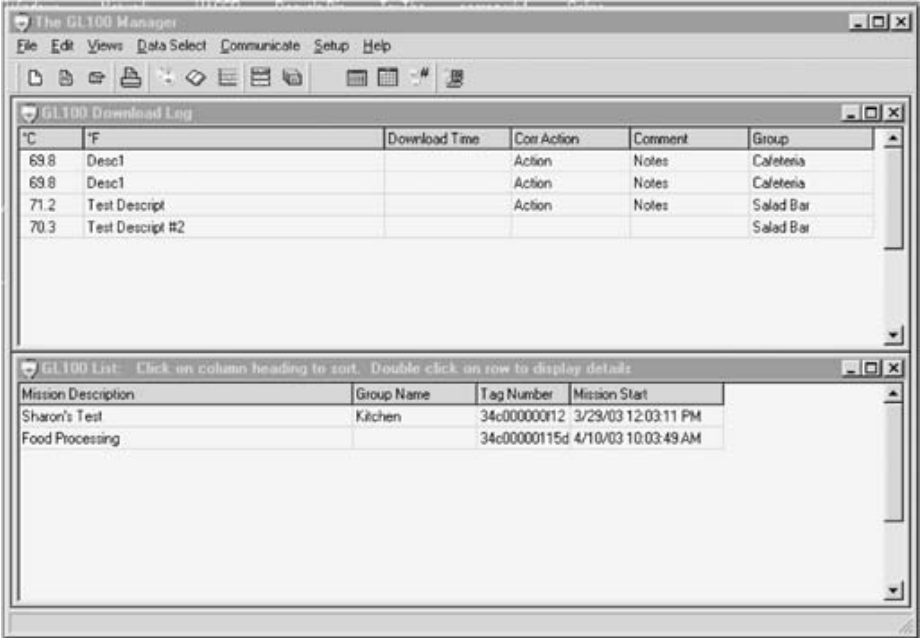
**Exit Quick Steps:** Behind the “Quick Steps” window is the GL100 Manager main program. From the “Quick Steps” window, click on the **Exit Quick Steps** button. The “Quick Steps” window will close and you will see the main program.

**Exit GL100 Manager:** Click on this button to close the GL100 Manager program and return to the HACCP Manager Family window.



# The GL100 Main Program

The GL100 Manager Main Program contains a main menu bar, a tool button bar, and two tables.



**The main menu bar**, located at the top of the program window, is divided into sections; each section has within it, a set of commands.

**The tool button bar**, located directly under the main menu bar, offers convenient access to some of the more commonly used main menu commands. All of the icons on the tool bar have an equivalent command under one of the main menu sections. By hovering over each icon with the pointer, a text description will appear.

**The GL100 List** contains an entry for each GL100 Tag that has been programmed for a mission.

When you program a Tag, the mission settings will be listed in this table. To view more detail for a specific GL100, double click on the table entry, and the "GL100 Details" window will appear.



To hide the "GL100 Details" window...

- Click on the **OK** button

To delete an entry in the GL100 List...

- Highlight the entry you want to delete.
- From the main menu, click on **Edit**.
- Click on **Delete highlighted rows**.

A message box appears asking you to confirm the deletion.

- Click on the **OK** button to delete the selected entry, or click on the **Cancel** button to keep the entry.

The **GL100 Download Log** contains an entry for each time you downloaded a GL100 Tag to your computer. To view more detail for a specific download, double click on the table entry, and the “Comments and Actions” window will appear.

From this window you can view or select corrective actions and comments, or view the temperature data graph.

To choose a corrective action from the list, click on the **Select Corrective Action** button. The “Corrective Actions List” will open, and you may select one entry from the list.

Then, if desired, enter a comment about this data set by clicking inside the “Enter comment” window and typing any notes or comments about the data in this download.

If you need to look at the graph of the data to complete the comments...

- Click on the **View Data** button. The graph window will open and allow you to examine the data before making notes.
- Click on the **Close** button to return to the “Comments and Actions” window, then enter notes, etc.

When done, click on the **OK** button to save your notes.

### **IMPORTANT!**

Neither comments nor corrective actions can be edited or added to once an entry has been saved, so be certain you have written all you need to before clicking the **OK** button. If you add a comment, but not a corrective action, the comment is permanent, but you can come back later and enter a corrective action. The same is true if you enter a corrective action but not a comment. When the “Comments and Actions” window closes, you will notice entries in the “GL100 Download Log” table on the Main Program. If you have added a comment, the “Comment” column for this entry will contain the word “Notes”, indicating a comment is present. If you have added a corrective action, the “Corr Action” column will contain the word “Action”.

To delete an entry in the “GL100 Download Log”, highlight the entry to delete.

From the main menu bar...

- Click on **Edit**.
- Select **Delete highlighted rows**. A message box appears asking you to confirm the deletion.
- Click on the **OK** button to delete the selected entry, or...click on the **Cancel** button to keep the entry.

**TIP:** When deleting an entry in either table, if you want to delete more than one at a time, hold down the “Ctrl” key on the keyboard while clicking on the entry. This will highlight multiple rows, then use the **Delete** command from the **Edit** menu as described earlier.

## **Backing up Your File**

Backing up your file is vital to ensuring your data is safe. The GL100 Manager provides a simple-to-use backup utility that will copy your data to your hard drive or to a floppy disc or other storage media.

To create a backup, from the main menu bar, click on **File**, then click on **Create Backup**. The “Create Backup Directory” window will open.



The default path is shown near the **OK** button. If you want to save the backup to a different path...

- Click on the **Select Alternate Location** button.

An “Open Backup” dialog window will appear, allowing you to select the path and disk drive to which your backup will be saved. The path you create is shown near the bottom of the window.

When you have selected the backup path...

- Click on the **OK** button to create your data backup.

When complete, the message “Backup completed” will appear.

- Click on the **OK** button to continue. Your data now has been saved to the data path you selected.

## **Restore a Backup Data Set**

To view the data saved in your backup file...

- Click on **File** from the main menu bar.
- Click on **Open backup**.

The “Open Backup” window will display the directory path.

- Navigate to the location of your backup data set
- Click on the **OK** button. A message will display “Backup Open”.
- Click on the **OK** button. The data now showing in the GL100 Manager program is your backup.

The main title bar will indicate the backup data path. The backup data set is normally read-only, which means you are not permitted to make any changes to it. However, there is a check box on the “Open Backup” window that, if checked when you open the backup data set, will permit you to make changes or even add new downloads to the backup data set. The checkbox is marked **Allow Modification of Backup**.

To close the backup data set from the main menu...

- Click on **File**, then click on **Close Backup**. The backup will be closed, and the regular data set will be reopened.

### ***IMPORTANT!***

If you close the GL100 Manager program with a backup data set open, the next time you run the GL100 Manager the regular data set will be opened, not the backup.

# USING THE GL100 MINI DATA LOGGER



The GL100 Mini Data Logger's water resistance and small size make this device ideal for many applications where long-term data collection is required.

Operation of the GL100 Mini Data Logger simply requires the following:

- Programming of the Tag via GL100 Manager software
- Place it where you want it to collect temperature data.

## Tips on Using the GL100

### ***Why use Start delay?***

If you want to be sure the GL100 is in place before the first reading is taken, use the **Start delay**.

### ***When do I use wrap versus stop?***

If you are only interested in capturing the most recent data, use **Wrap** when full. However, if you are interested in capturing only the first 2048 data points and then have the GL100 wait for you to retrieve it, then use **Stop** when full.

### ***How do I know when the logger memory will be full?***

When you are setting up the GL100, the heading of the interval setting box will indicate the time and date when either memory wrap or stop will occur.

### ***How do I get as many data points as I can in the time that I want?***

Watch the heading of the interval setting box as you change the interval value. When the time and date matches your total mission time, the most readings will be taken. Note: this assumes the GL100 will stop recording when the memory is full.

### ***How do I get the "Quick Steps" window back?***

The "Quick Steps" window appears when you start the GL100 Manager program if the "Use Quick Steps" checkbox in the "Setup" window is checked. If you clicked on the "**Exit Quick Steps**" button on the "Quick Steps" window and are in the main program, from the main menu bar, click on **Views**, then click on **Quick Steps**. The "Initial Settings" wizard prompt will appear, allowing you to run it, or you may click on the **Skip Initial Setup** button and the "Quick Steps" window will open.



From the “HACCP Manager Welcome” Screen, click on the **Temperature Data Collector** picture to run the HT3100 Manager program.

The first time the HT3100 Manager program runs, it will ask you to make some initial settings. Follow the instructions listed in the “First Time Use” window. When you have made the initial settings, you may click in the checkbox so that this “First Time Use” window will no longer appear when you start the HT3100 Manager.

The HT3100 Manager main program contains a **main menu bar**, a **tool button bar**, and **four tables**.

**The main menu bar**, located at the top of the program window, is divided into sections; each section has within it, a set of commands.

**The tool button bar**, located directly under the main menu bar, offers convenient access to some of the more commonly used main menu commands. All of the icons on the tool bar have an equivalent command under one of the main menu sections.

**The “Log of Data Downloads”** window displays data set information that you have downloaded from a device. Each time you download data from a device, the HACCP Manager captures a record of the data in the “Log of Data Downloads” window. This window displays information on each data set with these column headings:

Data Set:	The unique number associated with each data set.
Date :	The date of the upload from the Device.
Time:	The time of the upload from the Device.
Data Points:	The number of data points or readings contained in the dataset.
Description of Data Set:	The description, up to 40 characters, that you specified at download time.
Device Number:	The number associated with each individual device (HT3100), ranging from 1 to 253.

### **Location Tabs Information Window:**

The “Location Tabs Information” Window displays information about Tabs that you have programmed using this copy of the HACCP Manager software. It uses these headings:

Location Name:	A name of up to 12 characters that identifies the location of the tab. You specify this name when you program the Tab.
High Temp:	The high temperature (if any) that will trigger an alarm.
Low Temp:	The low temperature (if any) that will trigger an alarm.
Description:	A description of up to 40 characters of the tab location. You give this description when you program the Tab.
Tab Number:	A unique number associated with the Tab. It is built into the Tab when it is manufactured and cannot be changed.

**IMPORTANT!** An individual copy of the HACCP Manager software along with its associated devices and tabs forms a functional set. You cannot program a tab with one copy of the software and then try to use it with another copy, even on the same computer. The same is true for devices. If you do try to use a single device or tab with multiple copies of the HACCP Manager software, the results are unpredictable, and almost certainly confusing.

## Device Information Window

Displays information about the devices you have programmed with the current copy of the HACCP Manager software. The display uses these headings:

Device Num:	A unique number associated with the device.
Device Name:	A name of up to 12 characters that appears on the device display. You specify this name when you program the device.
F/C:	Whether temperatures appear in Fahrenheit or Centigrade on the device display.
Probe:	Probe type (can be J, K or T).
Description:	A description of up to 40 characters. You specify this description when you program the device.
Locked:	Whether or not this device is locked. That is, if the field user of the device is prevented from making any setting changes.
Tenths:	Whether or not temperature display will include tenths of a degree in the device display.

**IMPORTANT!** An individual copy of the HACCP Manager software along with its associated devices and tabs forms a functional set. You cannot program a device with one copy of the software and then try to use it with another copy, even on the same computer. The same is true for tabs. If you do try to use a single device or tab with multiple copies of the HACCP Manager software, the results are unpredictable, and almost certainly confusing.

## Temperature Data Window:

Displays data set information that you have downloaded from a device. The display is cumulative, with each newly downloaded data set adding on to the end of the previous one. The display uses these column headings:

Alarm:	Either an "H" or an "L" to indicate that the high or low alarm point has been exceeded; or an * to indicate that the record represents a calibration of the device.
Temp:	The temperature that was recorded.
Location:	The location or name assigned to the tab. For calibration records, "Factory" indicates restoration of the factory settings and "Calibrate" indicates calibration of the device in the field.
Date:	The date the temperature data was recorded.
Time:	The time the temperature data was recorded.
Data Set:	The number assigned to the data set by the HACCP Manager.
Point Num:	The data point number, incremented in the device after each successive temperature record, starting with 1 for each data set.
Comment:	An optional comment field for data with alarms, makes a record of how an alarm condition was handled.
Tab Number:	A unique number associated with the Tab.

The HACCP Manager displays in red any row that contains an alarm for which the "Action Taken" has not yet been recorded. To record "Action Taken" or another memo...

- Double click the row with the alarm. The "Actions Taken" dialog box appears.
- Select a Corrective Action.
- Enter your comments and click **OK**.

When you return to the "Temperature Data" window, the row will no longer be displayed in red.

**IMPORTANT!** Once you enter a description in the "Actions Taken" dialog box and click **OK**, you cannot edit it at a later time.

## Graphing Your Data

From the main menu, click on **Views**, then click on **Graph**. When the “Graph” window opens, all data that is currently displayed in the “Temperature Data” window will be plotted. If that data is from more than one location Tab, then the “Graph” window will indicate “Multiple Tabs Selected” in the status bar.

**To select data from one Tab only**, in the “Graph” window:

- Click on the **Select Tab** menu option. The “Tab Selection” window will open, listing all the tabs from the “Location Tabs Information” window.



- Click on the Tab you want to graph.
- To select data within certain dates, use the **Date Range Selection** options.
- When you click either the **Use beginning date** or the **Use ending date** checkbox the date window appears, allowing you to set the desired date criteria.

When the selections are complete...

- Click on the **OK** button.

You should see all the data for the selected location tab plotted in the “Graph” window.

**To change the appearance of the graph, adding features like 3-D effect and background gradient shading...**

- Click on the **Settings** menu option. Change the graph settings to produce the look you want.

**To print or export the graph, from the menu bar...**

- Click on **File** then click on **Print**, and choose either “Landscape” or “Portrait” paper orientation.

**To export the graph image to a bitmap or Windows Metafile format.**

- Click on **File**
- Click on **Save** and select the desired image format. The “Save Graph to File” dialog window opens, and allows you to select the directory where the graph file will be saved.
- In the **File Name** edit box, enter a name for the graph file.
- Click on the **Save** button to complete the save operation.

**To close the graph window...**

- Click on the **File** menu option, then click on **Close**, or you can click the **X** in the upper right corner of the “Graph” window.

# THE HT3100 DATA COLLECTOR

**Corrective Action List Editor** allows you to create your own list of corrective actions that you may select from while analyzing data. To build your own Corrective Action List...

- Click on **Setup** from the main menu bar.
- Click on **Corrective Action List** In the **Action Table**.
- Click on any line that shows “Empty”. All the “Empty” lines will highlight.
- Click inside the edit box under **Type the Corrective Action here**.
- Type a corrective action statement.
- Click on the **Add** button. Your corrective action will be added to the list.

Continue adding your own corrective actions (up to eight may be added).

- Click on the **OK** button to close the window.

**The “Group Setup” window** allows you to create a list of groups to which you may assign an HT3100 HACCP Manager. Assigning an HT3100 to a specific group will help you later on when you need to look at data from only certain devices and to create a report.

- Click on **Setup** from the main menu bar
- Click on **Groups**. The “Group Setup” window will open.



## To add a group name to the list...

- Click on the **Insert Group** button.
- Click inside the blank space in the list, then type the name of your new group. You can create as many groups as you like.

## To edit the name of an existing group...

- Highlight the group in the table.
- Click on the **Edit Group** button.
- Make changes to the group name. When edits are complete...
- Click on a different group name in the table, and your changes will be saved.

## To delete an entry in the group table...

- Highlight the group to delete.
- Click on the **Delete Group** button. The highlighted group will be removed from the table.



## When finished making and editing groups...

- Click on the **OK** button to close the window. If you click **OK** before saving changes, a dialog box will appear and ask if you want to save changes.
- Keypad:** The keypad has four buttons to control the operation of the HT3100.
- Probe Jack:** The HT3100 probe jack accepts type K, J, or T miniature thermocouple plugs. The 8410MK probe supplied with the HT3100 is type K.
- Probe Storage:** The handle of the 8410MK probe slides onto the probe storage feature to hold the probe while not in use, or for one-handed temperature measurement.
- Tab Reader:** The tab reader permits the transfer of data to and from the location tabs. Place the tab reader against the location tab and hold until the HT3100 beeps.
- Display:** The display window presents data and messages that the user needs to operate the HT3100.
- Battery:** The battery compartment is located on the back of the HT3100. To open the battery compartment, using a straight screwdriver, turn the battery door lock 1/4 turn counter-clockwise.
- Computer Port:** The computer port connects to the download cable and permits data transfer between the host computer and the HT3100.
- Download Cable:** The download cable connects between the HT3100 and the host computer to permit data transfer.
- Cleaning:** Wipe the outside of the HT3100 with a soft damp cloth only. Never place it in a sink or dishwasher.

## Using the HT3100

- Press the **ON/OFF** button to activate the HT3100.
- Hold **ON/OFF** down until the display starts (about 1/2 second). The HT3100 Setup Information is displayed. The Setup Information includes:

Device Name:	The 12 characters used to identify the HT3100
Device #:	A unique number assigned to the HT3100 by the computer during device programming
Temperature Units:	Set to either °F or °C
Probe Thermocouple Type:	Set to type K, J or T (default is type K)
Temperature Display Resolution:	Set to XXX to display whole degrees only or, XXX.X to display tenths of a degree

The Current Time Setting

The Current Date Setting

After the setup information is displayed, the HT3100 is ready for use. The upper line of the display shows the device name. On the lower line, the leftmost four characters show the record status (the number of records currently stored in the HT3100 memory – the HT3100 can hold up to 2,000 records.) The rightmost characters display the current temperature reading.

(For more details on setup information see the online Help File “Programming a New Device” in [“Using the HACCP Manager Software”](#).)

## Reading A Temperature

The temperature reading is displayed on the lower line of the HT3100 display window. With the probe plugged into the HT3100 probe jack, place the tip of the temperature probe into the material to be measured. Wait approximately 3 to 10 seconds, depending on the consistency of the material (faster in moving liquid, slower in still air).

## Recording A Temperature

Data stored in an HT3100 record tells the HACCP Manager software three things:

This **location** was this **temperature** at this **time and date**.

Creating a record requires three steps:

- First, tell the HT3100 the location. Touch the Tab Reader on the HT3100 to the programmed Location Tab. The HT3100 will beep once to indicate that it has successfully read the Tab, and will show the Tab location name on the upper line of the display. The beep also starts a two-minute timer inside the HT3100 (for more on the timer see “Cancel Record” below).
- Next, read the temperature of this location. Obtain a stable temperature reading of this location by following the steps above in “Reading A Temperature”.
- Press the **RECORD** button on the HT3100 keypad. The HT3100 will beep to indicate that the record has been stored. The clock inside the HT3100 will provide the time of day to the nearest minute. The upper line of the display will go back to showing the device name. The record status number on the lower display line will increase by one.

That’s all there is to it.

**Note:** When status reaches 2,000 (2,000 records have been recorded) the display will show “Memory Full”.

## Alarm Condition

The Location Tab is programmed with the name of a location, and its alarm limits. When the HT3100 Tab Reader reads a Location Tab, if the temperature exceeds a limit, while pressing the **RECORD** button, the HT3100 will issue a long beep (three seconds), and the lower line of the display will show “High Alarm” or “Low Alarm”, whichever is appropriate. Press the **MAX ALARM** button. The HT3100 cannot be used again until the **MAX ALARM** button is pressed. This feature helps ensure that the person taking readings is instantly aware of the alarm condition and takes accountability. Later, when the data is downloaded to the HACCP Manager software, the alarm record will display in red text on the computer screen. (See “Actions Taken Window” in “Using The HACCP Manager Software”).

## Cancel Record

There are two ways to cancel the record operation before pressing the **RECORD** button:

- Do not press the **RECORD** button before the two-minute timer times out, *or*
- Press the **MODE** button.

In either case the HT3100 will sound a short beep to indicate that the record operation has been cancelled, and the upper display line will revert to the device name.

## Change Setup

Setup Information controls how the HT3100 displays data, and the type of thermocouple probe that must be used. Setup Information is stored in the HT3100 by the HACCP Manager software. To change the Setup Information in the HT3100...

With the HT3100 turned off, hold down the MODE button, then turn the HT3100 on.

- The upper line of the HT3100 display will show “Setup”, and the “°F” (or “°C”) symbol is displayed on the lower line. Release the MODE button.
- To toggle the “°F” to “°C” (or “°C” to “°F”) press and release the MODE button. Do nothing for five seconds so the HT3100 will recognize this setting. Next, the probe type letter ‘K’ will appear.
- To toggle to type ‘T’ or to type ‘J’, press and release the MODE button until the desired probe type letter is showing.

**Note:** The probe type letter must match the probe type that is connected to the HT3100, or reading errors will occur. Wait five seconds. To toggle the temperature display from whole degrees (“XXX”) to tenths of a degree (“XXX.X”) press and release the **MODE** button. Wait five seconds. The display will show “Setup Complete”. The HT3100 will reinitialize, allowing verification of the new setup information.

**Note:** If the word “Setup” does not appear using the above procedure, then the device is locked by the HACCP Manager. If the Setup Information is locked, it cannot be changed without being connected to the computer. (For more details on Setup Information, see “Programming a new device” in “Using The HACCP Manager Software”).

## **Probe Calibration**

When changing probes, it is recommended that the new probe be calibrated at 32°F (°C).

Place the tip of the probe into 32°F. With the HT3100 turned on and measuring temperature...

- Press and hold the **MODE** button for five seconds. The upper line of the display will show ‘Calibrate’.
- Release the **MODE** button and press the **RECORD** button. The upper line of the display will show ‘Done’.

As a safety measure, if the temperature reading on the HT3100 is not within  $\pm 5^\circ$  of 32°F (27°F to 37°F) the calibration adjustment is not allowed, and the word ‘Abort’ is shown instead of ‘Done’ during the above procedure. If the reading is not within  $\pm 5^\circ$  of 32°F, the HT3100 or probe may require service.

If necessary, the original factory calibration can be restored to the HT3100 by the following method:

- With the HT3100 turned on, press and hold the **MAX ALARM** button for five seconds. The upper line of the display will show ‘Restore’ then ‘Done’, and a short beep will confirm factory calibration has been restored.

Later, when the data is downloaded to the HACCP Manager software, the calibration record will be shown on the computer screen in blue; ‘Zero’ indicates probe calibration, ‘Factory’ indicates restore factory settings (see “Temperature Data Window” in “Using The HACCP Manager Software”).

***Hint:** A properly prepared ice slurry is a reliable way to create a bath close to 32°F (0°C). Use crushed ice and just enough water to fill the gaps between the pieces of ice (distilled water is best). Allow ten minutes for the bath temperature to stabilize. Position the probe tip in the center of the bath, not near the side or edge.*

## **Replace Battery**

When the battery that powers the HT3100 gets near the end of its life, the display will show “Low Battery” each time a record is stored. When this message first appears there is still enough battery life available to run the HT3100 for several hours, but it is recommended that the battery be replaced as soon as possible. If the battery power drops too low, data cannot be stored reliably, and the display will show ‘Replace Battery’ and will not permit further use until the battery is replaced. Use a straight blade screwdriver to turn the battery door lock 1/4 turn counter-clockwise. The door will hinge outward and detach from the HT3100 case body. Replace the battery using a NEDA 1604 or equivalent.

## **Troubleshooting**

The most common problem occurs when your computer’s serial port is being used by another device (like a modem or a bar code scanner, etc.) or program (like banking software that uses your modem) at the same time as the HACCP Manager device is trying to use it. You must deactivate the other device so that the HACCP Manager device is the only one using the port at the moment. If you cannot determine the cause, contact Technical Service at Cooper-Atkins Corporation for assistance (See “[Technical Assistance](#)” section for the number to call.)



**For additional information or technical assistance,  
please call the number below.**

**Cooper-Atkins Corporation**

33 Reeds Gap Road  
Middlefield, CT 06455-0450 USA

*[www.cooper-atkins.com](http://www.cooper-atkins.com)*

**Phone: 860-347-2256 • 800-835-5011 • FAX: 860-347-5135**