

OPERATING MANUAL

WINDOWS[®] Temperature Controller

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The screen illustrations in this booklet are meant to be representative, not necessarily exact duplicates of those that will be produced by your system.

Technical Assistance

If you have any questions about the use of this product, contact the manufacturer or authorized seller.

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About WinTC

The Windows Temperature Controller software (*WinTC*, for short) works with a temperature controller connected to a PC through a serial communication port.

With WinTC and a temperature controller unit, you can—

- Obtain settings from or send settings to the controller
- Maintain and use multiple user setup files
- Log and graph information collected by the controller
- Save and print setup files, log files, and graphs
- Specify separate settings for basic, advanced, alarms, and ramp/soak features
- Select and specify settings for the PC communications (com) port
- Share WinTC graphs and data with other Windows applications.

For information about the temperature controller unit, refer to the *Temperature Controller Operating Manual*.

Registration

Don't forget to complete and return your customer registration card. This will help us to provide you with possible future updates.

System requirements

To run WinTC, your hardware and software must meet the minimum requirements listed in this section.

Hardware

The **minimum** configuration required for WinTC is an IBM® - compatible PC with a 386 or higher processor, 4 MB of RAM (random access memory) with an EGA, VGA, 8514, or compatible display, and a 3½-inch diskette drive. To print data and graphs, an 80-column ASCII printer is required. If a serial mouse is used, the PC must have two com ports.

Software

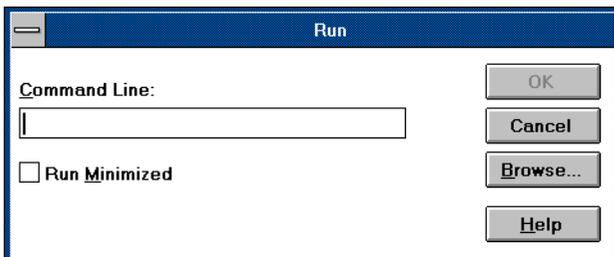
WinTC requires MICROSOFT® WINDOWS® 3.1 or MICROSOFT WINDOWS 95.

Installing the WinTC software

Before you can use WinTC, you must install the software on the PC to which you will attach the controller. To install the software, follow these instructions:

- 1 Launch Windows.
- 2 Exit all Windows applications that are loaded.
- 3 Insert the WinTC program diskette into the PC's 3½-inch diskette drive.
- 4 Take one of the following actions:
 - If you are running **Windows 3.1**, from the Program Manager File menu, select **Run**.
 - If you are running **Windows 95**, click START and then click **Run**.

The Run dialog box appears.

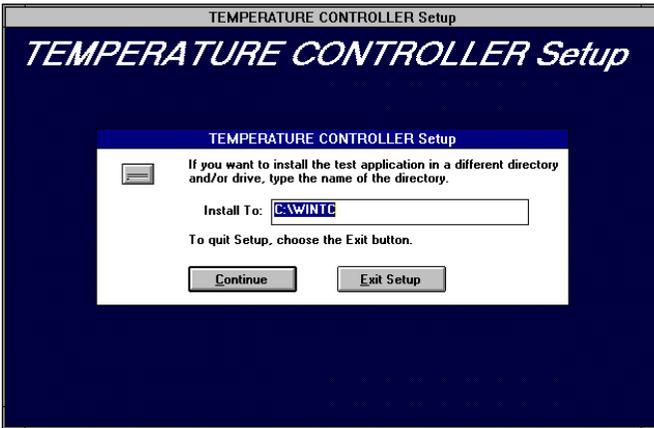


- 5 In the Command Line text box, type the following command, replacing *drive* with the letter of the diskette drive where you inserted the WinTC program diskette.

drive:\setup.exe

- Click OK.

The system displays a message that indicates that setup is initializing, and then displays the Temperature Controller screen.



1 Take one of the following actions:

- To install the software in a new directory named WINTC, click CONTINUE.
- To install the software in another directory, type the name of the directory in the Install To field and click CONTINUE.

The setup program creates the directory and installs the software. When setup completes, the Temperature Controller Setup dialog box displays this message:



2 To close the dialog box, click OK.

In **Windows 3.1**, the setup program creates a program group named *Temperature Controller*. The Temperature Controller program group contains one icon, which is labeled *Temperature Controller*.

In **Windows 95**, the setup program creates a new folder named *Temperature Controller* in the Programs folder.

Before you can use the WinTC software with the controller, follow the instructions on the next page to attach the controller to the PC.

Attaching the controller to the PC

Before you can use WinTC, you must connect the temperature controller to the PC with a serial communications cable.

Warning: Turn power off to PC before connecting Temperature Controller Cable.

The Temperature Controller unit that you attach to the PC must be a deluxe model.

Note: The 25-pin female connector on the PC is not a serial com port; it is usually a parallel printer port.

- 1 Attach one end of the cable to the port on the back of the controller that is labeled **RS232**.
- 2 Attach the other end of the cable to the serial communication port on the PC.

Before you use the controller with the WinTC software, you must enter information in WinTC about the port to which the controller is attached. Refer to "Setting up the com port" on page 24 for instructions for setting up the RS-232 communications port.

Launching the WinTC software



To launch the WinTC software in **Windows 3.1**, you must launch Windows. From the Program Manager, double-click on the Temperature Controller icon (illustrated at left) in the Temperature Controller program group.

To launch WinTC in **Windows 95**, click **START** and select **Programs**. From the Programs list, select **Temperature Controller**. Click the Temperature Controller icon (illustrated above) to start the program.

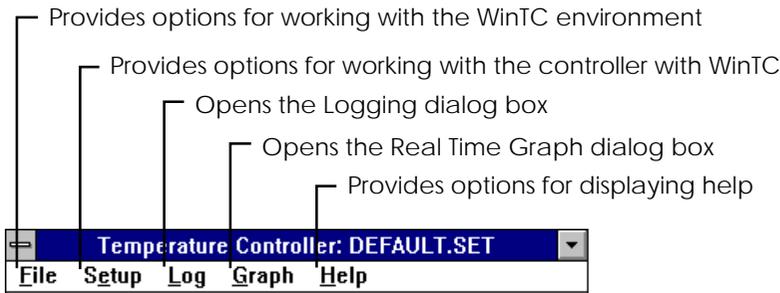
When WinTC opens, the main WinTC screen appears. The section entitled "The main WinTC screen" that begins on page 14 provides information about this screen.

Working with WinTC

WinTC runs under Windows 3.1 or Windows 95, so you work with it just as you do with any other Windows software application. You use **menus** to access WinTC functions, enter and review information in **dialog boxes**, and view and respond to **messages** that WinTC displays.

WinTC menus

WinTC includes five menus:



You can select options from WinTC menus by pressing key combinations or by using the mouse.

Selecting menu options with the keyboard

One letter of each menu title and menu option title is underlined. To select an option with the keyboard, you press the underlined letter while you hold down the ALT key to select the menu and then the option. To select options with the keyboard, WinTC must be the active window.

For example, to select the Load Graph menu option, press the ALT key and type **F** to open the File menu. Type **G** to open the Load Graph File dialog box.

Selecting menu options with the mouse

To select an option with the mouse, move the cursor to the name of the menu on the WinTC menu bar. Click the left mouse button to drop the menu and move the cursor to highlight the option you want to select. Click the option name to select it.

For example, to select the Load Graph menu option with the mouse, click **File** on the WinTC menu bar to drop down the file menu. Click **Load Graph** to open the Load Graph dialog box.

Using dialog boxes

WinTC requests information from you and displays information for you in dialog boxes. Dialog boxes include several types of fields that you can use to specify information:

- Option buttons
- Check boxes
- List boxes
- Text boxes
- Spin boxes

Option buttons

Option buttons provide a choice for you. When you see a group of option buttons, you can select only one of the choices provided. To select an option button, move the cursor to that option and click the left mouse button.

Check boxes

Check boxes also provide choices. When you see a group of check boxes, you can select as many of the choices as you want. To select a check box, move the cursor to that option and click the left mouse button.

List boxes



List boxes also display choices. Click the arrow next to the box to open a drop-down list of choices. Click the choice that you want to select it.

Text boxes



Text boxes provide an area for you to type free-form text. Click the left mouse button in the text box field and begin typing.

Spin boxes

 Spin boxes enable you to display the number that you want. Click the up arrow to display a higher number. Click the down arrow to display a lower number.

Processing dialog box choices

After you specify options in a dialog box, click the OK or CANCEL button to tell WinTC how to act on your selections.

Responding to WinTC messages

From time to time, WinTC displays messages for your information. These messages appear in dialog boxes, too. Some messages are for informational purposes only, such as the messages that appear to indicate progress as WinTC sends controller setup or ramp/soak settings to the controller. Other messages indicate an error condition that you must resolve.

When WinTC displays an error message, note the message text. To close the message dialog box, click OK.

To get additional information about the error message, access the online help system by pressing F1 or selecting **Contents** from the WinTC Help menu. Click **WinTC Messages** to display a list of messages in alphabetical order. When you find the message that you received, click the message text to display the topic that describes probable causes and solutions for the condition.

Getting help online

WinTC includes a robust help system with detailed information about all aspects of the software. The help system includes much more information than this manual includes. When in doubt, consult the WinTC help system for more detailed information.

The WinTC help system is organized into six main sections:

- *Using WinTC*, which provides general information about working in the WinTC software.
- *WinTC Menus*, which describes all of the commands available on WinTC menus.
- *WinTC Tasks*, which provides steps for completing WinTC tasks.
- *WinTC Dialog Boxes*, which provides complete descriptions of all fields in all WinTC dialog boxes.
- *WinTC Messages*, which discusses possible causes and solutions for error messages you receive while using WinTC.
- *WinTC Glossary*, which defines terminology used on WinTC screens and menus.

Accessing WinTC help

You can access the online help system for WinTC in these three ways:

- By selecting **Contents** from the Help menu.
- By clicking **HELP** in any dialog box where the button appears.
- By pressing **F1** anywhere in WinTC.

Finding help information online

Once you enter the WinTC help system, you can find information in any of these ways:

- Clicking on any text that appears in green on any help screen.
- Clicking the forward and back arrows on the Help toolbar to browse through the topics in the help system.
- Clicking the **SEARCH** button and entering text to search for in the help system's index.

You can also use the **FIND+** button to search the entire text of the WinTC help system for the text that you specify. The next section describes how to use the **Find+** full-text-search feature.

Searching the entire help system

The WinTC help system includes a full-text search function in addition to the standard Windows help search function. You can use the FIND+ button to search the entire text of the help system to find every occurrence of a word or phrase that you specify.

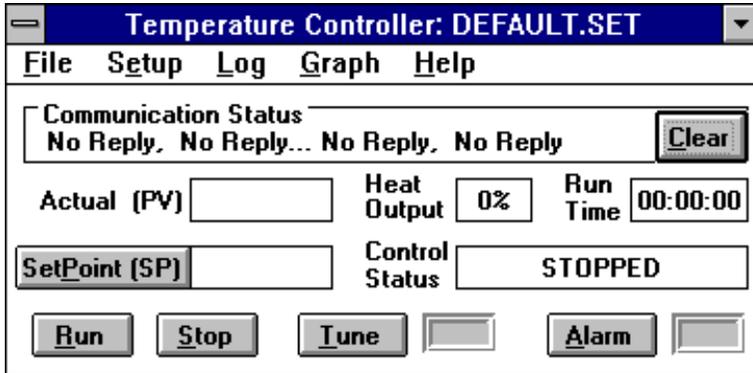
 To access the WinTC full-text search function, click the FIND+ button on any WinTC help system screen. The WinHelp Find+ dialog box appears. In the Enter Search Text field, type the text that you want to search for, and click FIND.

After you click FIND in this dialog box, the Select a Topic field lists every topic in the WinTC help system that includes the text you entered. To view the text of the topic, click the topic title. The Topic Text field displays the text of the topic, highlighting each occurrence of the text you entered.

From the WinHelp Find+ dialog box, you can also view or print selected topics that contain the text you entered.

The main WinTC screen

The WinTC main screen works much like the display panel on the controller. It provides information about the current status of the controller and the data that it collects.



The main WinTC screen provides several fields and buttons for your use in viewing data and sending information to the controller.

Communication Status

This field displays status and error messages related to communication with the controller through the PC's com port. The messages in this field reflect any problems that must be corrected.

If the message **No Reply** appears in the Communication Status field, check to make sure that the controller is turned on and the serial connection between the PC and the controller is secure.

Clear button

Click the CLEAR button to remove all messages from the Communication Status field.

Actual (PV)

This field displays the actual temperature (process variable) received from the controller according to the temperature scale specified in the WinTC Setup dialog box on the Temperature Scale tab.

Heat Output

The Heat Output field displays the percentage of full capacity that the heater is running at; for example, if the value in this field is **50%**, the heater is running at half its capacity.

Run Time

When the controller runs in On/Off or PID mode and a run time is specified in the WinTC Setup dialog box on the Time tab, this field displays the amount of time remaining in the run time. If Continuous is specified as the run time, this field displays zeros (00:00:00).

When the controller runs in ramp/soak mode, this field displays the amount of time remaining to run in the segment.

SetPoint (SP)

When the controller runs in On/Off or PID mode, click the SetPoint button to open the Enter New Setpoint dialog box to specify the controller's *setpoint*, the temperature that the controller must maintain.

In Ramp/Soak mode, this field displays the current setpoint.

Control Status

This field displays the current status of the controller and any error or information messages, including the following:

RUNNING	The controller is controlling the heating or cooling output.
LOGGING	The controller is logging data.
STOPPED	The heating or cooling output is turned off.
TUNING	The controller is performing an auto tune.
REMOTE DISABLED	The controller is not in remote mode.
Alarm messages	When an alarm is triggered, these messages indicate the condition that caused the alarm (such as PROCESS HIGH or PROCESS DEVIATION).
Ramp/Soak mode	When the controller is in ramp/soak mode, WinTC displays the profile number, segment

number, and status in the Control Status field.

Run button

Click the RUN button to start the controller.

Stop button

Click the STOP button to stop running the controller.

Tune button

When the controller is performing an auto tune, the window next to this button changes from grey to yellow.

Click the TUNE button to start auto tuning for the controller if Auto Tune is enabled in the WinTC Setup dialog box on the Control tab **and** if WinTC has finished sending setup to the controller.

Alarm button

When an alarm condition is triggered, the window next to this button flashes red.

Click the ALARM button to acknowledge the alarm and turn off an audible alarm.

File menu tasks

From the File menu, you can load and save setup files and graphs, print controller information, and access the Windows Print Setup dialog box.

This section contains instructions for performing tasks using the options on the WinTC File menu.

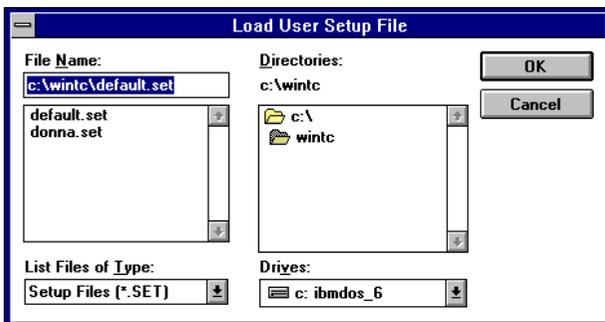
Loading a setup file

You can load a setup file that contains controller, ramp/soak, log, and graph settings. A setup file enables you to run processes more than once under the same conditions.

WinTC automatically loads the setup file named DEFAULT.SET when WinTC is launched. Use DEFAULT.SET for your most frequently used settings.

- 1 From the File menu, select **Load Setup**.

The Load User Setup File dialog box appears.



- 2 Type the file name of the setup file you want to load and the drive where the file resides.
- 3 Click OK. The dialog box closes.

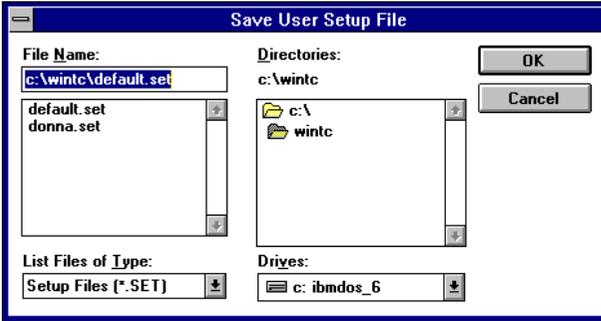
WinTC loads the setup file and displays the name of the setup file at the top of the main WinTC window. The settings in the file are now in effect.

Saving a setup file

You can save the controller, ramp/soak, log, and graph settings you define in a setup file. A setup file enables you to run processes more than once under the same conditions.

- 1 From the File menu, select **Save Setup**.

The Save User Setup File dialog box appears.



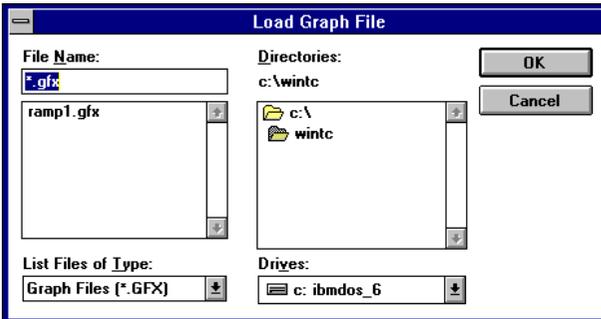
- 2 Type the name you want to assign to the setup file and the drive and directory where you want to save the file.
 - 3 Click OK. The dialog box closes.
- WinTC saves the setup file in the directory that you specified.

Loading a graph

When you save a graph, you can view or print it at a later time by loading the graph file you saved. The graph file contains a copy of a real time graph.

- 1 From the File menu, select **Load Graph**.

The Load Graph File dialog box appears.



- 2 Type the file name of the graph file you want to load and the drive where the file resides.
- 3 Click OK. The dialog box closes.

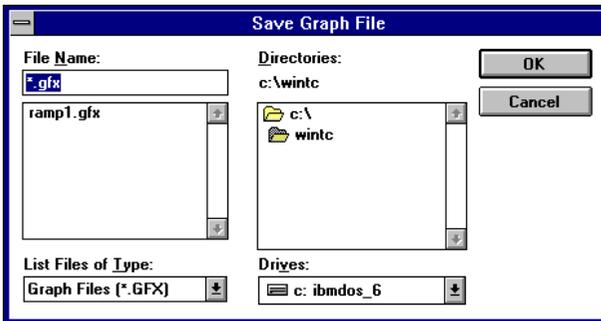
WinTC loads the graph file and opens the Real Time Graph dialog box so that you can view the graph.

Saving a graph

You can save the real-time graph to view or print again in a graph file. When you want to view the real-time graph again, you load the graph.

- 1 From the File menu, select **Save Graph**.

The Save Graph File dialog box appears.



- 2 Type the name you want to assign to the graph file and the drive and directory where you want to save the file.
- 3 Click OK. The dialog box closes.

WinTC saves the graph file in the directory that you specified.

Printing information from WinTC

You can print much of the information that WinTC collects and graphs. This section includes instructions for the following printing tasks:

- Printing controller setup
- Printing ramp/soak setup
- Printing a ramp/soak setup graph
- Printing a real time graph
- Printing a log file

Setting up the printer

You can access the Windows Print Setup dialog box from WinTC in order to change printer settings before printing information from WinTC.

- 1 From the File menu, select **Print**.

The Print dialog box appears.



- 2 Click SETUP PRINTER.

The Windows Print Setup dialog box appears.

For instructions on entering information in this dialog box, refer to the Windows documentation, or, if available, click the HELP button.

Printing controller setup

You can print a listing of all of the controller settings as defined in the Temperature Controller Setup dialog box. WinTC prints a report of the values for all settings on all tabs in the WinTC Setup dialog box.

- 1 From the File menu, select **Print**.

The Print dialog box appears.



- 2 In the Print What field, select **Controller Setup**.

- 3 Click ok. The dialog box closes.

WinTC prints the controller setup information.

Printing ramp/soak setup

You can print information about Ramp/Soak setup settings. WinTC prints a report of the values for all profiles and segments in the Ramp/Soak Setup dialog box.

- 1 From the File menu, select **Print**.

The Print dialog box appears.



- 2 In the Print What field, select **Ramp/Soak Setup**.

- 3 Click ok. The dialog box closes.

WinTC prints the ramp/soak setup information.

Printing a ramp/soak setup graph

You can print a graph of the Ramp/Soak setup. WinTC prints a graph of each profile for which it has data.

- 1 From the File menu, select **Print**.

The Print dialog box appears.



- 2 In the Print What field, select **Ramp/Soak Setup Graph**.

- 3 Click ok. The Ramp/Soak Setup dialog box appears, and WinTC displays a message that tells you that the graph is printing.

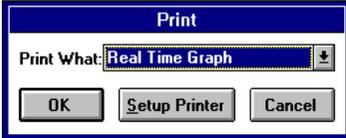
WinTC prints the Ramp/Soak Setup Graph, and the Ramp/Soak Setup dialog box remains open.

Printing a real time graph

You can print a copy of a real-time graph. WinTC prints a copy of the current Real Time graph. To print a graph, you must load a graph file or graph data in the Real Time Graph dialog box before you begin.

- 1 From the File menu, select **Print**.

The Print dialog box appears.



- 2 In the Print What field, select **Real Time Graph**.
- 3 Click ok. WinTC displays a message that tells you that the graph is printing.

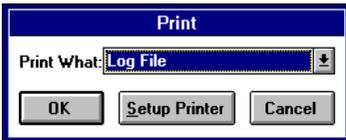
WinTC prints the Real Time Graph.

Printing a log file

You can print the contents of a log file.

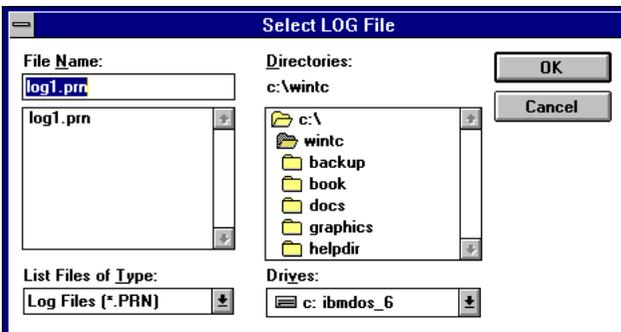
- 1 From the File menu, select **Print**.

The Print dialog box appears.



- 2 In the Print What field, select **Log File**.

The Select LOG File dialog box appears.



- 3 Type the file name of the log file you want to print and the drive where the file resides.

Setup menu tasks

From the Setup menu, you can specify settings for the PC's com port, the controller, and ramp/soak. You can also enable or disable remote mode operation for the controller.

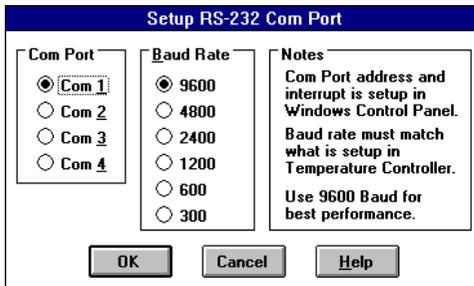
This section contains instructions for performing tasks using the options on the WinTC Setup menu.

Setting up the com port

Before you use the controller with WinTC, you must attach the controller to the PC and identify the controller to the software.

- 1 From the Setup menu, select **ComPort**.

The Setup RS-232 Com Port dialog box appears.



- 2 Specify the com port of the PC that the controller is attached to and its baud rate.
 - 3 Click ok. WinTC saves the com port settings.
-

Setting up the controller

Before you run a process with the temperature controller and WinTC, you must set up the controller. You can set up the controller in one of two ways:

- By specifying controller settings in WinTC and sending them to the controller.
- By specifying settings on the controller and retrieving the controller setup into the WinTC Setup dialog box.

Sending settings to the controller from WinTC

On the main WinTC screen, click STOP to stop the controller from running. The controller must be stopped to exchange settings with WinTC.

- 1 From the Setup menu, select **Controller** or press CTRL+C.
- 2 The WinTC Setup dialog box appears.

Specify the necessary settings on each tab of the dialog box. Refer to the online help system for detailed information about the fields on these tabs.

- Click the Alarms tab and specify settings:

The screenshot shows the 'Temperature Controller Setup' dialog box with the 'Alarms' tab selected. The dialog has a title bar and several tabs: 'Sensor', 'Temp. Scale', 'Time', 'Alarms', 'Recorder', 'Control', and 'Limits'. The 'Alarms' tab is active, showing three main sections: 'Alarms', 'Alarm Mode', and 'Alarm Setpoint'. The 'Alarms' section has radio buttons for 'Off' (selected), 'Auto Reset', and 'Manual Reset'. The 'Audible Alarm' section has radio buttons for 'On' and 'Off' (selected). The 'Alarm Mode' section has radio buttons for 'Process High' (selected), 'Process Low', 'Process Hi-Lo', 'Deviation Hi', 'Deviation Lo', 'Deviation Hi-Lo', and 'Deviation Band'. The 'Alarm Setpoint' section has three input fields: 'High' (0.0), a middle field (0.0), and 'Hysteresis' (1.0), all with units of °F. On the right side of the dialog, there are buttons for 'Get Setup From Controller', 'Send Setup To Controller', 'Help', 'OK', and 'Cancel'.

- Click the Control tab and specify settings:

The screenshot shows the 'Temperature Controller Setup' dialog box with the 'Control' tab selected. The 'Control' tab is active, showing three main sections: 'Control Mode', 'PID Control Parameters', and 'Control Action'. The 'Control Mode' section has radio buttons for 'On/Off', 'PID' (selected), and 'Ramp/Soak'. The 'PID Control Parameters' section has input fields for 'Proport. Band' (50), 'Integral Time' (240), and 'Deriv. Rate' (60), with units of °F, Seconds, and Seconds respectively. The 'Control Action' section has radio buttons for 'Heat' (selected) and 'Cool'. The 'Output Cycle Time' section has an input field for '1' with a unit of 'Seconds'. The 'Power Up Control' section has radio buttons for 'Stopped' (selected) and 'Last State'. The 'Auto Tune' section has radio buttons for 'Disabled' (selected) and 'Enabled'. The 'On/Off Control Hysteresis' section has an input field for '0.1' with a unit of °F. On the right side of the dialog, there are buttons for 'Get Setup From Controller', 'Send Setup To Controller', 'Help', 'OK', and 'Cancel'.

- Click the Limits tab and specify settings:

Temperature Controller Setup

Sensor Temp. Scale Time

Alarms Recorder Control **Limits**

Over Temperature Stop
 Controller will stop if PV (actual temperature) exceeds setpoint by this amount.
 100 ▲▼ °F

Loop Break Stop
 Controller will stop if output is on for this amount of time and PV (actual temperature) has not changed more than 1.0 °F (0.5 °C).
 0.0 ▲▼ Minutes
 Disabled

Get Setup From Controller
 Send Setup To Controller
 Help
 OK
 Cancel

- Click the Recorder tab and specify settings:

Temperature Controller Setup

Sensor Temp. Scale Time

Alarms **Recorder** Control Limits

Recorder Output
 Temperature at 4 mA 32.0 ▲▼ °F
 Temperature at 20 mA 212.0 ▲▼ °F
 Note: Temperature at 20 mA may be set less than Temperature at 4 mA for a negative output slope.

Get Setup From Controller
 Send Setup To Controller
 Help
 OK
 Cancel

- Click the Sensor tab and specify settings:

Temperature Controller Setup

Recorder Control Limits

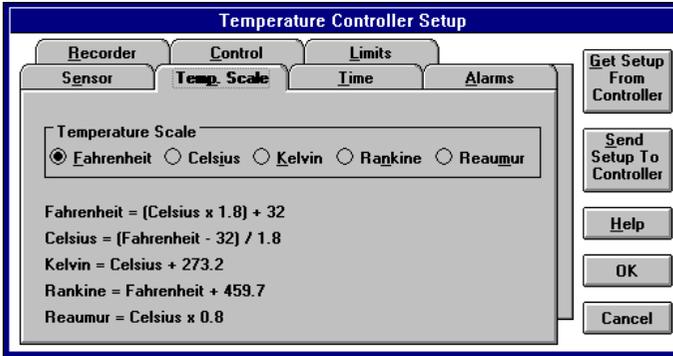
Sensor Temp. Scale Time Alarms

Sensor Type
 Thermocouple Thermistor RTD
 B E J K N R S T
 Range: -418.0 to 2502.0 °F
 Note: Each sensor type can have a unique calibration offset.

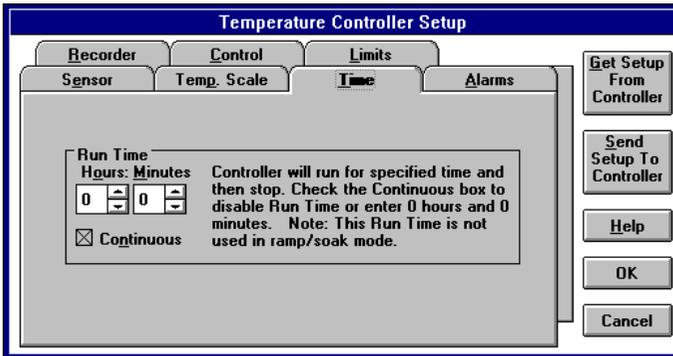
Sensor Calibrate
 Offset °F 0.0 ▲▼ Clear Offset Actual (PV) []

Get Setup From Controller
 Send Setup To Controller
 Help
 OK
 Cancel

- Click the Temperature Scale tab and specify settings:



- Click the Time tab and specify settings:



- After you specify all of the necessary settings on these tabs, click SEND SETUP TO CONTROLLER.

The Sending Setup to Controller message dialog box indicates progress as WinTC sends the settings to the controller. When complete, click OK to close the message dialog box.

- The WinTC Setup dialog box remains open. To close it, click OK.

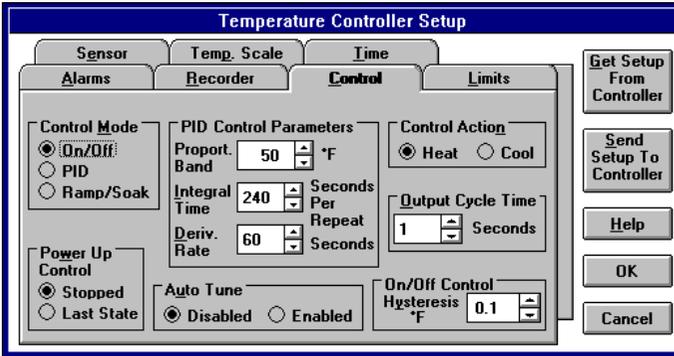
To start the controller, click RUN on the main WinTC screen.

Retrieving settings from the controller

On the main WinTC screen, click STOP to stop the controller from running. The controller must be stopped to exchange settings with WinTC.

- 1 From the Setup menu, select **Controller** or press CTRL+C.

The WinTC Setup dialog box appears.



- 2 To retrieve settings from the controller, click GET SETUP FROM CONTROLLER.

The Getting Setup from Controller message dialog box indicates progress as WinTC retrieves the settings to the controller. When complete, click OK to close the message dialog box.

- 3 The WinTC Setup dialog box remains open. To close it, click OK.

To start the controller, click RUN on the main WinTC screen.

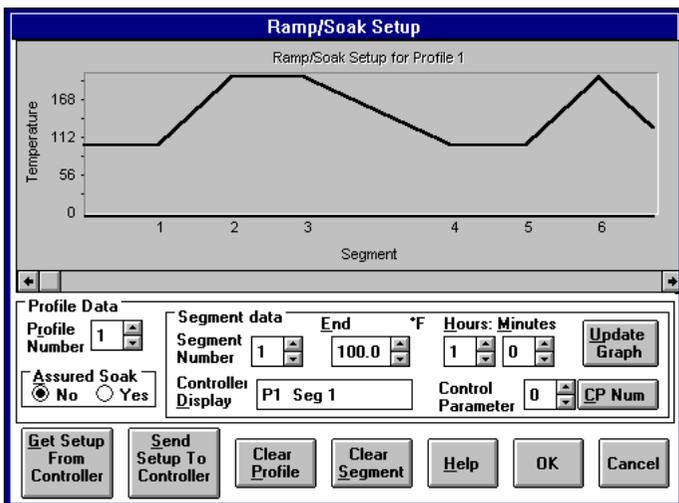
Setting up ramp/soak

Before you run a ramp/soak process with the controller and WinTC, you must set up the controller for ramp/soak. You can set up the controller in one of two ways:

- By specifying ramp/soak settings in WinTC and sending them to the controller
- By specifying ramp/soak settings on the controller and retrieving them into the Ramp/Soak Setup dialog box.

Specifying ramp/soak setup in WinTC

- 1 From the Setup menu, select **Ramp/Soak** or press CTRL+F.
The Ramp/Soak Setup dialog box appears.



- 2 Specify the settings for each profile and segment.
- 3 When you finish specifying settings for all of the profiles and segments, click SEND SETUP TO CONTROLLER.

The Sending Ramp/Soak Setup to Controller message dialog box indicates progress as WinTC sends the settings to the controller. When complete, click OK to close the message dialog box.

- 4 The Ramp/Soak Setup dialog box remains open. To close it, click OK.

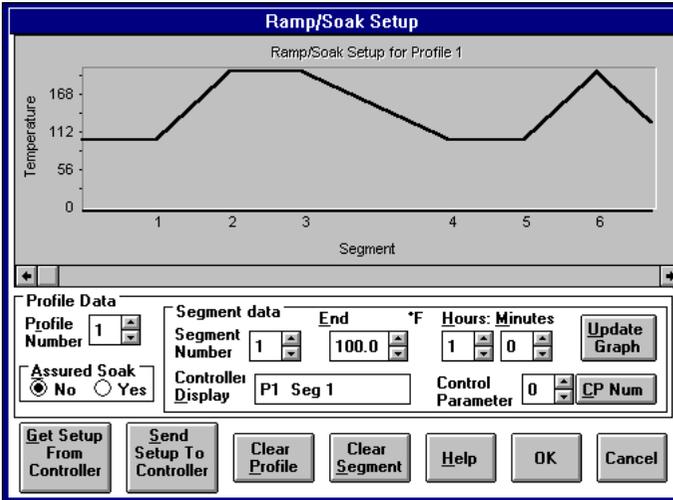
To start the Soak controller, click RUN on the main WinTC screen.

Retrieving ramp/soak setup from the controller

On the main WinTC screen, click STOP to stop the controller from running. The controller must be stopped to send ramp/soak settings to WinTC.

- 1 From the Setup menu, select **Ramp/Soak** or press CTRL+F.

The Ramp/Soak Setup dialog box appears.



- 2 To retrieve Ramp/Soak settings for all of the profiles and segments, click GET SETUP FROM CONTROLLER.

The Getting Ramp/Soak Setup from Controller message dialog box indicates progress as WinTC retrieves the ramp/soak setup from the controller. When complete, click OK to close the message dialog box.

- 3 The Ramp/Soak Setup dialog box remains open. To close it, click OK.

To start the controller, click RUN on the main WinTC screen.

Enabling and disabling remote mode

When remote mode is enabled, WinTC sends and receives data from the controller. When remote mode is disabled, no communication takes place between WinTC and the controller. Normally, remote mode is always enabled unless it is necessary to run WinTC without disturbing the current state of the controller.

Enabling remote mode

The controller must be attached to the PC's com port and powered up to enable remote mode. When remote mode is disabled, **Remote Mode: Disabled** appears on the Setup menu.

From the Setup menu, select **Remote Mode: Disabled**.

WinTC puts the controller into remote mode.

To start the controller, click RUN on the main WinTC screen.

Disabling remote mode

When remote mode is enabled, **Remote Mode: Enabled** appears on the Setup menu. A check mark appears to the left of the Remote Mode menu option.

From the Setup menu, select **Remote Mode: Enabled**.

WinTC takes the controller out of remote mode and changes the Setup menu option to **Remote Mode: Disabled**.

Log menu tasks

You can record or *log* data collected by the controller, including the temperature (PV), setpoint, control output, alarms, date, time, and temperature units.

If you want, you can save the log in text or spreadsheet format. Log file names typically end with the .PRN extension. When you save log files in spreadsheet format, the data is separated by commas in ASCII text format.

When you select the Log menu on the WinTC menu bar, the Logging dialog box opens. From the Logging dialog box, you can set up the log and log data.

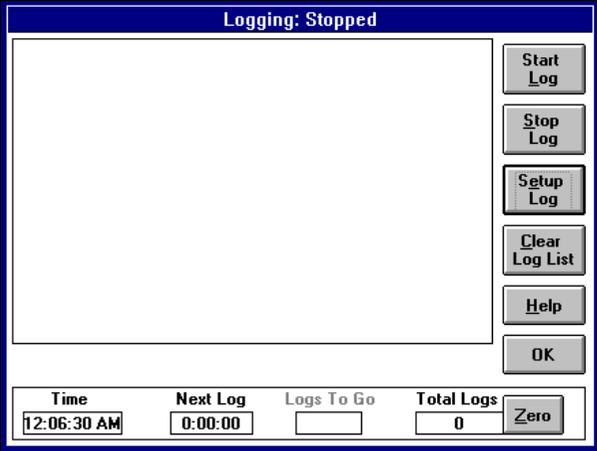
This section contains instructions for performing tasks using the Logging dialog box.

Setting up the log

Before you log data, you must specify setup information about the way you want WinTC to save the data. To set up the log, logging must be stopped.

- 1 Select the Log menu.

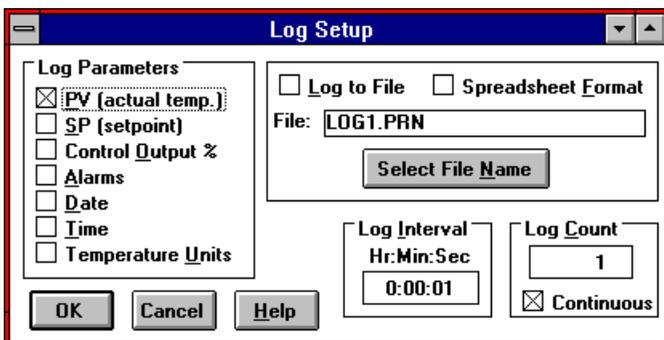
The Logging dialog box appears.



The screenshot shows a dialog box titled "Logging: Stopped". The dialog box has a large empty rectangular area on the left. On the right side, there is a vertical stack of buttons: "Start Log", "Stop Log", "Setup Log" (with a dropdown arrow), "Clear Log List", "Help", and "OK". At the bottom of the dialog box, there is a status bar with four fields: "Time" (12:06:30 AM), "Next Log" (0:00:00), "Logs To Go" (an empty text box), and "Total Logs" (0). To the right of the "Total Logs" field is a "Zero" button.

2 Click SETUP LOG.

The Log Setup dialog box appears.



3 Specify the setup information for the log:

- Select the parameters you want to include in the log.
- To save the logged information to a file, select the Log to File field and specify the file name in the Select LOG File dialog box.
- If you plan to import the file into a spreadsheet application, select the Spreadsheet Format field.
- Specify the frequency with which you want to log data in the Log Interval field.
- Specify the number of times you want to log data, or to log until the STOP LOG button is pressed, select **Continuous**.

4 Click OK. WinTC returns you to the Logging dialog box.

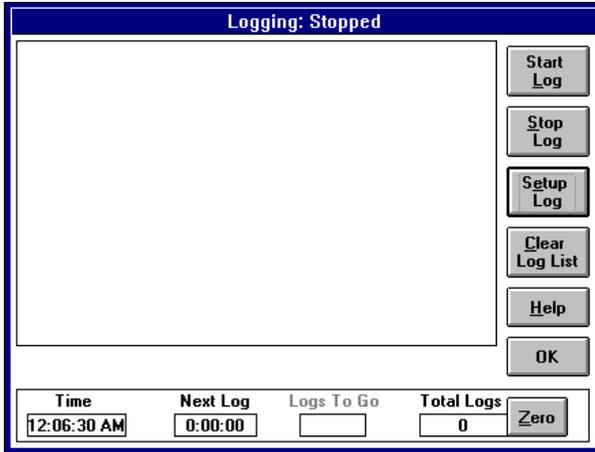
To begin logging, click START LOG.

Logging data

Before you log data, you must set up the log.

- 1 Select the Log menu.

The Logging dialog box appears.



- 2 Click START LOG.

WinTC displays the logged information in the area at the top left of the Logging dialog box.

- 3 As necessary, take the following actions:

- To clear the log list, click CLEAR LOG LIST.
- To reset the Total Logs count, click ZERO.
- To continue logging but close the dialog box, click OK.

- 4 When you want to stop logging, click STOP LOG in the Logging dialog box. The logged data appears in the Logging dialog box until you click CLEAR LOG LIST.

Graph menu tasks

When you select the Graph menu on the WinTC menu bar, the Real Time Graph dialog box opens. From the Real Time Graph dialog box, you can set up a graph and graph data. The data that you can include in graphs includes the temperature (PV), setpoint, control output, and alarm setpoint.

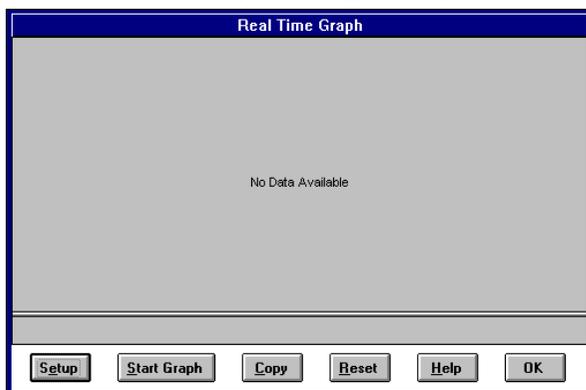
This section contains instructions for performing tasks using the Real Time Graph dialog box.

Setting up a graph

Before you graph data, you must specify setup information about the way you want WinTC to graph the data. To set up the graph, graphing must be stopped.

- 1 Select the Graph menu.

The Real Time Graph dialog box appears.

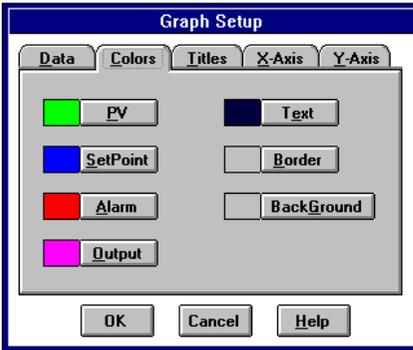


- 2 Click SETUP.

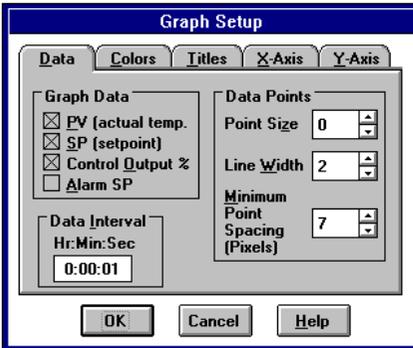
The Graph Setup dialog box appears.

3 Specify the setup information for the graph. Refer to the online help system for detailed information about the fields on these tabs:

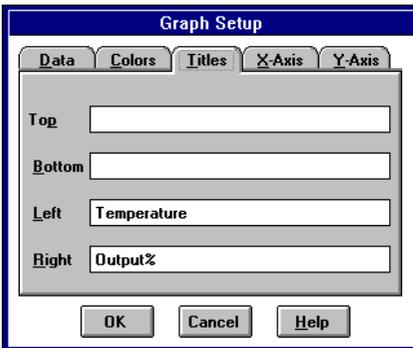
- Click the Colors tab and specify settings.



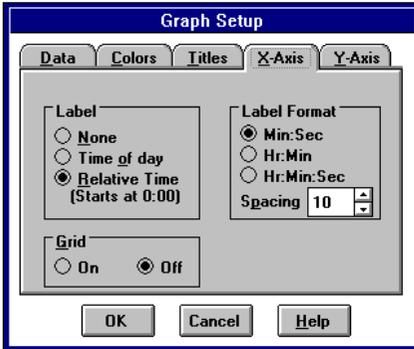
- Click the Data tab and specify settings.



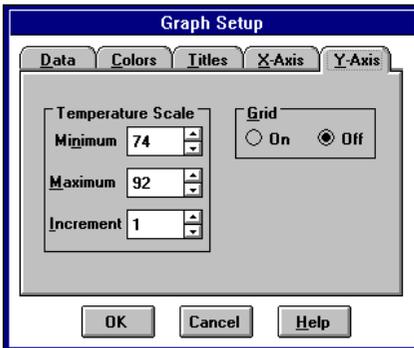
- Click the Titles tab and specify settings.



- Click the X-Axis tab and specify settings.



- Click the Y-Axis tab and specify settings.



- 4 After you specify all of the necessary settings on the tabs, click OK.

WinTC returns you to the Real Time Graph dialog box.

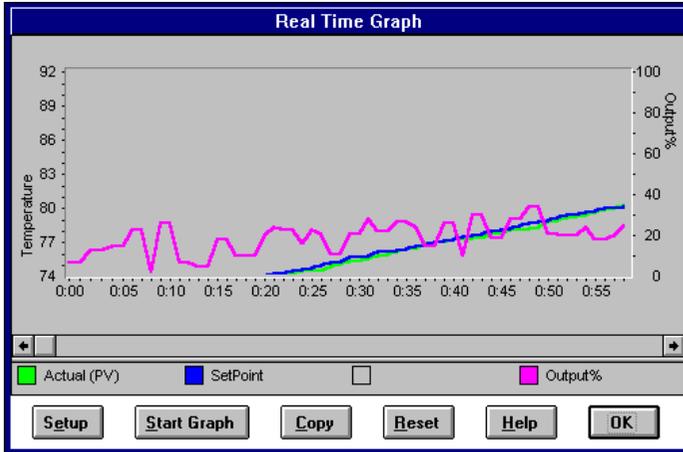
To begin graphing, click START GRAPH.

Graphing data

Before you graph data, you must set up the graph.

- 1 Select the Graph menu.

The Real Time Graph dialog box appears.



- 2 Click START GRAPH.

WinTC displays the graph of data at the top of the Real Time Graph dialog box.

- 3 As necessary, take the following actions:

- To reset the graph, click RESET.
- To continue graphing but close the dialog box, click OK.

- 4 When you want to stop graphing, click STOP GRAPH in the Real Time Graph dialog box. The graphed data appears in the Real Time Graph dialog box until you click RESET.

Help menu tasks

From the Help menu, you can perform the following tasks:

- To display the Contents of the WinTC help topic, select **Contents**.
- To enable or disable the display of labels that describe the functions of WinTC when you move the cursor over the button, select **Tips**
- To view the version number and catalog number of the WinTC software, select **About**.

Refer to the section entitled "Getting help online" that begins on page 11 for more information about using the WinTC online help system.