

NCH-1000 (Multiple Breaker Types) Programming Instructions

Purpose

NOTE! These instructions are intended for NCH-1000 model that controls the following breaker types:

- 3-Wire GHBS
 - 4-Wire BABR, BRR, and CLR
 - 4-Wire with Status BABRS and GHQR
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These instructions explain how to program control groups for the NCH-1000 lighting controller. They are intended for those who have previous experience programming a Logic One[®] Energy Infosystem.

Refer to Novar's *ESS32 Programming Manual* (Doc. No. TD-0700, available in the Documents folder on the Novar Software Package CD) for additional information about creating loads and setting parameters. Refer to Novar's *NCH-1000 (Multiple Breaker Types) Installation Instructions* (Doc. No. 560502100) for installation information.

Creating the Load

Use the following procedure to create the necessary loads for the NCH-1000.

Step	Procedure
1	Access the ESS32 Load Directory screen.
2	Create a load for the first NCH-1000 control group. <ul style="list-style-type: none"> ■ Choose NCH Breaker Controller at the "Load Type" prompt. ■ Assign the load to an existing NCH-1000 module address or select a new address to create a new module. ■ Assign the load to one of the control groups (loads) available on the NCH-1000. After the first load has been created, the system returns to the Load Directory and prompts the user to perform Step 3.
3	Follow the prompts to create an NCH Breaker Status load. <ul style="list-style-type: none"> ■ Program the appropriate parameters for this load to match the number and types of circuit breakers on the panel board. <hr/> <p>NOTE! This step only needs to be completed once, after the first NCH Breaker Controller load is created. This load will store status information for all of the circuit breakers in the NCH-1000 control groups (loads).</p> <hr/> <p style="text-align: right;"><i>continued</i></p>

Step	Procedure
4	Repeat Step 2 until a load has been created for each control group (to a maximum of eight per NCH-1000 module).
5	Enter the control settings for each load that has been created and adjust the parameters. <ul style="list-style-type: none">■ The following pages explain the control settings for both the Control Groups Loads and the Status Monitoring Load.

Setting Load Parameters for Control Groups

The load parameters listed below are set or adjusted in the Control Settings/Parameters screen. Use the following procedure to access the screen.

Step	Procedure
1	Select one of the NCH-1000 loads from the Load Directory screen and press enter .
2	Select option 1 (Modify/Display) and press enter to access the Load Menu screen.
3	Select option 1 (Control Settings & Parameters) and press enter to access the General Control Settings/Parameters screen.

Program Operating Mode

The options for this parameter include:

- **Standby**—If placed in standby, the load will remain off.
 - **Run**—This option activates the load.
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Confirmation Retries

This parameter is used to specify the number of ADDITIONAL times the NCH is to attempt to switch a load on or off if it does not get proper confirmation feedback. After the specified number of retries has been completed, an alarm will be generated. If the parameter is set to zero, no alarm will be generated.

NOTE! Setting the number of retries to an even number would leave the breakers in a state different from their original state if the confirming feedback should fail.

Minimum On Time

This parameter is used to specify the minimum amount of time (in minutes or seconds), up to 127 minutes, that the load must stay on before it is allowed to turn off again.

NOTE! This setting can be preempted by an emergency or a phase loss.

Minimum Off Time

This parameter is used to specify the minimum amount of time (in minutes or seconds), up to 127 minutes, that the load must stay off before it is allowed to turn on again.

Demand Control

The options for this parameter include:

- **Active**—Selecting this option opens the Shed Register screen where the user can select the register and shed step number and enter the maximum off and minimum on times. Selecting this option allows the load to be turned off during a high kW load condition.
- **Inactive**—This option deactivates demand control.

In stand-alone operation, this parameter is forced to the inactive mode.

Outdoor Light Limit

The word “limit” generally refers to turning the load off or limiting the load’s operation. The light limit is based on parameters set for the global outdoor light sensor connected to the executive module. The options include:

- **Active**—This option disables the load when the outdoor light sensor indicates it is light outside and enables the load when the sensor indicates it is dark outside.
- **Inactive**—This option deactivates the outdoor light limit.

In stand-alone mode, this parameter is forced to the inactive mode.

Phase Loss

The options for this parameter include:

- **Active**—The load shuts down if the executive module detects a utility phase loss signal.
- **Inactive**—This option deactivates the phase loss parameter.

In stand-alone mode, this parameter maintains the last state communicated to it until the next power failure.

Site Emergency

The options for this parameter include:

- **Active**—This load will respond when the executive module’s site emergency terminals detect a closed contact or when the site emergency parameter for a monitoring alarm is set to active.

When this option is selected, the cursor automatically moves to the Site/Network Emergency Load State parameter and prompts the user to select the **on** or **off** option.

- **Inactive**—This option deactivates the site emergency parameter.

In stand-alone mode, this parameter maintains the last state communicated to it until the next power failure.

Network Emergency

A “network emergency” is an emergency created by a monitoring alarm. This parameter can only be activated on this screen when it is assigned as a function of a monitoring alarm. The options include:

- **Active**—The load is assigned to respond to a monitoring alarm.
 - **Inactive**—The load is deactivated (not assigned to respond to a monitoring alarm).
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Site/Network Emergency Load State

This parameter cannot be modified unless the site emergency parameter or the system is active. The options include:

- **On**—The load is forced on during a site or network emergency.
 - **Off**—The load is forced off during a site or network emergency.
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Timed Override

This parameter sets the period of time that the main schedule is overridden from scheduled off to scheduled on. The number of hours and minutes that the override is to stay in effect must be entered in the fields provided. The override stays in effect for the time specified or until the next scheduled on time.

The override expansion option does not have to be present to enable this feature. If it is present, the press of a pushbutton causes the light to turn from off (where scheduled off) to flashing for the duration of the override period. A light that is on solid indicates that the schedule is on and no pushbutton action is accepted.

This action can also be initiated by an operator using an EP/2, Savvy[®], Lingo[®], or Presto[™] or via ESS32 or iScope[®].

Schedule Extension

The options for this parameter include:

- **Active**—If this option is selected, the user is prompted to select **minutes** or **seconds** and to enter a time span (up to 120 minutes in one-minute intervals).

At the end of the load's scheduled on period, the breakers flash off for their minimum off time as a warning to building occupants that night setback is about to occur. The time span that the user enters is the time period between the flash and when the night setback goes into effect. If the minimum off time is set to "none," the breakers will not flash off before the schedule extension is initiated.

If the time interval is an odd number, the extension is also applied to the end of a timed override. If the interval is an even number, it is only applied to the end of scheduled on times. This time extension does not add to the monthly override times.

During a schedule extension, the override light is off (not flashing). If the pushbutton is pressed at this time, a timed override will start.

- **Inactive**—The schedule extension parameter is deactivated.

Network Sequence

The options for this parameter include:

- **Active**—This option prompts the user to identify system loads to which this load is to be sequenced and to identify the sequence parameters (select any/all, depending on their on/off state).
- **Inactive**—The load is not sequenced to any other loads in the system.

Com Loss Mode

The network sequence parameter must be active for this parameter to be modified. The options include:

- **Active**—If a communication loss occurs between this module and the executive module, the load assumes that network sequencing parameters are *not* satisfied.
- **Inactive**—If a communication loss occurs between this module and the executive module, the load assumes that network sequencing parameters *are* satisfied; it can go into stand-alone operation.

Control Outputs

This parameter allows the user to select the circuit breakers to be included in the control group. Once they are selected, they will be highlighted.

Firing Delay Time

This parameter allows the user to select the time delay (in 1/4-second increments) that is to occur between the switching of each circuit breaker that is in the control group.

Presence Alarm

The options for this parameter include:

- **Active**—An alarm will be generated if a circuit breaker is not detected.
 - **Inactive**—No alarm will be generated if a circuit breaker is not detected.
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Auto-Restore Delay

This parameter is used to set the time delay that is to occur before the load is restored to automatic operation.

If a circuit breaker has been overridden to the on position, this parameter establishes the time delay that is to occur before it is restored to automatic operation (off).

NOTE! If a breaker has been manually overridden to off, it will not be turned on.

Alarm on Confirmation Fault

This parameter is used to indicate if an alarm is to be initiated on confirmation faults. The options include:

- **Yes**—An alarm will be generated if a confirmation fault occurs.
 - **No**—No alarm will be generated if a confirmation fault occurs.
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Setting Load Parameters for the Status Monitoring Load

Use the following procedure to set the load parameters for the Status Monitoring Load.

Step	Procedure
1	Define the maximum number of circuit breakers in the Cutler Hammer panel (minimum = 6; maximum = 48). <ul style="list-style-type: none">■ The software automatically adjusts the number to match one of the acceptable configurations for the Cutler-Hammer panels.■ This number should match the jumper that is on the header block that is located underneath the NCH-1000 circuit board.
2	Set the parameter for Alarm on Uncontrolled Breakers to Active if an alarm is to be received when one of the uncontrolled breakers is switched to off. <p style="text-align: right;"><i>continued</i></p>

Step	Procedure								
3	<p>Complete the following steps to identify the circuit breakers that fall into each of the categories below:</p> <ul style="list-style-type: none"> ■ Open the Status Monitoring Load's parameter settings screen. ■ Select Breaker Setup to configure the breaker assignment (see below). ■ Use the cursor arrow keys to move the cursor to each number that represents a circuit breaker in each category. ■ Press the space bar on each of those numbers to identify it as a circuit breaker. Press enter or Esc to move to the next category. <p>Breaker Assignments:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%; text-align: center;">ASSIGNMENT</th> <th style="text-align: center;">EXPLANATION</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">Uncontrolled</td> <td>The circuit breaker is monitored but not controlled. Its status can be viewed on the monitoring screen.</td> </tr> <tr> <td style="text-align: center;">Multipole</td> <td> <p>If a double (high-voltage) or triple (three-phase) breaker exists, the NCH status load monitoring screen will indicate the status for the first location only.</p> <p>For example, if a double pole (lowest breaker number) occupies locations 2 and 4, the status for location 2 will be the only one reported.</p> </td> </tr> <tr> <td style="text-align: center;">Spare</td> <td>The circuit breakers exist in the panel but are not controlled or monitored.</td> </tr> </tbody> </table>	ASSIGNMENT	EXPLANATION	Uncontrolled	The circuit breaker is monitored but not controlled. Its status can be viewed on the monitoring screen.	Multipole	<p>If a double (high-voltage) or triple (three-phase) breaker exists, the NCH status load monitoring screen will indicate the status for the first location only.</p> <p>For example, if a double pole (lowest breaker number) occupies locations 2 and 4, the status for location 2 will be the only one reported.</p>	Spare	The circuit breakers exist in the panel but are not controlled or monitored.
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4	<p>Complete the following steps to identify the breaker types:</p> <ul style="list-style-type: none"> ■ Press tab to view the breaker types. ■ Press 5 to select the breaker types option and press enter. ■ Use the cursor arrow keys to move the cursor to each number that represents a breaker. ■ Press the spacebar to scroll through the breaker types, and press enter or Esc to move to the next category. <hr style="border: 1px solid black; margin-top: 10px;"/> <p>NOTE! The breaker type defaults to GHBS.</p> <hr style="border: 1px solid black; margin-top: 10px;"/>								

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