



NTS Installation and Setup Instructions

Regulatory Compliance

Safety

This device has been tested and found to be in compliance with the requirements set forth in UL 916, Energy Management Equipment, and is listed by Underwriters Laboratories, Inc., for installations in the United States.

This device has been tested and found to be in compliance with the requirements set forth in C22.2, No. 205-M1983, Signal Equipment, and is Certified by Underwriters Laboratories, Inc., for installations in Canada.

Electromagnetic Compatibility (EMC)

Federal Communications Commission (FCC)

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

NOTE! This device has been tested and found to comply with the limits established for Class A digital devices. It is intended to be used in a commercial environment. Operation of this equipment in residential environments may cause harmful interference, in which case the user may be required to correct the interference at his own expense.

CAUTION! Any changes or modifications not expressly approved by Novar Controls Corporation could void your authority to operate this equipment.

Industry Canada

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus set out in the interference-causing equipment standard entitled *Digital Apparatus*, ICES-003, of Industry Canada.

Cet appareil numérique respecte les limites de bruits radioélectriques applicables aux appareils numériques de Classe A prescrites dans la norme sur le matériel brouiller: *Appareils Numériques*, NMB-003, édictée par l'Industrie Canada.

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Description

NOTE! Anyone purchasing and installing a Novar Controls Touchscreen (NTS) must abide by the terms of the End-User License Agreement that appears at the end of this document. If this is not possible, the purchaser must **not** use the device or copy the software, but should contact Novar Controls to obtain instructions for returning the device.

Novar Controls' NTS remote touchscreen is a self-configuring remote touchscreen designed to be used with Novar Controls' Lingo[®] SE executive modules on Logic One[®] Automated Building Control System and RC² refrigeration controllers on Spectrum[®] Advanced Refrigeration Control System. It can be installed anywhere in a facility, automatically detects executive modules (units), and allows users to navigate to any executive module to monitor and make minor adjustments to system setpoints and schedules. NTS displays are similar to those displayed on the Lingo SE and RC² touchscreens.

NOTE! The NTS must be configured in the Unit Directory in ESS32. Its status can be viewed through ESS32 or iScope[®] real-time monitoring displays. Its version number is displayed next to the unit's name in the Unit Directory. If the NTS is in communication loss, the version number is replaced by a communication loss message. The NTS version number and build number are displayed on the Unit Parameters monitoring display.

Specifications

Agency Approvals

Listed device:	CUL/UL E219709
Standards used:	UL 916, Energy Management Equipment CSA C22.2, No. 205-M1983, Signal Equipment

Power Requirements

Voltage:	24 VAC \pm 10%, 50/60 Hz
Consumption:	24 VA

Operating Environment

Operating temperature:	32° to 113°F (0° to 45°C) 0–80% RH, noncondensing
Storage:	14° to 122°F (–10° to 50°C) 0–90% RH, noncondensing

Physical Dimensions

Height:	8.94 inches
Width:	8.58 inches
Depth:	2.36 inches

Precautions

Take the following precautions during installation:

- Observe all national and local electrical codes.
 - Turn off all power before installing and wiring this module.
-

Mounting the NTS

NOTE! The NTS must be mounted against a flat surface in a dry location. If the NTS will be wired with cable coming from behind the module, the cable should be pulled through the hole in the backplate before the module is mounted.

NOTE! No. 6–8 flathead screws (and appropriate wall anchors, if necessary) should be used to mount the NTS. These are not provided with the module.

The following procedure should be used to mount the NTS.

Step	Procedure
1	Insert the tip of a flat-head screwdriver into the slot on each side of the lower cover of the NTS (Figure 1) and pry the cover gently away from the NTS.
2	Remove the cover mounting screws on each side of the inside lower cover (Figure 2) and remove the cover.
3	Position the NTS against the flat mounting surface and mark the location of the mounting notch (located in the center, near the top, on the back of the NTS, Figure 2) and the two mounting holes located in the lower corners of the NTS backplate.
4	Drill holes for the mounting screws.
5	Insert but do not tighten the screw for the mounting notch.
6	Position the mounting notch (on the back of the NTS) over its mounting screw and slide the NTS down until the screw slides into the notch.
7	Insert mounting screws into each of the mounting holes in the lower corners of the NTS and tighten to secure the module.

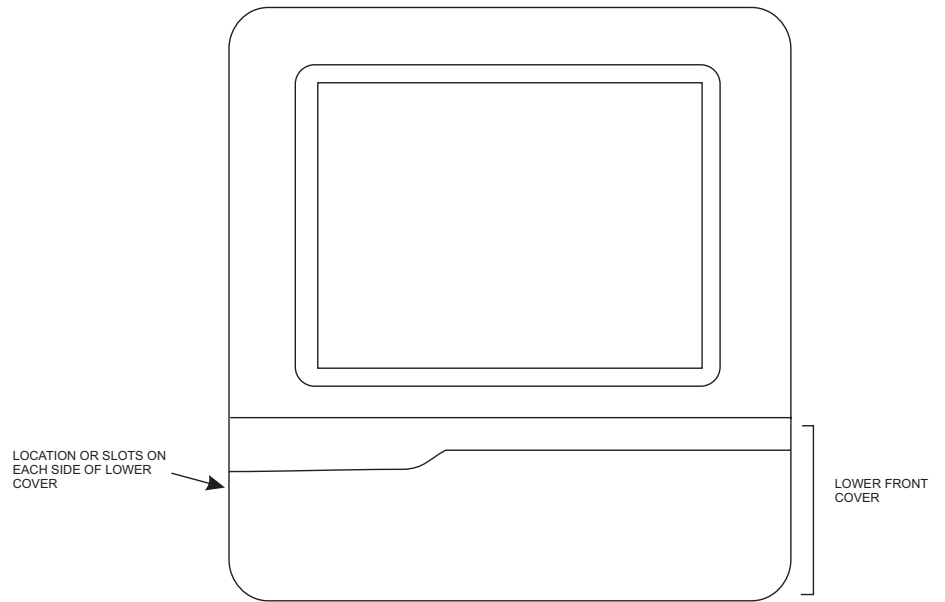


Figure 1. Position of slots on sides of NTS lower cover

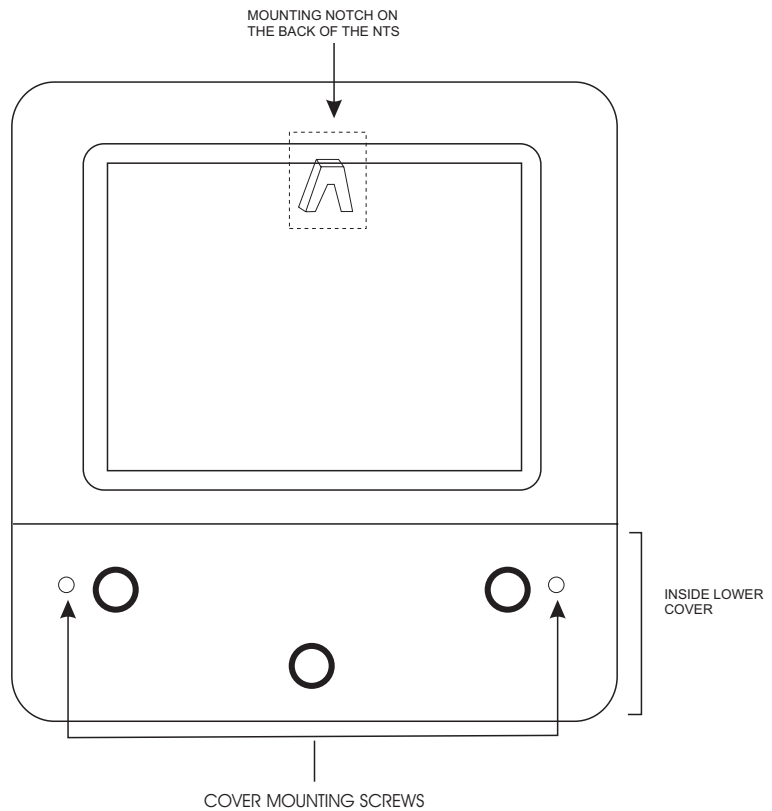


Figure 2. Lower inside cover and location of mounting notch

Wiring the NTS

Wiring connections should be made with 14–20 AWG cable. It can be routed from behind the NTS (through the hole in the backplate) or through openings provided on the bottom edge of the module. If the openings on the bottom of the module are to be used, two 3/4-inch cable glands must be removed (8-mm Allen key wrench required).

The following procedure should be used to make the connections.

Step	Procedure
1	Plug the Ethernet [®] connector into the module's Ethernet socket (labeled and located near the left side of the lower section of the module).
2	Connect the two leads from a 24-VAC power source or transformer to the two terminals on the left on the three-position terminal block located to the left of the Ethernet connection.
3	Connect an earth ground to the terminal on the right of the same terminal block.

Checking the Installation

Apply power to the NTS. If it was installed and wired correctly, the Novar logo should appear on the screen. If the default auto-detect function is in effect, the NTS searches for executive modules (units).

- If no units are found, it displays a blank Unit Directory.
- If it finds one or more units all on one system, it incorporates the system number, unit number, name, and IP address of each in the Unit Directory and displays the directory.
- If it finds units on more than one system, the NTS also creates a System Directory containing the number and name of each system and displays it instead of the Unit Directory.

If the module is operating properly, the inside and outer covers should be reinstalled.

Setting Up the NTS

A toolbar appears at the top of the NTS. It contains the following items:

- **Back** button (returns the user to the previous screen)
- **Refresh** button (redraws the screen)
- **Home** button (returns to the System Directory if more than one system exists or to the Unit Directory if only one system exists)
- **Setup** button (displays the Setup screen used to configure the NTS)
- An **A** button (displays a numerical keypad intended for future use)
- Novar logo (spins when the NTS is making a request)

To set up the NTS, the user selects the **Setup** button on the toolbar to display the Setup screen (Figure 3).

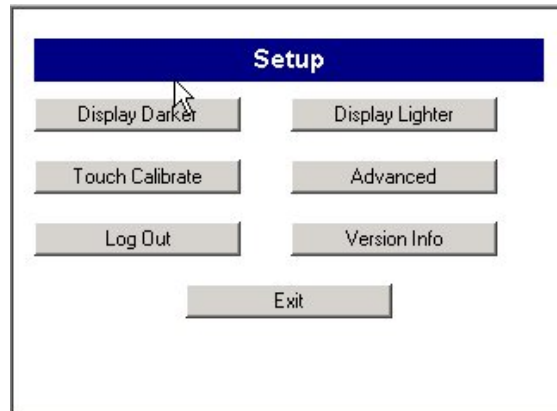


Figure 3. NTS Setup screen

Each of the options offered in this screen is explained below.

Display Darker & Display Lighter

The **Display Darker** and **Display Lighter** buttons are used to adjust the screen contrast, making it darker or lighter, respectively.

Touch Calibrate

The **Touch Calibrate** button is used to adjust the sensitivity of the touchscreen. The user is instructed to press and hold on the center of a cross-hair target as it moves from the center to each corner of the screen. The user is then informed that the settings have been measured and is instructed to tap the screen to save the data or wait 30 seconds to cancel the saved data and exit the screen.

Advanced

Each time the NTS is activated, the first time the user presses the **Advanced** button, the NTS displays an Enter Password screen (Figure 4).



Figure 4. Enter Password screen

To enter the password, the user must:

- Press the empty password field to display a numerical keypad.
- Press the appropriate number(s) and **Submit**.
- Press **Enter**.

The default password is 5555. Once the user is in the screen, the password can be changed to any one- to six-digit code between 0 and 999999 via the Admin Settings screen. As long as the user is actively using the NTS, a password will not be requested again.

Once the password has been entered, the Advanced Setup screen (Figure 5) is displayed.

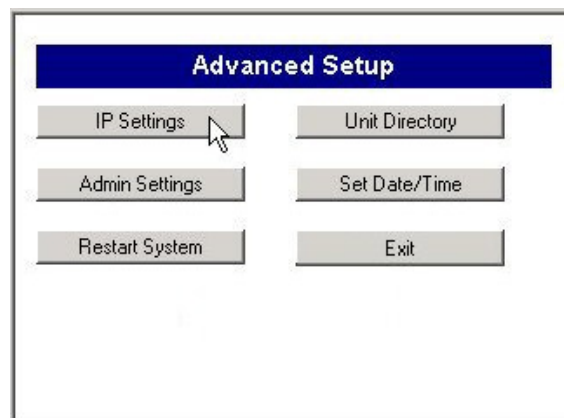


Figure 5. Advanced Setup screen

Each of the options offered in this screen is explained below.

IP Settings

The **IP Settings** option displays the IP Settings screen (Figure 6).

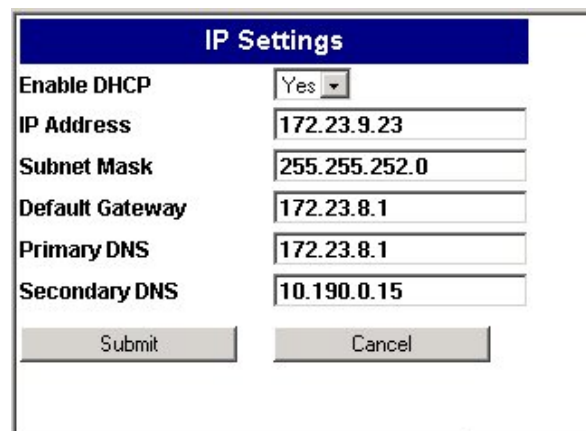


Figure 6. IP Settings screen

A user's ability to change the settings in this screen is controlled by the Enable DHCP setting.

- If DHCP is enabled (set to "Yes"), when the NTS is powered up it broadcasts a DHCP request to the configured DHCP server. The server responds by populating the IP Address, Subnet Mask, Default Gateway, Primary DNS (Domain Name System) server, and Secondary DNS server fields with the appropriate settings.

As long as the DHCP is enabled, the user can attempt to change these settings and submit the changes, but the NTS will reject them.

- If DHCP is disabled (set to "No"), the user can change any of the settings on the screen and press **Submit** to apply the changes.

Unit Directory

The Unit Directory (Figure 7) displays the following information for each configured unit

- System number
- System name
- Unit number
- Unit name
- IP address

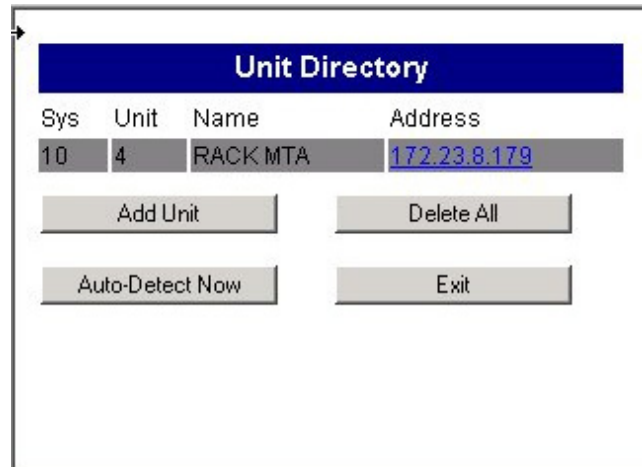


Figure 7. Unit Directory screen

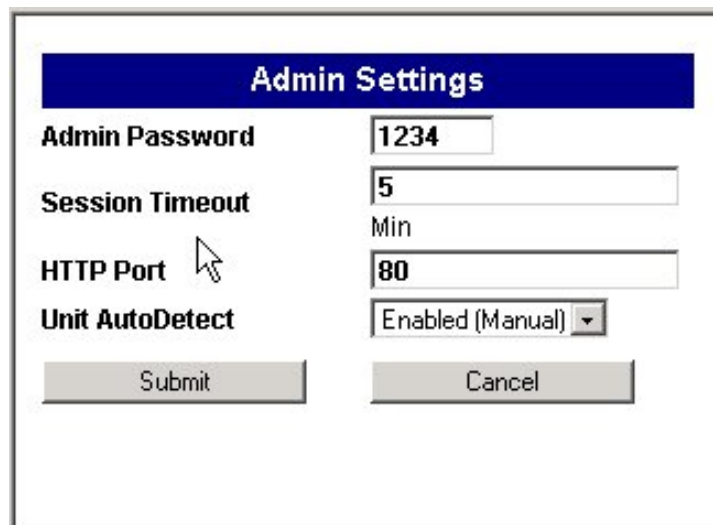
If the user presses any of the information for a specific unit, an Add New Unit screen appears. It shows the selected unit's IP address and HTTP Port and can be used to change this information or to delete the unit from the system.

The following options appear at the bottom of the Unit Directory:

OPTION	EXPLANATION
Add Unit	This option displays an Add New Unit screen used to add a unit to the Unit Directory manually. The user must enter the unit's IP address or alphanumeric name (up to 45 characters, DNS style) and HTTP Port number and press Submit to add the unit to the system or press Cancel to return to the Unit Directory without adding a unit.
Delete All	This option should be used with caution. It automatically removes all units from the Unit Directory.
Auto-Detect Now	<p>NOTE! For this option to work, the Unit Auto Detect option in Admin Settings must be set to Enabled (Manual) or (Auto).</p> <p>When this option is selected, the NTS displays a message that automatic detection can take up to 30 seconds and asks if the user wants to continue. If the user presses Yes, it triggers automatic detection of all Logic One or Spectrum units and displays them in the Unit Directory.</p>
Exit	This button takes the user back to the Advanced Setup screen.

Admin Settings

The Admin Settings screen (Figure 8) is used to establish administrative settings for the options listed below.



The screenshot shows a window titled "Admin Settings" with a blue header bar. Below the header, there are four rows of settings, each with a label on the left and a corresponding input field on the right. The first row is "Admin Password" with a text box containing "1234". The second row is "Session Timeout" with a text box containing "5" and the label "Min" below it. The third row is "HTTP Port" with a text box containing "80" and a mouse cursor pointing at it. The fourth row is "Unit AutoDetect" with a dropdown menu showing "Enabled (Manual)". At the bottom of the window, there are two buttons: "Submit" on the left and "Cancel" on the right.

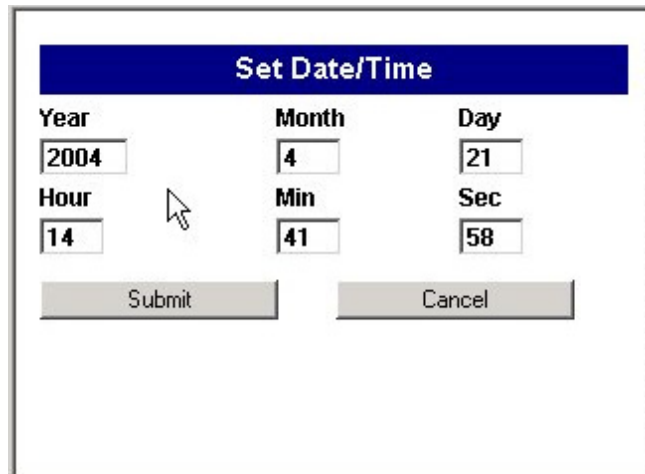
Figure 8. Admin Settings screen

NOTE! If any of the Admin Settings are changed, the user must press **Submit** in the Admin Settings screen to apply the changes. The screen will request verification that the Admin Settings are to be reset. If the user confirms the request, the system reboots. Pressing **Cancel** in the Admin Settings screen returns the user to the Advanced Setup screen without saving any changes.

OPTION	EXPLANATION
Admin Password	The default password is 5555. The user can change it to any one- to six-digit numerical code between 0 and 999999. The password must be entered before any of the Advanced Setup settings can be changed.
Session Timeout	<p>This option is used to establish an automatic logout time. If the NTS sees no touchscreen activity for the amount of time indicated here, it automatically:</p> <ul style="list-style-type: none"> ■ Logs the user out of the system. ■ Returns to the default display ■ Dims the touchscreen backlight. ■ Starts a screen saver (floating current time display) <p>The default timeout setting is 15 minutes. Any value between 0 and 65535 minutes can be entered</p>
HTTP Port	This field is used to establish the NTS internal Web server's port number. The NTS responds to requests directed to this port.
Unit Auto Detect	<p>This field establishes the Unit Auto Detect option as:</p> <ul style="list-style-type: none"> ■ Disabled—The NTS does not attempt to automatically discover Logic One or Spectrum executive modules on its network. ■ Enabled (Manual)—This is the default setting for this option. The NTS does not attempt to automatically discover executive modules on its network unless auto detect is manually triggered from the Administrative Settings or Unit Directory Display. ■ Enabled (Auto)—The NTS automatically looks for Logic One or Spectrum executive modules on its network when the Auto-Detect Now function in the Unit Directory is selected or the NTS is powered up.

Set Date/Time

The **Set Date/Time** option in the Advanced Setup screen displays a Set Date/Time screen (Figure 9), which is used to set the current year, month, day, hour (1–24), minutes, and seconds. The time that is set here is used for the floating screen saver.



The image shows a dialog box titled "Set Date/Time". It contains six input fields arranged in two rows. The first row has "Year" (2004), "Month" (4), and "Day" (21). The second row has "Hour" (14), "Min" (41), and "Sec" (58). A mouse cursor is pointing at the "Min" field. At the bottom, there are two buttons: "Submit" and "Cancel".

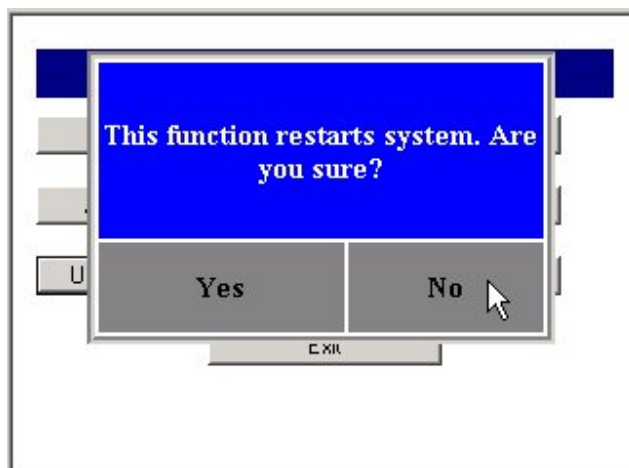
Year	Month	Day
2004	4	21
Hour	Min	Sec
14	41	58

Submit Cancel

Figure 9. Set Date/Time screen

Restart System

When the user selects the **Restart System** option, the NTS displays a confirmation request (figure 10). If the user confirms that the system is to be restarted, the system shuts down and reboots.



The image shows a confirmation dialog box with a blue background and white text. The text reads "This function restarts system. Are you sure?". Below the text are two buttons: "Yes" and "No". A mouse cursor is pointing at the "No" button. At the bottom of the dialog, there is a small label "C XII".

This function restarts system. Are you sure?

Yes No

C XII

Figure 10. Restart confirmation request

Exit

The **Exit** option in the Advanced Setup screen returns the user to the Setup screen.

Logout

The **Logout** option in the Setup screen cancels the current password and returns the user to the System Directory.

Version Info

The **Version Info** option in the Setup screen displays the Version Info screen. The information displayed here is for viewing only; no changes can be made. It shows:

- Firmware version number
- Build number
- MAC address
- Product variant
- CPLD Version

The **Exit** button at the bottom of the screen returns the user to the Setup screen.

Exit

The **Exit** button on the Setup screen returns the user to the System or User Directory.

Accessing Monitoring Screens for a Unit

Once the NTS has been set up, the user can access a unit's screens to monitor it and make minor adjustments to its operating parameters. To do this, the user must:

- Access the appropriate system to display the Unit Directory for that system.
- Select a unit.

The monitoring screens in the NTS are the same as screens displayed in the Lingo SE or RC² touchscreens and work the same way. For additional information, users should refer to the following Novar Controls technical documentation:

- *Lingo SE Touchscreen and Web Browser User's Guide*
 - *RC² User's Manual*
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Model and Part Numbers

Table 1 provides the part numbers that should be used to order the appropriate Novar Controls parts.

Table 1. Novar Controls Part Numbers		
PRODUCT	MODEL NO.	PART NO.
Novar Touchscreen	NTS	XNTS -4020L4
24-VAC Transformer (40 VA) knockout mount	24V-XFR	730090000

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