



ETM Programming and Monitoring Instructions

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Description

Electronic Thermostat Modules (ETMs) are dedicated digital controllers that manage rooftop or unitary HVAC equipment and are often used to upgrade from a conventional thermostat to a device that offers fully distributed digital control. The ETM-1010 is generally installed in the same location as a standard thermostat within the controlled space. The other modules are mounted in the HVAC unit. The basic ETM configuration consists of internal temperature sensors and schedule override buttons.

Like thermostats, ETMs provide primary closed-loop control of multi-staged HVAC equipment. Unlike thermostats, ETMs use advanced, adaptive algorithms to control setpoints, resulting in precise control, making them more energy-efficient than conventional thermostats.

ETMs provide advanced control strategies that include:

- Timed local setback override.
- Outdoor temperature lockout.
- Automatic heating/cooling switch-over.
- Adaptive setpoint anticipation to eliminate setpoint overshoot/undershoot.

The following models are available.

MODEL	APPLICATION
ETM-1010	Used with general staged HVAC packaged units, makeup-air heaters, staged single-zone fan coil units, etc.
ETM-2020	Used with staged HVAC system applications that require a second temperature sensor, dirty filter indication, outside damper enthalpy lockout, and remote mounting indoors or outdoors.
ETM-2024	Used for staged HVAC systems that require the features of an ETM-2020 plus a night damper relay to close an outside damper during unoccupied periods.
ETM-2040	Used with staged HVAC system applications that require a second temperature sensor (typically discharge air or second zone), dirty filter indication, and outside damper enthalpy lockout.
ETM-2051	Use to meet the specifications of an original equipment manufacturer (OEM).
ETM-3010	Used for packaged HVAC units, unit and make-up air heaters, and staged single-zone fan coils.
ETM-3010D	Used for packaged HVAC heat pump units.
ETM-3051	Used in environments (such as schools or warehouses) where the space temperature sensor might be abused.

Programming Overview

To set or change an ETM's parameters, a user must access the ESS32 Function Menu (Figure 1) and select the **Load Control** option to access the Load Directory screen.

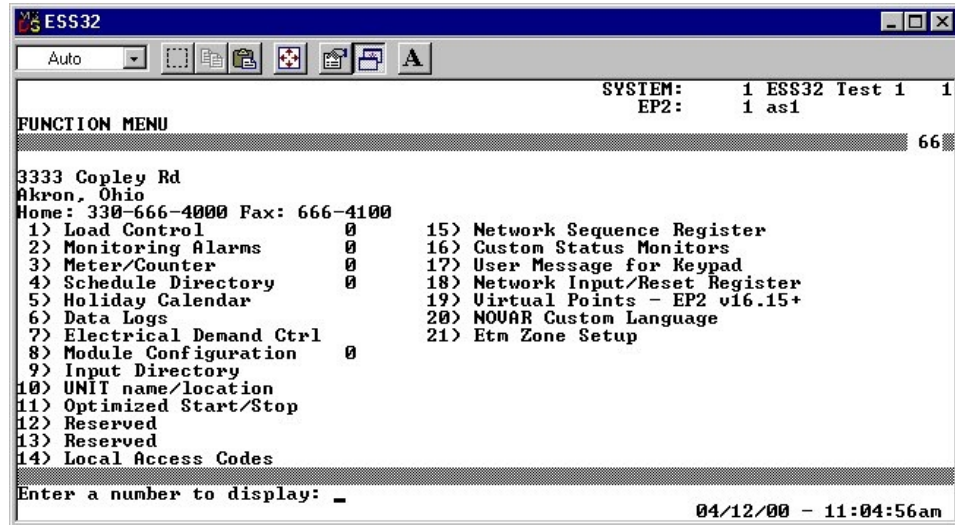


Figure 1. ESS32 Function Menu

The Load Directory screen can be used to:

- Create a new ETM load.
- Access a load's Menu screen and Control Settings/Parameters screen to set or modify its parameters.

Creating an ETM Load

The following procedure should be used to create a new ETM load.

Step	Procedure
1	Type an unassigned number at the prompt and press enter to highlight the field next to that number.
2	Type a name for the load in the highlighted field and press enter to produce a load type popup menu.
3	Use the keyboard arrow keys to move the cursor to and highlight the appropriate load type and press enter to produce an ETM model popup screen (Figure 2).

continued

Step	Procedure
4	<p>Use keyboard arrow keys to move the cursor to and highlight the appropriate ETM model and press enter to let the software assign the next available module address or press Ctrl + enter to select a specific module address to be assigned to the ETM.</p> <hr/> <p>NOTE! Some of the options offered in the ETM model popup screen do not refer to specific ETM models. They are descriptions of a group of ETM types that can be programmed when that option is selected. Refer to the table below to match an option with an ETM type.</p> <hr/>

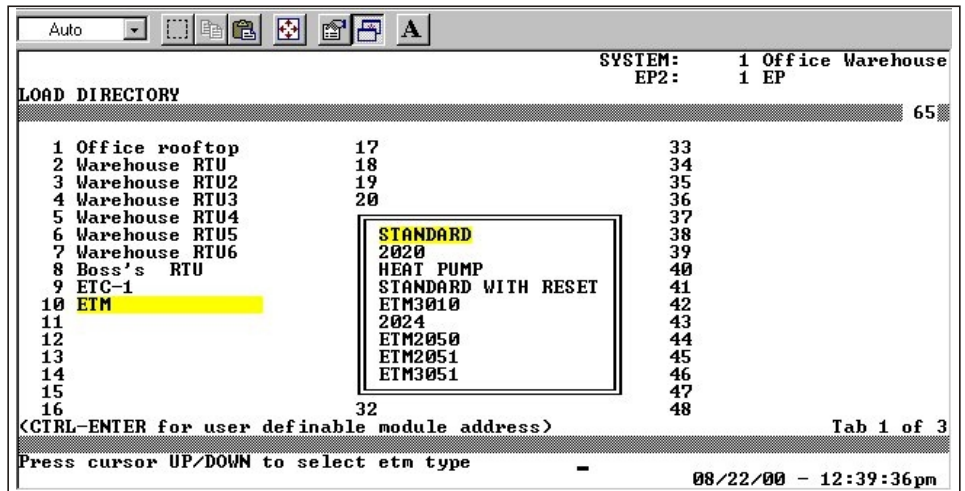


Figure 2. ETM Type popup screen

IF ETM TYPE IS	THEN SELECT
ETM-1010	Standard
ETM-2020, ETM-2040	2020
ETM-3010	ETM3010
ETM-2024	2024
ETM-2051	ETM2051
ETM-3051	ETM3051

Once the load has been created, it is ready to be programmed.

Modifying/Setting an ETM's Parameters

The parameters for a load are listed in that load's Control Settings/Parameters screen. To access this screen from the Load Directory, the user must:

- Type the load's number at the prompt and press **enter**.
- Select **1** (Modify/Display) and press **enter** to display a Menu for that load.
- Select the **Control Settings and Parameters** option and press **enter**.

The Control Settings/Parameters screen shown in Figure 3 lists the parameters for a Standard ETM. Screens for other ETM models may differ slightly.

The message "Tab 1 of 3" in the lower right corner of the screen indicates that list of parameters takes up three screens. The user can press **tab** to display the parameters listed on the next screen.

```
ESS32
Auto
LOAD: 1 ETM Load #1          SYSTEM: 1 ESS32 Test 1 1
TYPE: ELECTRONIC THERMOSTAT EP2: 1 as1
CONTROL SETTINGS/PARAMETERS MODULE: 000 ETM Load #1
1) Cool setpoint:          FIXED      74°F
2) Cool setpoint reset:   INACTIVE
3) Heat setpoint:         70°F
4) Cool setback:         85°F
5) Heat setback:         60°F
6) Fan operation (Scheduled ON): AUTO
7) Fan operation (Scheduled OFF): AUTO
8) Cool stage 1 setpoint differential: 1.0°F
9) Cool stage 2 setpoint differential: INACTIVE
10) Heat stage 1 setpoint differential: 1.0°F
11) Heat stage 2 setpoint differential: INACTIVE
12) Heat stage 3 setpoint differential: INACTIVE
13) Damper control:      INACTIVE
    OSA temp (high) limit (less than): INACTIVE
    OSA temp (low) limit (greater than): INACTIVE
14) RESERVED
    System enthalpy lockout: INACTIVE
Enter a number to modify:
                                04/19/00 - 10:01:10am
                                TAB 1 of 3
```

Figure 3. ETM Control Settings/Parameters screen

To modify a specific parameter, the user must type that parameter's number on the prompt line at the bottom of the screen and press **enter**. The cursor will move to the field next to the parameter and the prompt line will provide instructions for changing the settings. Once an option has been selected or the correct setting has been entered, the user must press **enter**.

ETM Control Settings and Parameters

An explanation of the ETM parameters and the options offered for each follows.

NOTE! The parameters listed below do not necessarily apply to all ETM models.

Cool Setpoint

This parameter establishes the cool setpoint temperature for scheduled on periods. The Cool Setpoint must be at least 1°F higher than the economizer and heat setpoint.

- Default: Fixed; 74°F
- Range: Fixed: 46°F to 95°F; Reset: 46°F to 95°F

Heat and cool setpoints may be entered as low as 1°F dead band, dependent upon differentials. Stage 1 heat and cool differentials must be less than or equal to 1°F.

Cool Setpoint: Reset

When the cool setpoint is set to **Reset**, this parameter establishes the cool setpoint reset range for the ETM-2024 and Standard with Reset models.

- Default: Inactive if Cool Setpoint is set to Fixed; 0°F–0°F if Cool Setpoint is set to Reset.
 - Range: 0°F to 99°F
-

Heat Setpoint

This parameter establishes the heat setpoint temperature during scheduled on periods. The maximum setting must be one degree below the cool setpoint.

- Default: 70°F
 - Range: 45°F to one degree less than the Cool Setpoint value
-

Cool Setback

This parameter establishes the cool setback temperature during scheduled off periods.

- Default: 85°F
 - Range: One degree above the Heat Setback value to 127°F
-

Heat Setback

This parameter establishes the heat setback temperature during scheduled off periods.

- Default: 60°F
 - Range: 45°F to one degree less than the Cool Setback value
-

Fan Operation (Scheduled On)

This parameter selects the mode of operation for the fan.

- Default: Auto
- Range: Continuous or Auto

Select **Auto** to cycle the fan only when heat or cool is needed. Select **Continuous** to keep the fan on during periods when the ETM is scheduled on.

Fan Operation (Scheduled Off)

This parameter selects the mode of operation for the fan during the scheduled off mode.

- Default: Auto
- Range: Continuous or Auto

Select **Auto** to cycle the fan only when heat or cool is needed. Select **Continuous** to keep the fan on during periods when the ETM is scheduled off.

Cool Stage 1 Setpoint Differential

This parameter specifies the temperature change that must take place before the ETM cooling function recycles.

- Default: 1.0°F
- Range: 0.5°F to 3°F

The Cool Stage 1 differential value is split half above and half below the Cooling setpoint.

Cool Stage 2 Setpoint Differential

This parameter specifies the number of degrees the temperature must rise above the cooling setpoint before ETM activates the second cooling stage.

- Default: Inactive
- Range: 0.5°F to 5.0°F (0°F = Inactive); 0–20 minutes interstate sequence delay

The interstate sequence delay determines how long the ETM is to wait after activating Cool Stage 1 before it activates Cool Stage 2.

Heat Stage 1 Setpoint Differential

This parameter specifies the temperature change that must take place beyond the specified heat setpoint before the ETM heating function recycles.

- Default: 1.0°F
- Range: 0.5°F to 3°F

The Heat Stage 1 differential value is split half above and half below the Heat setpoint.

Heat Stage 2 Setpoint Differential

This parameter specifies the number of degrees the temperature must drop below the heat setpoint before the ETM activates the second stage of heating.

- Default: Inactive
- Range: 0.5°F to 5°F (0° = Inactive), 0 to 20 minutes (interstate sequence delay)

The interstate sequence delay determines how long the ETM is to wait after activating the first stage of heating before it activates the second stage. When a temperature is set, the interstate sequence delay parameter is enabled.

Heat Stage 3 Setpoint Differential

NOTE! When Heat 3 is enabled, Damper Control cannot be used.

This parameter specifies how many degrees below the heat setpoint the temperature must go before the ETM activates the third stage of heating.

- Default: Inactive
- Range: 2°F to 9.5°F (0 = Inactive), 0 to 20 minutes (interstate sequence delay)

The interstate sequence delay determines how long the ETM is to wait after activating the second stage of heating before it activates the third stage of heating.

Damper Control

This parameter defines HVAC damper operation.

- Default: Inactive
- Range: Active, Inactive, or Economizer

Selecting **Active** cycles the damper with fan operation. Selecting **Inactive** uses the damper output point for Heat Stage 3. Selecting **Economizer** enables the damper when the ETM is in cooling mode and is within a specified outside temperature range.

OSA Temp (high) Limit (less than)

This parameter specifies the outdoor temperature below which the damper output is enabled when the damper control is set to Economizer.

- Default: Inactive
 - Range: 31°F to 95°F
-

OSA Temp (low) Limit (greater than)

This parameter specifies the outdoor temperature above which the damper output is enabled when the damper control is set to Economizer.

- Default: Inactive
- Range: -31°F to n°F

“n°F” is the temperature specified in the OSA Temp (high) Limit (less than) field.

System Enthalpy Lockout

This parameter allows dampers to operate (if selected as Economizer with correct economizer limits) when a specified IOM output is on. A global enthalpy load must be selected from the executive module’s setup screen.

- Default: Inactive
- Range: Active or Inactive

The enthalpy output is normally on, signaling that the outside air can be used for economizer cooling.

Active Cool Mode?

This parameter activates or deactivates the ETM’s cooling function.

- Default: Yes
 - Range: Yes or No
-

Active Heat Mode?

This parameter activates or deactivates the ETM’s heating function and specifies the type of heating (gas or electric).

- Default: Yes - Electric
- Range: Yes (electric) or No (Gas)

Gas or electric can be selected when the heating function is activated or deactivated. **Electric** will turn on the fan output on a call for heating if auto fan is selected.

Gas will not turn on the fan output on a call for heating if auto fan is selected. The internal function of the unit should turn on the blower fan.

OSA Temp Cool Lockout (less than)

This parameter specifies the outdoor temperature below which cooling is locked out.

- Default: Inactive
 - Range: 0°F to 99°F (0°F = inactive)
-

Demand Control

This parameter activates or deactivates the ETM's participation in the system's demand control function.

- Default: Inactive
- Range: Active or Inactive

Selecting **Active** opens a Demand Shed Register screen that prompts the user to select Register A or Register B. Load shedding is subject to the constraints of the control settings and parameters for each individual load. If a load has been included in one of the shed registers listed under demand control and demand control is changed to inactive at a later date, the ETM disregards shedding instructions from the demand control routine.

For more information about Demand Shed, refer to Novar's *ESS32 Programming Manual* (available in the Documents folder on the Novar Software Package CD).

Demand Active in Cool Mode

This parameter determines if demand control is active during cooling mode.

- Default: No
 - Range: Yes or No
-

Demand Active in Heat Mode

This parameter determines if demand control is active during heating mode.

- Default: No
 - Range: Yes or No
-

Demand Period Continuous Fan

This parameter determines if the fan should operate continuously during demand shed periods.

- Default: No
- Range: Yes or No

NOTE! Selecting **Yes** does not bring on the fan output if the module is in a "Zero Energy Band" (that is, if the fan is not already commanded on).

Demand Setpoint Adjust

This parameter determines if the ETM turns off or only alters its setpoints by a specified amount during demand shed periods.

- Default: 0°F
- Range: Load Shed Off or Setpoint Adjust

Selecting **Setpoint Adjust** prompts the user to enter a setpoint adjust temperature between 0°F and 9°F. If the zone temperature exceeds the control setpoint plus the setpoint adjust, demand shed will be ignored.

Optimized Start/Stop

This parameter enables or disables the optimized start/stop function for the equipment controlled by the ETM and specifies the allowable drift temperature during optimized stop. This allows the module to try to meet the control setpoint by the scheduled on time.

- Default: Inactive
- Range: Active or Inactive

The optimized start/stop function must have a primary schedule established before this parameter can be enabled.

Airflow Input

This parameter activates or deactivates the ETM's confirming airflow switch input. If it is set to **Active** and airflow is not detected, the fan and all outputs are deenergized.

- Default: Inactive
 - Range: Active or Inactive
-

Drift Limit Alarm

This parameter activates or deactivates an ETM drift limit alarm if the ETM is unable to come within 3°F of its heating or cooling setpoint. The alarm is automatically inhibited as long as the space temperature is approaching the setpoint by at least 0.5°F per 10 minutes.

- Default: Inactive
- Range: Active or Inactive

Selecting **Active** displays the drift limit alarm if the ETM is unable to achieve the heating or cooling setpoint. The alarm condition is reported to ESS32.

Selecting **Inactive** displays the drift limit alarm if the ETM is unable to achieve the heating or cooling setpoint. The alarm condition is not reported to ESS32.

Site Emergency

This parameter determines if the ETM should be turned off when the executive module detects a site emergency.

- Default: Inactive
- Range: Active or Inactive

Network Emergency is part of the Site Emergency parameter. It is set as active or inactive, based on the options selected in a monitoring alarm.

Timed Override Period

This parameter specifies how long the ETM is to operate if the override button on the ETM is pressed during a scheduled off period.

- Default: Inactive
- Range: 0 hrs, 0 min to 4 hrs 13 minutes

Setting the period to 0 hours, 0 minutes inactivates the override. Setting it to 4 hours, 14 minutes results in continuous operation. A remote user can force an override via ESS32.

Network Sequence

If the ETM's operation is dependent upon other equipment in the system, this parameter allows the user to sequence the ETM's operation to that equipment. This means that if that equipment is not operating, the ETM is turned off. (It does not honor its setpoints or other parameter settings.)

- Default: Inactive
- Range: Active or Inactive

The executive module controlling the ETM determines how sequencing is accomplished. For example, for an EP/2, if the user selects **Active** for the Network Sequence parameter, three options are offered:

- Selecting **Loads** allows the user to sequence the ETM's operation to specific loads selected from the Load Directory.
- Selecting **Virtual Points** allows the user to sequence the ETM's operation to specific virtual points selected from the Virtual Points Directory.
- Selecting **Global Inputs** allows the user to sequence the ETM's operation to specific global outputs selected from other EP/2s in a NovarNet[®] system.

Once the specific loads, virtual points, or global inputs have been selected, the system takes the user to the Network Sequence Status parameter so additional options can be selected.

ETM Programming and Monitoring Instructions

Network Sequence Status

This parameter is used to determine if the Network Sequence parameter applies to **any** or **all** of the specified loads, virtual points, or inputs based on their on or off state.

- Default: Inactive
- Range: Active, Any/All, On/Off, or Inactive

If unitary controller loads were selected in the **Network Sequence** parameter, the user can choose between heat, cool, or heat/cool sequence state.

Monitoring Input

This parameter designates an IOM input (for example, supply-air temperature) not on the ETM that can be displayed on the ETM's monitoring screen.

- Default: Inactive
- Range: Active or Inactive

Selecting **Active** opens an Input Directory screen that allows the user to create a new input or select an existing one.

ETM Auxiliary Sensor

This parameter applies to the ETM-2020, ETM-2024, ETM-2040, ETM-2051, and ETM-3051. It establishes a temperature range that the ETM uses in conjunction with the primary sensor for control (see "Control To" below).

- Default: Inactive
 - Range: Dependent upon the module type
-

Control To

This parameter applies to the ETM-2020, ETM-2024, ETM-2040, ETM-2051, and ETM-3051. It bases the ETM's control on its auxiliary sensor input and/or its temperature sensor input.

- Default: Depends on ETM type.
- Range: Zone temperature sensor, Average of two sensors, and Highest/lowest

Selecting **Zone temperature sensor** causes control to be based on the temperature sensor input only. Selecting **Average of two sensors** causes control to be based on the average of the auxiliary sensor input and zone temperature sensor inputs. Selecting **Highest/lowest** causes the ETM to control cooling or heating to the highest or lowest sensor readings.

OSA Temp Heat Lockout (greater than)

This parameter applies to the ETM-2020, ETM-2024, ETM-2051, ETM-3010, and ETM-3051. It establishes the outdoor temperature at or above which heating stages are locked out.

- Default: Inactive
 - Range: 0°F to 99°F (0°F = Inactive)
-

ETM Type

This parameter is used to select the type of ETM used.

- Default: The ETM type selected when the load was created.
- Range: Standard, ETM-2020, Heat Pump, Standard with Reset, ETM-3010, ETM-2024, ETM-2051, ETM-3051

The Phase Loss, ETM Auxiliary Sensor, Control To, and OSA Temp Heat Lockout (greater than) parameters are activated, depending on the ETM type selected.

Heat Pump Compressor Delay

This parameter applies to the ETM-3010D. It specifies how long the compressor is to be kept off during a call for cooling so that network sequence can turn on another system load (such as the loop pump) before energizing the compressor.

- Default: Inactive
 - Range: 0–20 minutes
-

Sensor Failure Control Mode

This parameter defines the sensor failure default mode.

- Default: Default
 - Range: Cool (force cooling on), Heat (force heating on), Default (fan off)
-

Nite Mode Relay

This parameter allows you to reverse the contacts of the Nite Mode relay, also referred to in ESS32 as the Ventilation Relay.

The relay is intended to be wired in series with the damper minimum position potentiometer. “Normal” means that during occupied times, the relay contact is closed, enabling the minimum position potentiometer to maintain minimum position. During unoccupied times, the relay is open, breaking the circuit of the minimum position potentiometer and allowing the damper to go fully closed. By setting this to **Reverse**, the relay will be open during occupied times and closed during unoccupied times.

NOTE! On the ETM-3051T, the nite mode relay can also be used with the demand ventilation function. Reversing the contacts of the nite mode relay also reverses the contacts for the demand ventilation function. The ability to reverse these contacts with the demand ventilation function requires ETM-3051T firmware Version 8.5 or greater.

Setpoint Adjust Mode

This parameter enables local heating and cooling setpoint adjustments.

- Default: Inactive
- Range: Inactive, Active Always, and Active Schedule Mode Sensitive

Selecting **Inactive** disables the setpoint adjust mode.

Selecting **Active Always** activates the setpoint adjust mode auxiliary input during the scheduled on times.

Selecting **Active—Schedule Mode Sensitive** requires the occupant to push the timed override button prior to adjusting the setpoint adjust dial on the auxiliary input during scheduled on times. The adjustment automatically cancels when the unit schedules off. During the scheduled off mode, it is not active. During a timed override mode, it is always active.

IMC State

This parameter applies to the ETM-2051 only. It allows communication to the original manufacturer's equipment to retrieve error codes.

Default: Inactive

Range: Active or Inactive

Alternate Zone Control Mode

This parameter applies to the ETM 2051 and ETM-3051 only.

- Default: Standard
- Range: Standard, Fall Back, and Control To

If **Standard** is selected, the module controls to the normally wired ETM-2051 zone sensor. The zone sensor fault alarm applies to this input only.

If **Fall Back** is selected, the module controls to the enhanced zone sensor, which when used is wired to the setpoint adjust (POT) input. If this sensor fails, control reverts back to the normally wired zone sensor. The zone sensor fault alarm applies to both inputs.

If **Control To** is selected, the module controls to the normally wired zone sensor. The zone sensor fault alarm applies to both inputs.

Demand Ventilation

The ETM-3051T contains a demand ventilation feature that can be used to monitor the CO₂ level in the zone and open the damper when a defined CO₂ limit is exceeded. It does this by using the ETM-3051T's Ventilation Output (also referred to as the Nite Mode Relay).

CO₂ Input

This parameter applies to the ETM-3051T only. It is used to define the system input that is used to monitor the CO₂ level in the zone to be controlled.

CO₂ Setpoint

This parameter applies to the ETM-3051T only. It is used to define the CO₂ level that must be exceeded before the ventilation relay (also known as the nite mode relay) is activated. Different ETMs can have different setpoints, allowing common areas to have staggered setpoints to gradually increase the amount of ventilation as the CO₂ level increases.

ETM Monitoring

Monitoring Functions Screen

The parameters and values displayed on an ETM Monitoring Functions screen (Figure 4) will vary, depending on the ETM load type specified when the load was created.

LOAD: 1 NCC OFFICE	SYSTEM: 19 NovarHQep2 X-17
TYPE: ELECTRONIC THERMOSTAT	EP: 1 REAL LOADS & all
MONITORING FUNCTIONS	MODULE: 006 NCC OFFICE
18	
Zone temperature:	72°F
Control setpoint: c	71°F
Cool setpoint:	71°F
Heat setpoint:	69°F
Demand setback:	0°F
Cool anticipator:	0.0°F
Heat anticipator:	0.5°F
Active stages:	COOL 1 Cool 1-2 Delay 1 min 36 sec
Fan status:	ON
Damper position:	CLOSED
Schedule mode:	ON
On mode activated by:	SCHEDULE
Override remaining:	0 MINUTES
OSA Temp: 61°F	Sys Humidity: 46 %RH
Press an F to FORCE schedule until next schedule on TAB FOR RUN-TIME	

Figure 4. ETM Monitoring Functions screen

The prompt line at the bottom of the screen displays instructions for initiating timed overrides, forcing overrides, or canceling an override, depending on the module's current schedule status. The following table explains the options.

OVERRIDE FUNCTION	EXPLANATION
Initiate a timed override	<p>If the module is in scheduled off mode, typing the letter T (timed override) at the prompt initiates a timed override.</p> <hr/> <p>NOTE! When a timed override is initiated from the monitoring screen, the LED located on the front of the ETM does not flash as it would if the user initiated the override at the ETM. The module communications LED does continue to flash normally.)</p> <hr/> <p style="text-align: right;"><i>continued</i></p>

OVERRIDE FUNCTION	EXPLANATION
Force an override	Typing the letter F (force) at the prompt forces the module to remain on if it is scheduled to turn off. This override automatically terminates when the ETM returns to the scheduled on mode.
Cancel a timed override	Typing the letter C (cancel) at the prompt cancels a timed override.
Cancel a forced override	Typing the letter Q (quit) at the prompt cancels a forced override.

NOTE! It is not necessary to press **enter** after pressing the override function keys.

As indicated in the lower right corner of the screen, if the user presses the **tab** key, the system displays the run times (in hours; Figure 5) since the end of the last maintenance interval. It also shows the ETM PROM version.

LOAD: 1 NCC OFFICE	SYSTEM: 19 NovarHQep4
TYPE: ELECTRONIC THERMOSTAT	EP: 1 REAL LOADS
MONITORING FUNCTIONS	MODULE: 006 NCC OFFICE
ETM VERSION	
ETM Load Run-Times since last Maintenance Interval	
FAN :	493 hours
COOL 1 :	111 hours
COOL 2 :	15 hours
HEAT 1 :	11 hours
HEAT 2 :	6 hours
HEAT 3 :	0 hours

Figure 5. ETM Run times screen

Parameter Values

The Monitoring Functions screen lists the following parameters and their current values. If a field's parameter has been modified with a temporary setpoint, the word "***LOCAL**" appears next to it.

Zone Temperature

This field shows the current temperature detected by the temperature sensor located in the ETM's zone.

Auxiliary Input

If an auxiliary sensor has been programmed for the ETM, the temperature detected by the sensor appears on the screen, to the right of the Zone Temperature value, and is identified as "Auxiliary Sensor."

Control Setpoint

This field shows the current controlling setpoint value based on the zone temperature, heating/cooling setpoints, schedule status, and demand status.

Cool Setpoint, Cool Setback, Heat Setpoint, Heat Setback

These fields show the programmed setpoint values for the desired operating conditions.

The display changes from setpoint to setback based on the schedule mode. Setpoints are shown when the ETM is in an override or scheduled on mode. The setback temperature is shown during an unoccupied period when the ETM is scheduled off.

Demand Setback

This field shows the number of degrees the setpoint is to be adjusted to reduce energy consumption during a peak demand period. The field's data also indicates if and how much demand control is changing the control setpoint.

Cool Anticipator, Heat Anticipator

These fields automatically show the calculated values that improve the control and response of the ETM and HVAC equipment.

Active Stages

This field lists the heating, cooling, and damper stages that are currently on.

A *Zero Band* message indicates that the zone temperature is within the comfort range (neither heating nor cooling is required).

Fan Status

This field shows the status of the fan output as on, off, or auto.

Damper Position

This field shows the position of the damper output as open or closed.

Schedule Mode

This field shows the ETM's current schedule status (on or off). The status can be changed by any of the following items:

- Time-of-day schedule
 - Optimized start/stop
 - Timed override
 - Other schedule events
-

On Mode Activated By

This field shows whether the on condition was activated by the ETM's schedule or by a timed override.

Override Remaining

This field shows the number of minutes remaining in an activated timed override period.

OSA Temp

This field shows the current outside air temperature received from the executive module.

ETM Alarms and Faults

When an alarm or fault occurs, one of the following messages is displayed in the lower section of the screen.

MESSAGE	EXPLANATION
Confirmed Status Fault (does not apply to all models)	The heating or cooling is in active mode, but the status confirmation input detects that the activated output is not on. There is a fixed 1-minute time delay on these inputs.
Dirty Filter Alarm	The air filter switch detects a dirty or clogged filter.
Emergency Status	The unit's operation is forced off due to a system-wide emergency condition. The following items are examples of such conditions: <ul style="list-style-type: none">■ Site emergency■ Phase loss■ Monitoring alarm point defined in the software
Temperature Drift Limit Alarm	The zone temperature (heating or cooling) is 3 degrees beyond the setpoint and is not approaching the setpoint at a rate faster than 0.5 degrees per 10-minute interval.
Zone Temperature Sensor Fault	The ETM's self-test routine indicates that the space sensor has failed (opened or shorted).
Air Flow Alarm	The fan output is active but the ETM's airflow input, which is always active, does not detect airflow. All outputs are forced off when this alarm occurs.
Mod Comm Loss Fault	The ETM is not communicating with the executive module.

The message is displayed until the fault condition clears.

The following table explains the options available to the user when an alarm message appears.

FUNCTION	EXPLANATION
Acknowledge an Alarm	Typing the letter A at the prompt acknowledges an alarm. The system logs the time, date, and user who acknowledged the alarm at the executive module. It does not clear the alarm.
Reset an Airflow Alarm	(Airflow alarm only) Typing an R at the prompt resets the airflow alarm. The reset takes about 1 minute.
Inhibit an Alarm	Typing an I at the prompt inhibits or keeps the alarm from being displayed at the executive module.

NOTE! It is not necessary to press **enter** after pressing the alarm function keys.

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