NEScom software

NESLAB INSTRUMENTS, INC.

For Windows™

NESLAB temperature control software

● For use with NESLAB digital
or microprocessor based controllers

● Select from easy to use product icons

● Create graphs and charts

● Easily configure ramping functions
which set the setpoint overtime

● View pop-up alarm windows which
display if an alarm condition occurs

NESLAB

Table of Contents

About NEScom

NEScom Windows application provides a means for querying and controlling NESLAB products over an RS232 connection. The application bases all actions on controller icons. Once a controller icon is created, product parameters can be read and controlled.

Features include the capability to view and print a temperature and setpoint chart, configure and log alarms, run and save programs, and view indicators in the form of gauges and meters, all from menu bar selections.

NEScom Help will provide answers to the questions that will arise. Use keywords to obtain information in Help searches. Click on Help buttons for shortcuts to help topics. A glossary of terms is also located in the back of this manual.

Installing NEScom

The setup program installs NEScom and a run-time engine onto your system. Your system should have 3 -4MB disk space. Since the runtime engine requires a math coprocessor to run, we recommend installing NEScom on at least a 486 DX-33 PC with 8MB of RAM. Follow these instructions for the appropriate version of Windows:

> Windows 3.x
> Select Run from the File menu in the Program Manager
> Type a:setup.exe (if installing from the A: drive).
>
> Windows 95
> Select Run from the Start menu.
> Type a:setup.exe (if installing from the A: drive).

Setup allows you to name the installation directory to copy files. Change the destination directories by selecting Change (though we recommend you use the defaults). Once the directory names are approved select Finish to complete the installation.

Getting Started

RS232 Connection & Cables

NESLAB has cables and adapters to interface your computer to a NESLAB product. If you have a cable question, please check your configuration against the cabling suggested below. If your NESLAB product is not listed in this section call 800-NESLAB for assistance.

Computer Interface:
NESLAB suggests connecting the 25-pin male connector on your computer to a NESLAB product with the appropriate NESLAB cable listed below. Use NESLAB Adapter P/N 001935 to convert a 9-pin male port to a 25-pin male port.

NESLAB Product:
RTE, EX 110/210/220/410/510 (modbath digital/programmable):
> NESLAB Cable P/N 001911 from computer to MRS232C.
> MRS232C to bath.

RTE, EX 111/211/221/411/511 (bath93 digital and HX Series II controllers):
> NESLAB Cable P/N 001911 from computer to MRS232C
> MRS232C to bath.

RTE, EX 111/211/221/411/511 (bath93 microprocessor):
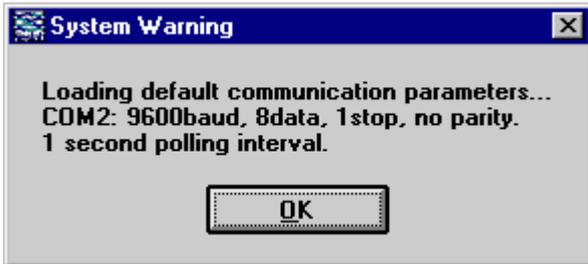> NESLAB Cable P/N 001912 from computer to bath.

LT, ULT, EX250/251 (Digital Exatrol):
> NESLAB Cable P/N 001911 from computer to RS232C
> RS232C to bath.

Troubleshooting:
If there is a problem contacting the product check the cable connections and ensure the NESLAB product is powered and RS232 communications is enabled. Check the parameters in Configure COM port in the Options menu. Ensure the protocol being used by NEScom is supported on the NESLAB product.

Initialization

When NEScom is executed for the first time you are prompted to enter your name as the licensee. The program will then indicate the default communication parameters. (The only other time this is required is if the initialization file gets corrupted.)

```
NESLAB Communications Software          ⊠

  This product has been licensed to:

  |

              OK
```

```
System Warning                          ⊠

  Loading default communication parameters...
  COM2: 9600baud, 8data, 1stop, no parity.
  1 second polling interval.

              OK
```

File Menu

Select File from the menu bar to display the window shown below.
This menu allows you to create, open, delete or save workspaces
containing various controller configurations.
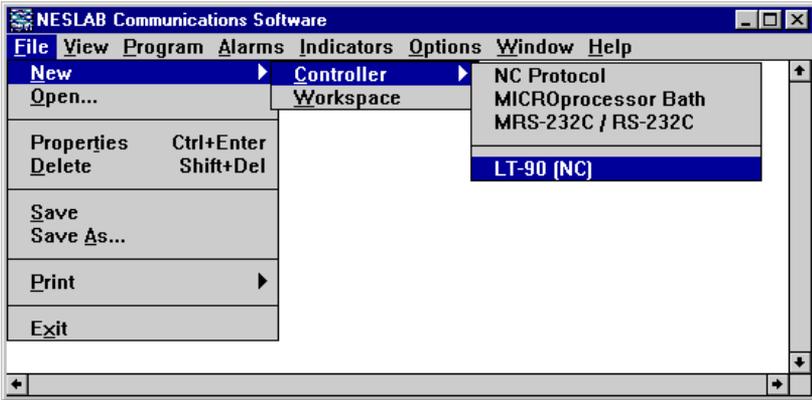
New

The options are Controller or Workspace.

Controller
Select to create a new Controller Icon. Icons are a graphical
representation of a product. Up to eight (8) icons can be created
for each workspace. All menu selections are based off of the
active icon. An icon is active if it is highlighted. Select an icon with
the mouse to make it active.

The background color of the active icon signifies its communica-
tion status.

Yellow means that NEScom is polling the device in an attempt to
make contact.
Blue means that NEScom successfully contacted the device but is
not currently communicating with the product.
Green indicates that NEScom is currently communicating with the
product.

Red indicates that an error in communication occurred. Communication is resumed by manually enabling communications. See Properties or Enable Communications.

NOTE: Losing contact with the product does not result in a timeout error when NEScom is only requesting parameter values from the product. In this case, NEScom enters the polling mode (Yellow) and attempts to reconnect.

Select from the following icon types:

NC Protocol[1] - General support for NESLAB products that support the NC protocol.
MICROprocessor Bath[1] - General support for NESLAB Microprocessor line of baths (RTE/EX).
MRS232C/RS-232C[1] - General support for NESLAB Digital line of baths and chillers that utilize the MRS232C or RS-232C.
LT90 (NC) - Support for LT-90 utilizing the NC protocol.

Workspace
Define and configure a new workspace. A Workspace is made up of one or more controller icons. If one is already active, NEScom will prompt you to save the current workspace before a new one is defined or loaded. All icons are cleared when a new workspace is created. Once new controller icons are added, the workspace can be saved.

---

1. See glossary.

Open

Select this menu item to open a previously saved workspace.

File Name:
Type the file name in the space provided or select from the choices within the file list.

List Files of Type:
The default file type listed is *.nes. To list all files in the directory click on the text box and select All files (*.*).

Directories:
Choose from the default directory or browse through the directory structure.

Drives:
Choose from the default drive or select from other drive choices.

Properties

Select Properties to view the window below. Properties include: description, location/serial number, communications address and status, read only status and password.

Description:
If desired, enter a new description of the unit selected to commu-nicate with NEScom. This description will appear on the icon and

any window panel associated with this icon. The description is referenced when logging alarms.

Location:
Enter the physical location of the unit (building, lab number ...) selected to communicate with NEScom. The location is referenced when logging alarms.

Communications: Disabled—Enabled
This control is available only when there is a communication error. Under error-free operating conditions this control is dimmed and gives the status of communications. If an error occurs which causes communications to stop, communication is re-enabled by setting the switch to Enable.

NOTE: Communication is normally disabled when NEScom is not requesting parameters from the product. Once you configure NEScom to request data from the product, communication is automatically enabled.

Comm. Protocol:
This displays the current communications protocol. This display cannot be changed.

Comm. Address:
This number is used by the NC protocol as a way to identify which unit NEScom is communicating with. This address is significant in protocols that support communications with multiple units (RS-485 or RS-422). NEScom and NESLAB products supporting the NC protocol and RS-485/RS-422 can be configured with a unique address (1-32767). Any data sent from NEScom to the NESLAB product, and any data received by NEScom carries this address. Default addresses are assigned automatically when icons are created.

NOTE: An address is not required for RS-232 communications. NEScom 1.0 does not support multi-unit communications.

Read Only: No—Yes
When in read only mode, NEScom can only query a product for information and not perform any intrusive setting of product parameters (like temperature setpoint). Read Only mode is disabled by entering the correct password and selecting No on the Read Only switch.

With Read Only mode selected:

> Programs cannot be started.
> Setpoint cannot be changed from Product Panels.
> Product Panel buttons are disabled.

Password:
A password must be entered before the Read Only mode can be disabled. All software is shipped with the password "NESLAB" as a default. Select Change…. to change your password.

Delete

Select this menu item to delete the active product icon within the workspace. When an icon is deleted, the icon created first among those remaining becomes the active icon.

NOTE: NEScom prompts to confirm the deletion. The shortcut for delete is [Shift]+[Del].

Save

Select this menu item to save the current workspace. If the workspace has not been previously saved then a dialog box will appear prompting for file information.

File Name:
Type the file name in the space provided or select from the choices within the file list.

List Files of Type:
The default file type listed is *.nes. To list all files in the directory click on the text box and select All files (*.*).

Directories:
Choose from the default directory or browse through the directory structure.

Drives:
Choose from the default drive or select from other drive choices.

Save As

Select this menu item to save the current workspace under a new file name.

File Name:
Type the file name in the space provided or select from the choices within the file list.

List Files of Type:
The default file type listed is *.nes. To list all files in the directory click on the text box and select All files (*.*).

Directories:
Choose from the default directory or browse through the directory structure.

Drives:
Choose from the default drive or select from other drive choices.

Print

Select Print from the menu choices to print a hard copy of a graph of the program in memory, a snapshot of the strip chart, the product control panel or the contents of the alarm log.

Program:
After a Program is created and loaded into memory a hard copy can be made. You can print the program in the form of a graph or plain text. A Program must be viewed if printing in graph form.

Chart:
A chart must be viewed before it can be printed. Only the portion viewed will be printed.

Control Panel:
A control panel must be viewed before it can be printed.

Alarm Log:
An Alarm Log must be opened before it can be printed. The output of the alarm log goes to the default printer.

Exit

Select Exit from the menu choices to exit the program. If the workspace has changed since the last save, a save-message prompt will appear before exiting.

View Menu

Select View from the menu bar to view program graphs, strip charts, product control panels and alarm logs.
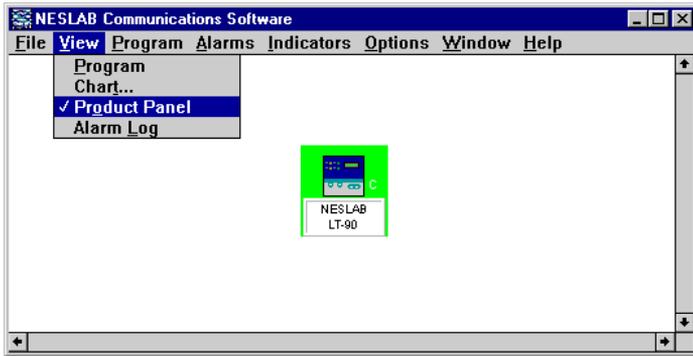
Program

Select Program to view a graphic representation of the current program. The program graph panel can be maximized or minimized but not re-sized. Restore a minimized program graph by selecting the appropriate window panel from the Window menu bar selection. Real-time plotting of temperature occurs once a program is started.

NOTE: A program must first be stored in memory, then viewed in order to be printed.
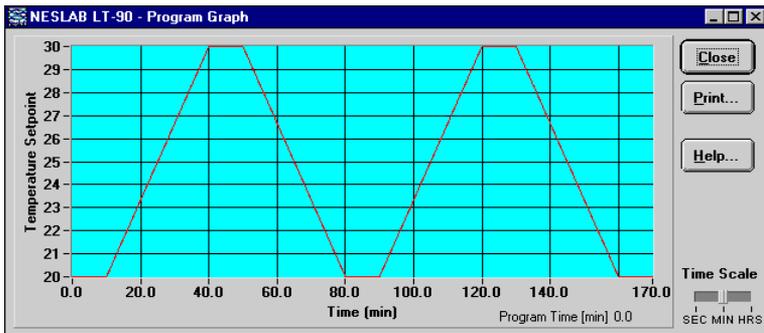
Time Scale:
Select this to switch between time scales. Choose from seconds, minutes or hours. The program graph panel defaults to minutes.

Close:
Select this to close the program graph panel.

Print:
Select this to print the program graph panel. The program can also be printed from the File menu.

Help:
Select this to display this help topic.

NOTE: A check mark to the left of the menu item signifies that the program graph panel exists for the active controller icon. Selecting this menu item when checked closes the program graph panel.

Chart

Select Chart to view a runtime plot of temperature and setpoint or, if the NC protocol is supported, any two product parameters. The strip chart can be maximized and minimized but not re-sized. Restore a minimized strip chart by selecting the appropriate window panel from the Window menu bar selection.

NOTE: A chart must be viewed in order to be printed.

When selecting this menu item, you are prompted with a pop-up panel for selecting which chart parameters to view and in what format to display the data, see figures on pages 14 and 16.

NOTE: A check mark to the left of the menu item signifies that the chart panel exists for the active controller icon. Selecting this menu item when checked closes the chart panel.
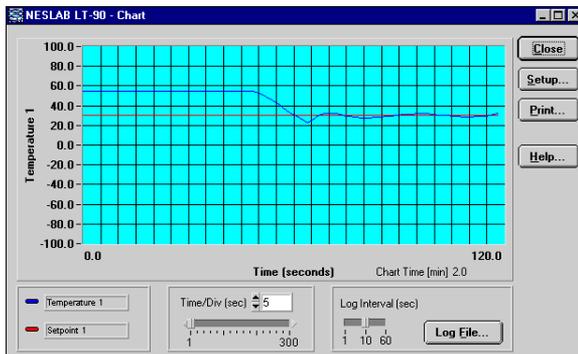
Time/division:

This selects the time interval for the x-axis divisions. There are always 24 divisions displayed along the x-axis. This time is in seconds unless the intervals are greater than five seconds. In this case the time scale for the x-axis is in minutes.

Log File... (Close File):

Select this to output data acquisition to a file. The file contains a column for time and a column for each parameter being sampled. Time is in seconds and starts with zero. The log interval is configurable, select 1, 10 or 60 seconds. Parameter headings are automatically logged to the file when it is first opened and data is written to the file as long as it is open. Close the file by clicking on "Close File" or by closing the chart panel.

Close:

Select this to close the chart panel. The operator is warned that the log file will also close (if open).

Setup:

Select this to bring up a panel for choosing which chart parameters to view and in what format to display the data.

Print:

Select this to print the chart panel. The chart can also be printed from the File menu.

Help:

Select this to display this help topic.

Chart Parameters

Chart parameter selection and format precede the creation of a chart. Format and parameter selection can be modified once a chart exists by selecting Setup. Depending on which controller icon type is active, the look of the Chart Parameters pop-up panel may vary. Only those controller icons supporting the NC protocol provide the flexibility of selecting from a variety of parameters to chart. Of all the parameters supported in the NC protocol, only those parameters supported in the actual product can be plotted on the chart. Selecting a parameter that is not supported has no affect on the strip chart.

NC Protocol
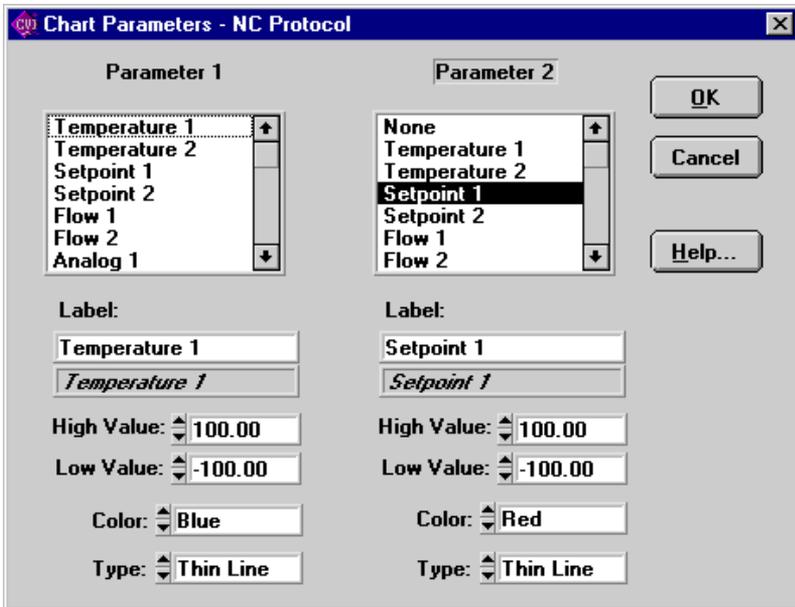
Parameter 1/Parameter 2: Select from the list of parameters. Any parameter not supported is indicated in the reference text box below the label field. To create a chart, Parameter 1 must exist. Parameter 2 is optional.

Label: By default, the parameter name appears in the Label field. This field can be edited and is limited to 30 characters. The label appears in the chart legend and as a title for the y-axis. If two parameters are charted, the label for the parameter with the widest range of y-values is used as the y-axis title.

High Value: Enter the upper limit for the parameter.

Low Value: Enter the lower limit for the parameter.

Color: Choose from 16 color choices.

Type: Choose a line style (thin line, thick line, or plotted points).

Microprocessor and MRS232C Protocols

Chart Parameters

Temperature	Setpoint	OK
Label:	Label:	Cancel
Temperature	Setpoint	
Temperature	*Setpoint*	
High Value: 150.00	High Value: 150.00	
Low Value: -50.00	Low Value: -50.00	
Color: Blue	Color: Red	Help...
Type: Thin Line	Type: Thin Line	

Parameters: Chart temperature and setpoint.

Label: This field can be edited and is limited to 30 characters. The label appears in the chart legend and as a title for the y-axis. The label for the parameter with the widest range of y-values is used as the y-axis title.

High Value: Enter the upper limit for the parameter.

Low Value: Enter the lower limit for the parameter.

Color: Choose from 16 color choices.

Type: Choose a line style (thin line, thick line, or plotted points).

Product Panel

Select Product Panel from the View menu to view the control panel of the active product icon. All features of the product panel are disabled in the read-only mode. If attempting to perform a function that requires disabling read-only mode, you will be prompted with a message or a beep indicating that the unit is in read-only mode.

Generic Product Panel:
All Generic controller icons share a generic product panel which displays temperature and temperature setpoint. The temperature setpoint can be updated when read-only is disabled. This is done by entering a number in the "New Setpoint" field and clicking on the "Update" button.
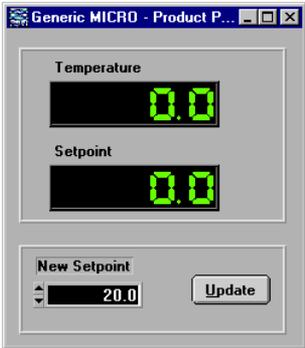

Alarm Log

Select Alarm Log from the View menu to view the contents of the alarm log in a pop-up window panel. An alarm log file must be opened in order to be viewed. Scroll through the alarm log with the vertical and horizontal scroll bars.
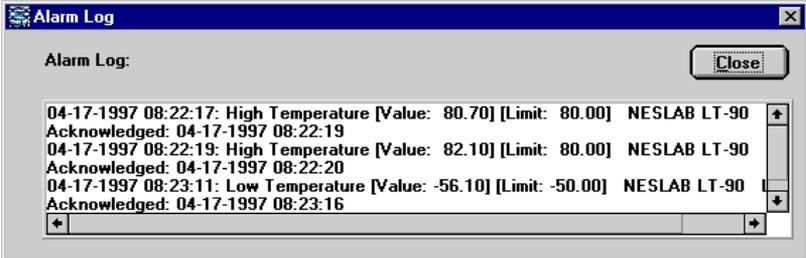
Program Menu

NEScom provides a means for programming temperature setpoints over time. Setpoint ramp and soak functions are entered as program steps. Any sequence of steps can be repeated up to 999 times with the program-loop feature.
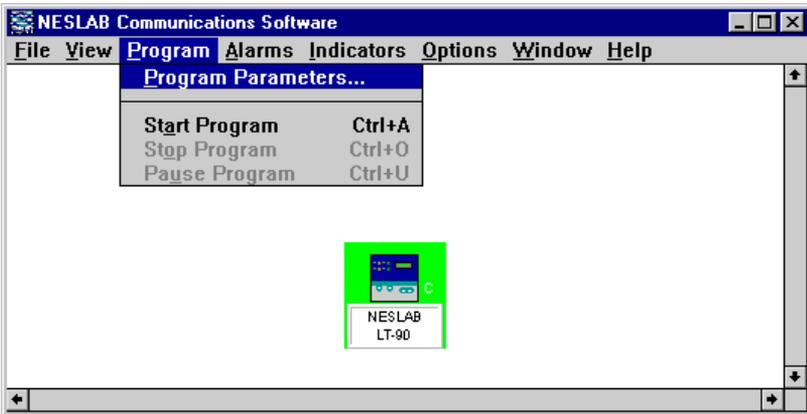
Program Parameters

Programs are built/edited, viewed and controlled using the Program Panel window. The panel is divided into the Program Edit Window (top), the Program View Window (bottom) and the Program Panel Buttons (side).
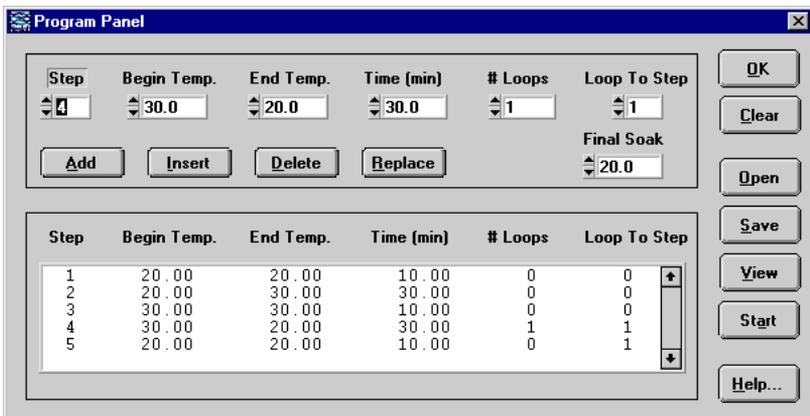
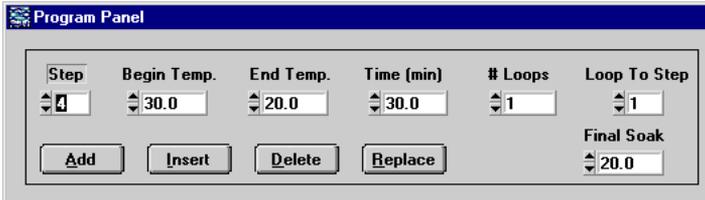## Program Edit Window

Program steps are defined by their step number. Use this window to enter program steps. Adding, inserting, deleting and replacing steps is accomplished by first choosing a step number.

Step: Up to 12 steps can be entered starting with step 1. This field cannot exceed the highest programmed step number.

Begin Temp: Enter the beginning temperature of the program step.

End Temp: Enter the ending temperature of the program step.

Time (min): Enter the duration of the program step in minutes. Setpoint soak is achieved by setting the start and end temperatures to the same value. Soak time is the period of time entered here. Once a step is completed, the program resumes to the next step in the program unless # Loops, see below, is set greater than zero. The maximum duration for a single step is 9999.9 minutes.

 # Loops: A sequence of steps can be repeated to create a program loop. A number other than zero entered in this field equals the number of times a sequence of steps is repeated. When a program encounters a nonzero number for # Loops, it will go to the step number entered in Loop To Step and repeat this action as many times as indicated. Once the number of loop repeats is reached, the program resumes to the next step in the normal sequence of the program. A loop can repeat up to 999 times.

Final Soak: The temperature that will be maintained once the program is completed or manually stopped.

NOTE: If a communication time-out occurs, the setpoint will remain at the last setpoint.

Add: After all parameters are entered into a program step, click Add to add this step into the program.

Insert: Inserts a program step into the program. The step number of the inserted step, as indicated by the Step value, remains the same and all step numbers greater than or equal to the inserted step number are incremented by one. When a step is inserted within a loop, the Loop To Step value for that loop is not changed. When a step is inserted prior to a loop, the Loop To Step value for that loop is incremented by one.

Delete: Deletes a program step from the program, as indicated by the Step value. All step numbers greater than or equal to the inserted step number are decremented by one. When a step is deleted within a loop, the Loop To Step value for that loop is not changed. When a step is deleted prior to a loop, the Loop To Step value for that loop is decremented by one.

Replace: Replaces the program step previously entered with the current program step.

Program View Window
This view-only portion of the window details each programmed step. Scroll the window using the vertical scroll bar.

NOTE: Highlighting program steps in this portion of the window has no affect on the Program Edit Window.
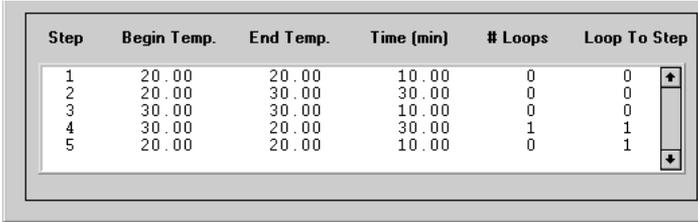
Step	Begin Temp.	End Temp.	Time (min)	# Loops	Loop To Step
1	20.00	20.00	10.00	0	0
2	20.00	30.00	30.00	0	0
3	30.00	30.00	10.00	0	0
4	30.00	20.00	30.00	1	1
5	20.00	20.00	10.00	0	1

Program Panel Buttons

OK: Closes the Program Panel.

Clear: Clears the entire program currently loaded.

Open: Loads a program that has previously been saved to a file.

Save: Saves current program to the specified path and file name.

View: Displays a graphic representation of the current program.

Start: Starts the program. When communication is established the program begins executing and the controller icon turns green. The Start button changes to Stop on the program panel when the program is running.

Stop: Stops the program. Under conditions of normal program termination (stopped by the operator or completed as intended) the setpoint will be set to Final Soak. The Stop button on the Program panel changes to Start.

Help: Displays this help topic.

Start Program (Ctrl+A):

This menu selection is available only when a program has been stored in memory. This selection starts the program at the first program step. When the program is running, the controller icon is highlighted green indicating that communication is established.

If the program is successfully executing, this menu selection becomes unavailable to the operator and the Stop Program and Pause Program selections become available. The program control button on the program panel changes from Start to Stop. If communication fails the icon is highlighted in red.

Stop Program (Ctrl+O):

This menu selection becomes available once a program is stored in memory and started. Selecting this menu item stops the program. When stopped manually, the program sets the setpoint to the Final Soak value. The Stop button on the Program panel changes to Start when a program is stopped.

Pause Program (Ctrl+U):

This menu selection becomes available once a program is stored in memory and started. Selecting this menu item pauses the program. When paused, this menu item is checked and the program does not set the setpoint to any new values. To resume execution of the program, select pause again. A check mark at this menu item signifies that the program is paused. The program can be stopped when paused.

Sample Program

The following program ramps up from 20°C to 30°C in 30 minutes. It then soaks at 30°C for 10 minutes before it ramps back down to 20°C in 30 minutes. It is repeated two times for a total of three ramp-up/soak/ramp-down loops.

1) Enter "1" in the Step field.
2) Enter "20.0" in Begin Temp. and "30.0" in the End Temp. fields.
3) Enter "30" in the Time field and "0" in the #Loops field.
4) Select the Add button. This adds a line to the Program View Window.
5) Enter "2" in the Step field.
6) Enter "30" in the Begin Temp. and "30.0" in the End Temp. fields.
7) Enter "10" in the Time field and "0" in the #Loops field.
8) Select the Add button. This adds a second line to the Program View Window.
9) Enter "3" in the Step field.
10) Enter "30.0" in the Begin Temp. and "20.0" in the End Temp. fields.
11) Enter "30.0" in the Time field.
12) Enter "2" in the #Loops field and "1" in Loop To Step field.
13) Select the Add button. This adds a third line to the Program View Window.

Select the View button to view and start the program.

Alarms Menu

NEScom can be configured to generate warning messages when alarm conditions occur. Alarm setup can vary depending on which communication protocol is in use. In all cases an alarm point is stored within the Windows application. This alarm point may not necessarily be the alarm point of the actual product. All alarms can be enabled or disabled with a single menu selection.

When an alarm occurs, you are prompted with a pop-up message. This message displays the alarm description, the value read from the product and the alarm limit. Messages also display the icon description and location entered under icon properties. You must acknowledge this message and then have the option to disable the alarm.

NOTE: In all cases an alarm point is stored within the Windows application. This alarm point may not necessarily be the alarm point of the actual product.
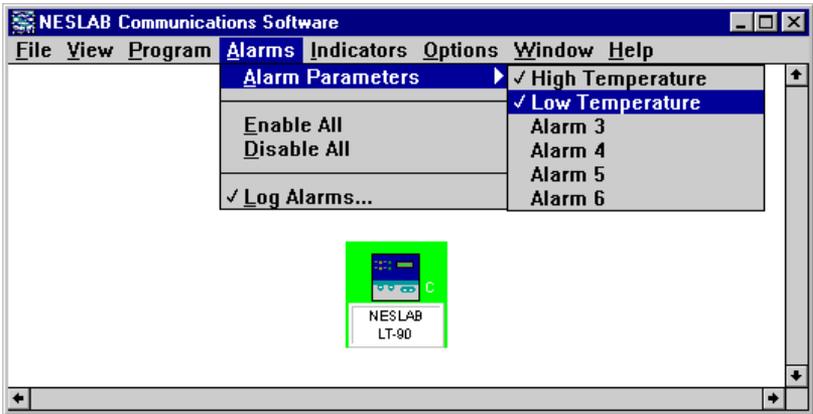
Alarm Parameters

NC Protocol
Select any alarm from the menu. The descriptions Alarm 1, Alarm 2, ... are default names which can be modified when configuring an alarm. Alarms are configured by first selecting a specific parameter from a list of ones supported, then entering a high limit and low limit for that parameter. Parameter units and precision match those of the actual product. High limit and low limit alarms can be later enabled or disabled by recalling the alarm from this menu. A check mark on an alarm description signifies that either limit or both limits are enabled.

Parameters: Select the alarm parameter. If the parameter is not supported by the product then the reference field will read Not Supported.

Title: Enter a descriptive title for each alarm. This will appear as the new description for this menu item.

High Alarm: Enter the high limit. The alarm will activate when the parameter in question exceeds this limit.

Low Alarm: Enter the low limit. The alarm will activate when the parameter in question is lower than this limit.

Enable: Individually enables or disables each alarm.

Cancel: Cancels all changes made since the last save.

OK: Confirms the alarm configuration.

Microprocessor Protocol
Select from High Temperature, Low Temperature, High Remote Temperature or Low Remote Temperature alarm. Parameter units and precision match those of the actual product. A check mark on an alarm description signifies that it is enabled. Selecting an alarm menu item with a check mark disables the alarm. If the menu item is not checked, then the operator will be asked to enter the alarm limit. For convenience, the alarm limit is added to the description of the menu item. Not entering a value for the alarm limit when prompted skips the alarm setting.

MRS232C Protocol
Select from High Temperature or Low Temperature alarm. Parameter units and precision match those of the actual product. A check mark on an alarm description signifies that it is enabled. Selecting an alarm menu item with a check mark disables the alarm. If the menu item is not checked, then the operator will be asked to enter the alarm limit. For convenience, the alarm limit is added to the description of the menu item. Not entering a value for the alarm limit when prompted skips the alarm setting.

Enable All

Enables all defined alarms. See Alarm Parameters for individually enabling alarms.

Disable All

Disables all defined alarms. See Alarm Parameters for individually disabling alarms.

Log Alarms

NEScom provides the means to log all alarm messages to file. Select this menu item to create a log file. A file selection dialog box allows the operator to easily open a file for automatic logging. A check mark on this menu item signifies that an alarm log has been opened. Selecting this menu item with a check mark closes the alarm log.

Alarm log entries are stamped with the date and time of the alarm occurrence and the contents of the alarm message. The alarm log also indicates when an alarm was acknowledge.

NOTE: View the contents of the alarm log by selecting Alarm Log from the View menu.

NOTE: Print the contents of the alarm log by selecting Print from the File menu.

Indicators are graphical representations of data. Graphical formats such as gauges, thermometers and meters are linked to product parameters for greater visibility. An indicator is created by selecting the specific indicator from the menu. A check mark on the indicator menu item signifies that the indicator exists. Selecting a checked menu item deletes the indicator.
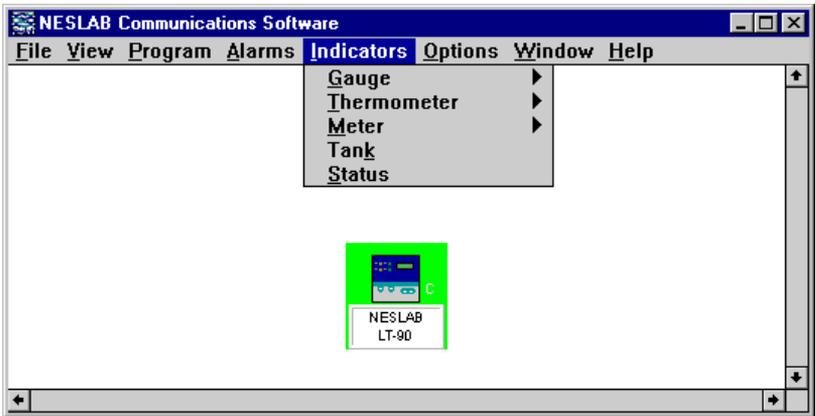
All indicators reside in an indicator widow. The sizable window is displayed when the first indicator for a controller icon is created. There is a unique indicator window for each controller icon. Indicators are dimmed for all controller icons other than the selected active icon.

Indicators can be moved within the indicator window with the cursor keys and sized with +/- (overall adjust), W/w (width adjust), or H/h (height adjust).

Left-Double-Click an indicator to configure the indicator range and title.

Indicators are outlined in red when they are out of range.

NC Protocol
Products supporting the NC protocol have greater flexibility when it comes to using indicators. These products support different subsets of the entire range of parameters supported in the NC protocol. Because of this, the operator has the ability to link any indicator to any parameter supported by the product.

Microprocessor Protocol
NESLAB's Microprocessor line of products provide temperature, setpoint, high limit and low limit values. Here, the thermometer indicators are linked to temperature and setpoint and the gauge indicators are linked to the temperature limit values.

MRS232C Protocol
Products supporting the MRS232C protocol only provide temperature and setpoint values so two thermometer indicators are available.

Gauge

A Gauge can be moved within the indicator window with the cursor keys and sized with +/- (overall adjust), W/w (width adjust), or H/h (height adjust). Left-Double-Click on a Gauge to configure its range and title.

NC Protocol
When selecting either 1 or 2 from the Gauge menu item, the operator will be prompted to link a NC protocol parameter to the indicator.
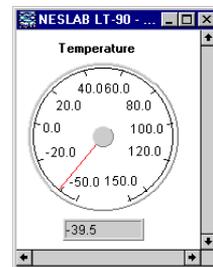
Parameters: Choose a parameter from the list choices. Parameters that are referenced as Not Supported will not be linked to an indicator.

Label: Type a label for the indicator.

High Value: Enter a high value for the indicator.

Low Value: Enter a low end for the indicator.

Values outside the entered range make the indicator go out of range. This is illustrated by a red outline on the indicator.

Microprocessor Protocol
High Temperature

Low Temperature

MRS232C Protocol
Not Supported

Thermometer

A Thermometer can be moved within the
indicator window with the cursor keys and
sized with +/- (overall adjust), W/w (width
adjust), or H/h (height adjust). Left-Double-
Click on a Thermometer to configure its
range and title.

NC Protocol
When selecting either 1 or 2 from the
Thermometer menu item, the operator will
be prompted to link a NC protocol
parameter to the indicator.

Parameters: Choose a parameter from the list choices. Param-
eters that are referenced as Not Supported will not be linked to an
indicator.

Label: Type a label for the indicator.

High Value: Enter a high value for the indicator.

Low Value: Enter a low end for the indicator.

Values outside the entered range make the indicator go out of
range. This is illustrated by a red outline on the indicator.

Microprocessor Protocol
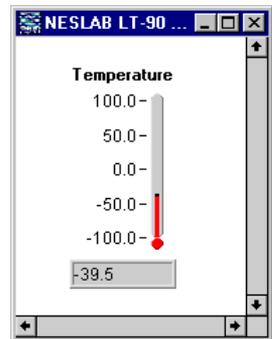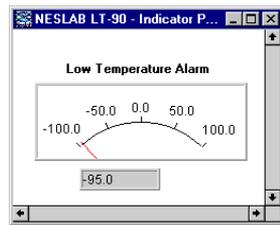
Temperature

Setpoint

MRS232C Protocol

Temperature

Setpoint

Meter

A Meter can be moved within the indica-
tor window with the cursor keys and sized
with +/- (overall adjust), W/w (width
adjust), or H/h (height adjust). Left-
Double-Click on a Meter to configure its
range and title.

NC Protocol

When selecting either 1, 2, 3 or 4 from
the Meter menu item, the operator will be prompted to link a NC
protocol parameter to the indicator.

Parameters: Choose a parameter from the list choices. Param-
eters that are referenced as Not Supported will not be linked to an
indicator.

Label: Type a label for the indicator.

High Value: Enter a high value for the indicator.

Low Value: Enter a low end for the indicator.

Values outside the entered range make the indicator go out of
range. This is illustrated by a red outline on the indicator.

Microprocessor Protocol

Not Supported

MRS232C Protocol

Not Supported

Tank

A Tank can be moved within the indicator window with the cursor keys and sized with +/- (overall adjust), W/w (width adjust), or H/h (height adjust). Left-Double-Click on a Tank to configure its range and title.

NC Protocol
When selecting the Tank menu item, the operator will be prompted to link a NC protocol parameter to the indicator.

Parameters: Choose a parameter from the list choices. Parameters that are referenced as Not Supported will not be linked to an indicator.

Label: Type a label for the indicator.

High Value: Enter a high value for the indicator.

Low Value: Enter a low end for the indicator.

Values outside the entered range make the indicator go out of range. This is illustrated by a red outline on the indicator.

Microprocessor Protocol
Not Supported

MRS232C Protocol
Not Supported

Status

Select Status from the Indicator menu bar to view a product's predefined status conditions. Status flags indicate faults, warnings and other system conditions, and typically vary from product to product. Reference the product owners manual for the definition of status bits.

NC Protocol
Up to 16 status fields can be predefined for a product. These fields are labeled for specific products that report their status. When viewing status for a Generic NC icon, the operator will see that the labels for the status fields are generic as well. These labels can be modified by selecting the field and typing the status label name.

Microprocessor Protocol
Not Supported

MRS232C Protocol
Not Supported

NC Protocol Parameters

The NC protocol is designed to acquire all possible parameter values from NESLAB proprietary controllers. Most (if not all) products supporting the NC protocol use only a subset of the entire function set. When linking an indicator or chart parameter to a protocol parameter for a given product, only those parameters supported by the product are possible parameter choices.
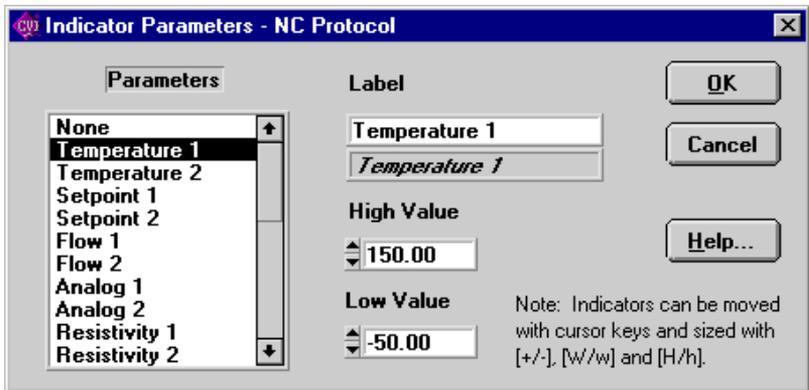
Supported Parameters:

Temperature 1

Temperature 2

Setpoint 1

Setpoint 2

Flow 1

Flow 2 (future expansion to Flow 10)

Analog input 1

Analog input 2

Resistivity 1

Resistivity 2

Supported Alarm Points:

Temperature 1 (high low)

Temperature 2 (high low)

Flow 1 (high low)

Flow 2 (high low)

Analog input 1 (high low)

Analog input 2 (high low)

Resistivity 1 (high low)

Resistivity 2 (high low)

Options Menu

Select Options from the menu bar to configure and reset the COM port.
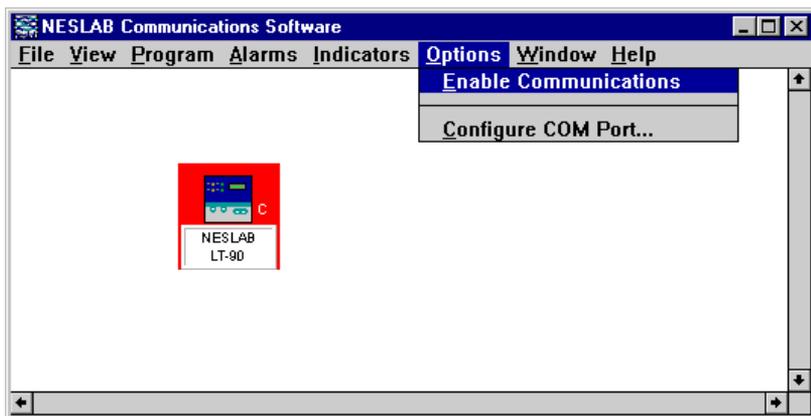
Enable Communications

Select this menu item to re-enable serial communications following a communications time-out error. This can also be done from the properties panel and the communications panel. A controller icon with a red background signifies that there has been a communications error. Once the COM port has been re-initialized, the product is polled by NEScom in order to establish contact. A controller icon with a yellow background signifies that it is polling the product. The icon will remain yellow until contact is made.

Configure COM Port

Select this menu item to configure the communications port. The control for enabling communications is available only when there has been a communications time-out error. Under normal operating conditions this control is dimmed and gives the current communication status. Enabling communications re-initializes the COM port.

Communication is normally disabled when NEScom is not requesting parameters from the product. Once you configure NEScom to request data from the product communication is automatically enabled.

Select the Default button to set suggested RS232 settings for the protocol in use.

      MRS232/RS232: 300 Baud, 8 data bits, 1 stop bit, no parity, polling interval 1.0 second.
      MICROprocessor Bath: 4800 Baud, 8 data bits, 1 stop bit, no parity, polling interval 1.0 second.
      NC Protocol: 9600 Baud, 8 data bits, 1 stop bit, no parity, polling interval 1.0 second.

Start-up configuration: Port: COM2, 9600 Baud, 8 data bits, 1 stop bit, no parity, polling Interval 1.0 second.
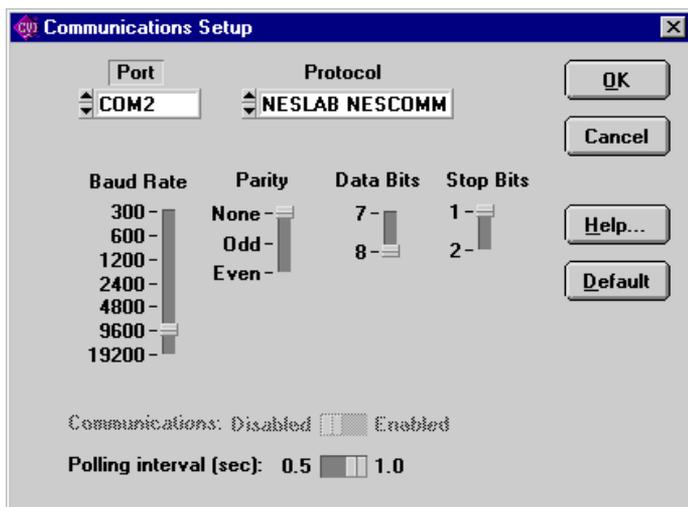
Window Menu

Select Window from the menu bar for arranging icons and restoring window panels.

Arrange Icons

Select this menu to arrange controller icons in the NEScom main window panel.

Moving an Icon
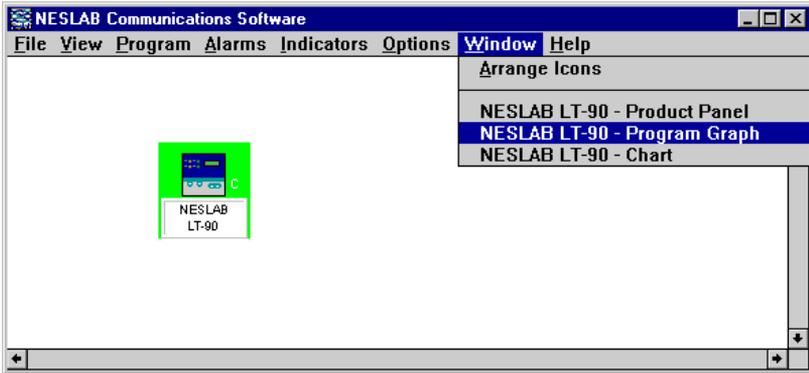Icons can be moved within the main window. Clicking on the icon changes the cursor to a pointing finger cursor. Moving the cursor to the top edge of the icon changes the cursor back to the default style. When the cursor changes back to the default style, click and drag the icon to move it.

Window Panels

Lists all window panels opened. Click on the window panel description to bring the panel to the front or restore a panel when minimized. If there are no window panels opened then this section of the menu is empty.

Help Menu

Select this menu item for help in operating NEScom. Help is based on the menu selections of the program. Help buttons on various panels provide a shortcut to a help topic. Get to detailed information on a topic by clicking on help links.
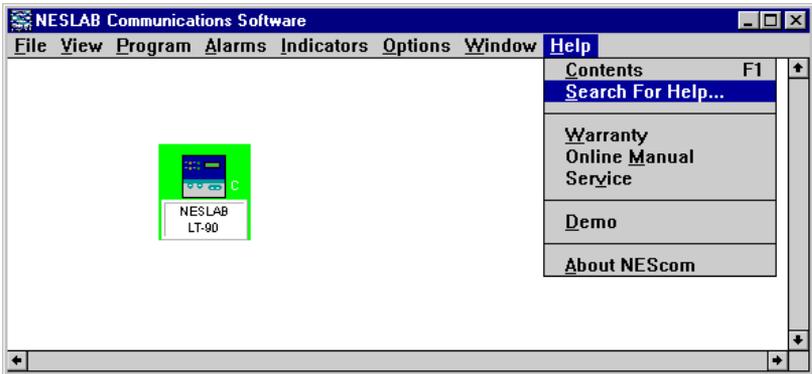
Contents

The contents of Help is based on the menu bar of NEScom. Selecting this menu item brings up the HELP utility. Use the Tab key to scroll through the HELP contents or double-click on a topic to view that specific help screen.

Search

Search on a Help topic. Start by typing the first few letters of the word to search. Click on a topic within the list of topics appearing in the text box. Once a topic is selected, click on Display to get help on the topic.

Warranty

Select this menu item to read the NESLAB warranty statement for NESLAB products.

On Line Manual

NESLAB provides on-line manuals which can be downloaded to your computer.

Online documentation may be obtained 24 hours a day, 7 days a week from NESLAB ONLINE, our public, online service support system. NESLAB ONLINE is a FirstClass(r) system and we recommend using FirstClass(r) Client software (see below).

Access to NESLAB ONLINE is available in 13 simultaneous native languages: Brazilian (dialect of Portuguese), Danish, English, Finnish, French (Canadian), French (Parisian), German, Italian, Japanese, Norwegian, Portuguese, Spanish and Swedish.

Access is by direct dial-up only at (603) 427-2490.

We recommend using FirstClass(r) Client software (see below) to access NESLAB ONLINE. Generic VT-100 terminal emulation may be used by specifying 8-N-1 protocol, but be aware that the graphical user interface, color, fonts, sound, teleconferencing, some e-mail features, and native language access will not be available.

When connecting, you will be asked to establish a User ID and password. Whatever you choose will become your User ID and password.

Online operation manuals may be found at: Conferences / Operating Manuals

Online service manuals may be found at: Conferences /Service

FirstClass(r) Client software is free and available for Macintosh or Windows (3.x or '95). The software is available from many sources:

AMERICA ONLINE: go to keyword "SOFTARC" then select "FirstClass software"

COMPUSERVE: Mac client is at TWEUROPA /Teletools /fcmac.zip

Windows client is at PCBBS/BBS programs /FCC300.exe

WEB: download from http://www.softarc.com/try.htm

CD-ROM: Mac client is on the companion CD-ROM to the book "Macintosh Revelations" by Ken Maki.

Mac client is on the companion CD-ROM to the magazine "Mac Addict", Sept. 1996 issue.

Mac client is on most CD-ROMs produced by BMUG.

We are not aware of the Windows client on any CD-ROM.

NESLAB ONLINE: Mac client is at: Conferences / Software / Mac / FirstClass Client

Windows client is at: Conferences / Software / Windows / FirstClass English

By mail: let us know and we will mail you a disk. Specify Mac or Windows.

Note to MAC users: The application FirstClass Client may be run directly off the floppy. It need not be copied to your hard drive

Service

NEScom provides a means for logging information on a product. This simple interface keeps a record of any service information for a product, like RMA numbers, and logs the date automatically. The name field must be filled in for the entry to be added to the log.

A log entry is created by typing your name, the description of the problem, then clicking on Add to write the entry to the log. Select Close to abort entering data.

Demo

A mock controller can be used in place of an actual product to demonstrate NEScom features. Select Demo from the Help menu and a controller box will appear. When a demo-controller is created, the Demo menu item has a check mark. Selecting this menu item with a check mark removes the demo-controller.

Rather than issuing commands over the communications interface to an actual product, commands are intercepted and values from the demo controller driver are used. Bring up charts and indicators, run programs and setup alarms just as if an actual product existed.

First create a product icon, or open a file to restore a previously saved workspace, then bring up the demo-driver. A pop-up message will prompt for the temperature units. Select Fahrenheit, Celsius or Cancel from bringing up the demo.
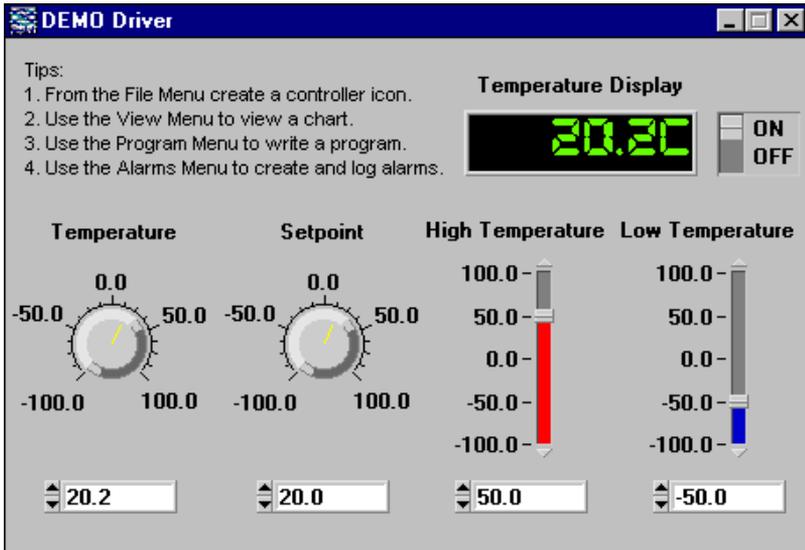
Turn the DEMO ON!
You interact with the demo just like an actual product. Switch the ON/OFF switch to the ON position. The temperature follows the setpoint within a half of a degree of error. With the switch in the OFF position you can manually vary the temperature.

The following parameters are available for demonstration:

ON/OFF: Starts and stops the controller. When the DEMO controller is ON, temperature follows the setpoint with a small margin of error. This allows you to create and view a program, or view a chart of temperature and setpoint. With the DEMO controller OFF, you can manually adjust the setpoint.

Temperature Display: Displays the temperature value.

Temperature: Enter a value for temperature or use the controls to vary the parameter.

Setpoint: Enter a value for setpoint or use the controls to vary the parameter.

High Temperature Limit: Enter a value for the high temperature limit or use the controls to vary the parameter.

Low Temperature Limit: Enter a value for the low temperature limit or use the controls to vary the parameter.

About

This displays copyright and license information relative to NEScom. Make reference to this information when contacting NESLAB support.

Glossary

MICROprocessor Protocol: A communications protocol implemented on NESLAB's microprocessor line of baths and chillers. Supports Delta-Temp.

MRS232C Protocol: Term used to describe the protocol used with NESLAB's MRS232C/RS232C apparatus for RS232 communications on NESLAB's digital line of products. Supports Delta-Temp.

NEScom : Windows application which communicates with supporting NESLAB products.

NC Protocol: A generic communications protocol designed to acquire parameter values from NESLAB products supporting the protocol (5/97).

Read Only: When in read only mode, NEScom can only query a product for information and not perform any intrusive setting of product parameters (like temperature setpoint). Read Only mode is disabled by entering the correct password in the Properties Panel and selecting No on the Read Only switch.

With Read Only mode selected:

> Programs cannot be started.
> Setpoint cannot be changed from Product Panels.
> Product Panel buttons are disabled.

Workspace: A workspace is made up of one or more controller icons. If one is already active, NEScom will prompt you to save the current workspace before a new one is defined or loaded. All icons are cleared when a new workspace is created. Once new controller icons are added, the workspace can be saved.

The media on which you receive NEScom are warranted not to fail to execute programming instructions, due to defects in materials and workmanship for a period of 90 days from the date of shipment. NESLAB Instruments will, at its option, repair or replace software media that do not execute programming instructions if NESLAB Instruments receives notice of such defects during the warranty period. NESLAB Instruments does not warrant that the operation of the software shall be uninterrupted or error free.

NESLAB Instruments believes that the information in this manual is accurate. The documentation has been carefully reviewed for technical accuracy. In the event that technical or typographical errors exist, NESLAB Instruments reserves the right to make changes to subsequent editions of this document without prior notice to holders of this addition. The reader should consult NESLAB Instruments if errors are suspected. In no event shall NESLAB Instruments be liable for any damages arising out of or related to this document or the information contained in it.

NESLAB ASSUMES NO RESPONSIBILITY FOR INCIDENTAL, CONSEQUENTIAL, OR OTHER DAMAGES INCLUDING, BUT NOT LIMITED TO LOSS OR DAMAGE TO PROPERTY, LOSS OF PROFITS OR REVENUE, LOSS OF THE UNIT, LOSS OF TIME, OR INCONVENIENCE.

The warranty provided herein does not cover damages, defects, malfunctions or service failures caused by the owner's failure to follow NESLAB Instruments installation or operation instructions.

Blank page

NEScom Software Registration

To validate the warranty and to keep you updated, please complete the information and return it to:

>   NESLAB Instruments
>   Software Registration
>   Attention: Marketing Department
>   P.O. Box 1178
>   Portsmouth, NH 03802-1178 USA

You may mail this information or fax it to 603 436-8411. Thank you.

Name (First/Last) _____

Company Name _____

Company Division or Mailstop _____

Street Address _____

City/Zip _____

State or Province _____

Country _____

Software Name & Version _____

Date Software Received (Month/Date/Year) _____

What is your application for using this software product.

 _____
 _____

Please comment or give any suggestions you may have regarding this software.

 _____
 _____

NEScom Software License Agreement

Carefully read this license agreement before opening this soft-
ware or using NEScom Software.

Opening the sealed packet containing the software or using the
software indicates acceptance of this license agreement. If the
terms are not acceptable, contact NESLAB Customer Support at
1-800-4-NESLAB.

Ownership
NEScom Software programs and all accompanying materials are
owned by NESLAB Instruments. They are protected by United States
copyright laws, by laws of other nations, and by international
treaties.

License
NESLAB Instruments licenses each copy of the NEScom Software for
a single computer. Load NEScom into permanent memory of only
one computer and only use that copy on that same computer. Do
not install NEScom Software on a network.

Use and Transfer Restrictions
Do not copy NEScom Software except when making one copy for
backup or archival purposes. Transferring the NEScom Software to
a single hard disk is allowed provided the original is kept solely for
backup, or archival purposes. Do not copy any of the written
materials. Do not transfer, or assign the NEScom diskettes to any
another user.

Do not reverse engineer, decompile or disassemble the Software.