Lumina Pro Version 3.0 Firmware Release

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Description

The Lumina Pro Version 3.0 firmware adds the following new features:

- OmniTouch menu operation support for the NuVo Grand Concerto and Essentia G audio systems
- OmniTouch support for Russound E-Series (Sphere) audio systems
- UPB Transmit Count to increase reliability on a large UPB network
- Third-Party Protocol Enhancements
- Support for HAI Access Control
- User Settings
- Enhanced Programming
- Real-Time operation status of thermostats
- Support for Omnistat2 Thermostats
- OmniTouch support for real-time cool/heat/humidify/dehumidify status

Note: Loading new screens into each OmniTouch touchscreen may be necessary to support new features in Version 3.0 Firmware. Ensure that each OmniTouch is running "Screens Version "9". To check, press the "Setup" icon from the Home page. Next press the "Screen Setup" icon, followed by the "Next" button. The "Screens Version" should be displayed on the bottom left of the display. If the "Screens Version" is lower than "9" or if the text "Screens Version" is not displayed, the screens must be updated.

The Lumina Pro Version 2.16 firmware adds the following new features:

- Omni-Link II Protocol
- TCP Network connections

*The Lumina Pro Version 2.15 firmware adds the following new features:

- Support for DSC Power Series security system integration
- Program command to blink UPB devices
- Program command set the light level of a lighting unit for a specified time
- Program command to allow temperatures to be adjusted up or down by a specified number of degrees
- Ability to display a message without the beeping or without beeping or flashing the LED
- Program command to beep consoles and touchscreens
- Program command to enable or disable the beeper on a console or touchscreen
- Ability to enable or disable console beeper locally at the console
- Support for the CentraLite StarLite lighting system
- OmniTouch and programming support for the NuVo Grand Concerto, Essentia, and Simplese audio systems
- OmniTouch and programming support for the Xantech MRC-88 audio system
- OmniTouch and programming support for the Speakercraft MZC audio system
- OmniTouch and programming support for the Proficient M4 and M6 audio systems

*See www.homeauto.com for comprehensive list of firmware updates and descriptions.

NuVo Grand Concerto and Essentia G Audio Systems

The OmniTouch menu operation support for the NuVo Grand Concerto and Essentia G audio systems include:

(a) Emulation of functionality on NuVo display pads
(b) Browsing of music by artist, album, track, genre, playlists, and favorites
(c) Display of complete metadata from NuVonet sources
(d) Control of zone, source, and system settings
(e) Control through automation logic

Russound E-Series (Sphere) Audio Systems

The OmniTouch support for Russound E-Series (Sphere) audio systems include:

(a) Emulation of Russound Uno S2 keypad
(b) Limited music selection via favorites, presets, and transport controls
(c) Display of metadata feedback from R-Net sources
(d) Control of zone power, source, volume, and source transport controls
(e) Control through automation logic

Configuring Serial Communications for NuVo Grand Concerto, NuVo Essentia G, Russound E-Series (Sphere), and HAI Access Control

When connecting the NuVo Grand Concerto or Essentia G audio system, Russound E-Series (Sphere) audio system, or HAI Access Control Readers to a serial interface on the Lumina Pro controller, the serial interface must be configured to the respective protocol.

Serial Module Setup

When connecting HAI Access Control Readers to the HAI Model 10A17 Serial Interface Module, the "Module Type" must configured as follows:

From the Installer Setup menu, select the 7 (EXP) key.

The Module Type defines the function of each expansion module on the controller. Module 1 is the module with the ADDR jumper set to 1. Set the module type from the list below. Press ' # ' to change the module type, then use the arrow keys to select the proper module type, then press ' # ' to enter:

```
MODULE 1 TYPE           3
OMNI-LINK       #=CHNG ↓
```

- For HAI Access Control communications: set the Serial Interface Module to "18" (ACCESS CONTROL)

For example, when configuring the module to Access Control and if the jumper on the Serial Interface Module is set to 1, set "Module 1" Type to "18" (ACCESS CONTROL). The Serial Interface Module is now set to use the HAI Access Control Protocol.

MODULE TYPES	NUMBER	DESCRIPTION
NOT USED	0	No module is installed
HARDWIRE EXPNDR	1	Model 10A06 Hardwire Expander installed
ALC	2	ALC Interface Module is installed
OMNI-LINK	3	Model 10A17 Serial Interface using the Omni-Link protocol
PRO-LINK	4	Model 10A17 Serial Interface using the Pro-Link protocol
UPB	5	Model 10A17 Serial Interface using the UPB protocol
RADIO RA	6	Model 10A17 Serial Interface using the RadioRA protocol
NUVO CONCERTO	7	Model 10A17 Serial Interface using the NuVo Concerto protocol
CENTRALITE	9	Model 10A17 Serial Interface using the CentraLite protocol
VIZIA RF Z-WAVE	10	Model 10A17 Serial Interface using the Z-Wave protocol
HAI HI-FI	11	Model 10A17 Serial Interface using the HAI Hi-Fi protocol
NUVO ESSENTIA/SIMPLESE	13	Model 10A17 Serial Interface using the NuVo Essentia/Simplese protocol
XANTECH	14	Model 10A17 Serial Interface using the Xantech protocol
DSC SECURITY	17	Model 10A17 Serial Interface using the DCS Protocol
ACCESS CONTROL	18	Model 10A17 Serial Interface using the HAI Access Control protocol

Note: The NuVo Grand Concerto, Speakercraft, or Proficient audio system can not be connected to the HAI Model 10A17 Serial Interface Module. It must be connected to the second through fifth built-in serial port (J2-J5 Serial) on the Lumina Pro controller.

Serial Function Setup

When connecting the Russound E-Series audio system or HAI Access Control Readers to one of the built-in serial ports (J1-J5 Serial) or when connecting the NuVo Grand Concerto or Essentia G audio system to (J2-J5 Serial) on the Lumina Pro, the "Serial Function" selects the communication protocol that is used.

FUNCTION TYPES	NUMBER	DESCRIPTION
OMNI-LINK	3	Serial communication using the Omni-Link protocol
PRO-LINK	4	Serial communication using the Pro-Link protocol
UPB	5	Serial communication using the UPB protocol
RADIO RA	6	Serial communication using the RadioRA protocol
NUVO CONCERTO	7	Serial communication using the NuVo Concerto protocol
RUSSOUND	8	Serial communication using the Russound protocol
CENTRALITE	9	Serial communication using the CentraLite protocol
VIZIA RF Z-WAVE	10	Serial communication using the Z-Wave protocol
HAI HI-FI	11	Serial communication using the HAI Hi-Fi protocol
NUVO GC/ESSEN G	12	Serial communication using the NuVo Grand Concerto or Essentia G protocol
NUVO ESSEN/SIMP	13	Serial communication using the NuVo Essentia/Simplese protocol
XANTECH	14	Serial communication using the Xantech protocol
SPEAKERCRAFT	15	Serial communication using the Speakercraft protocol
PROFICIENT	16	Serial communication using the Proficient protocol
DSC SECURITY	17	Serial communication using the DSC protocol
ACCESS CONTROL	18	Serial communication using the HAI Access Control protocol
RUSSOUND E-SER	19	Serial communication using the Russound E-Series (Sphere) protocol

- For NuVo Grand Concerto or Essentia G communications: set the Serial Function to “12” (NUVO GC/ESSEN G)
- For HAI Access Control communications: set the Serial Function to “18” (ACCESS CONTROL)
- For Russound E-Series (Sphere) communications: set the Serial Function to “19” (RUSSOUND E-SER)

Serial 1 Function

Select the function for the built-in serial interface from the list. Use the arrow keys to select the function then press the ' # ' key.

Serial 2 - Serial 5 Function

The "Serial 2 Function" through "Serial 5 Function" selects the communication protocol used for the built-in serial interface ports (J2 Serial – J5 Serial, respectively) on the Lumina Pro controller. Select the function for the built-in serial interface from the list.

Notes:

1. Lumina Pro only supports communications with one audio distribution system: HAI Hi-Fi, NuVo, Russound, Xantech, Speakercraft, or Proficient. Do not configure more than one audio protocol.

2. The NuVo Grand Concerto, NuVo Essentia G, Speakercraft, or Proficient audio systems can not be connected to the first built-in serial port (J1 Serial) on the Lumina Pro controller. It must be connected to the second or third built-in serial port (J2-J3 Serial).

3. When connecting the NuVo Grand Concerto or Essentia G audio system, the second built-in serial port (J2 Serial) is recommended.

4. When connecting the NuVo Grand Concerto or Essentia G audio system, an RS-232 Line Booster or Optical Isolator must be used (see HAI Knowledge Base article http://kb.homeauto.com/default.asp?id=849&SID=&Lang=1).

5. When connecting the Speakercraft audio system, the RSA 1.0 MZC Control Interface Module must be used.

6. When connecting the Proficient audio system, the Proficient Control Module (PCM) must be used.

UPB Transmit Count

The UPB Transmit Count is used to specify the number of UPB transmission attempts when UPB signals are sent from the Lumina Pro controller. The controller will also configure HAI UPB devices with this same number of attempts; hence, other UPB devices on the network will also transmit using the specified number of transmission attempts.

To change the UPB Transmit Count, from the Installer Setup menu, select the 1 (CTRL) key.

```
UPB TRANSMIT COUNT:     2
2-4                     ↕
```

This setting is particularly useful in large installations where a Split Phase Repeater is connected on the UPB network.

Note: A higher setting will increase UPB reliability (particularly when a Split Phase Repeater is connected); however, may reduce performance (i.e. because of the additional UPB transmissions, it may reduce the speed in which devices are controlled).

Third-Party Protocol Enhancements

Numerous enhancements have been made to the Omni-Link and Omni-Link II protocols to increase functionality and ease third-party integration with Lumina controllers. Omni-Link II provides for secure non-polling communication over IP networks. To access the protocols, please join our Developer Support Program at http://www.homeauto.com/Support/Developers/Developers.asp.

HAI Access Control

HAI Access Control allows you to access doors by opening an electric or magnetic lock, changing Lumina mode, and achieve many home automation functions such as controlling lighting, energy management, surveillance, and audio. The Access Control Reader is a 125 KHz high security, digitally encrypted, 26-bit proximity card reader. It has durable and scratch resistant polycarbonate housing and full epoxy potting which ensures successful operation even in harsh environments.

Users can utilize either a standard credit card sized Access Control Card or the convenient Access Control Key Tag to access the system. Each card is attached to a user code in the controller which can be managed with several privileges. Users can be granted privileges based on time of day and day of week as well as any other desired events.

The HAI Access Control Card Reader can be used for:

- Validating HAI Access Control Cards or Key Tags
- Logging of Users assigned to Access Control Cards or Key Tags
- Activating an Electric or Magnetic Lock
- Changing Lumina Mode (Home/Away)
- Activating Automation Programs

Validating HAI Access Control Cards and Key Tags

In its normal state (i.e. the lock output is in the locked state), a single LED indicator at the bottom of the Access Control Card Reader is illuminated red. When an Access Control Card or Key Tag is presented at an Access Control Card Reader:

<u>If a valid card or key tag is presented:</u>

When a valid card or key tag is presented at the reader, the Access Control Card Reader will beep once and all 9 LED indicators will illuminate the color of the current Lumina Mode.

- LED indicators illuminate red: The Lumina Mode is currently set to Away or Vacation
- LED indicators illuminate green: The Lumina Mode is currently set to Home, Sleep, Party, or Special

Note: The LED indicators will remain illuminated until the "Door Unlock" time expires. The "Door Unlock" time is the amount of time configured for the door to remain unlocked when a valid card or key tag is presented at an Access Control Reader.

<u>If an invalid card or key tag is presented:</u>

If an invalid card is presented, the Access Control Card Reader will not beep or change the color or pattern of the LED indicators.

Logging of the User assigned to the Access Control Card or Key Tag

When a card or key tag is presented at the reader and if the card that was presented is configured to log activity, the HAI controller will log that the user presented their card at the respective Access Control Card Reader. The HAI controller will log:

- The Access Control Card Reader where the card was presented
- The User that presented the card
- If the card was accepted or declined
- The time and date in which the card was presented

Activating an Electric or Magnetic Lock

The HAI Access Control Card Reader has an output for an electric or magnetic door lock. When a valid card or key tag is presented at the reader, all 9 LED indicators will illuminate indicating that the door is currently unlocked (the color of the LED indicators signifies the current Lumina Mode). The LED indicators will stay illuminated while the lock is unlocked. The lock will remain unlocked until the "Door Unlock" time expires. The "Door Unlock" time is configured in the setup of the reader.

Note: When a valid card or key tag is presented at the reader, all 9 LED indicators will illuminate and remain illuminated until the "Door Unlock" time expires, even if there is not a physical lock connected to the reader.

Changing Lumina Mode

When a valid card or key tag (a card or key tag that is valid for the current time of day and day of week, that is assigned for the respective reader, and that has privileges to change Lumina Mode for the respective reader) is presented at the reader 3 times, each presentation within 5 seconds of the previous presentation of the card, the Lumina Mode will change to:

(a) Away mode if the current Lumina Mode is set to Home, Sleep, Party, or Special , OR
(b) Home mode if the current Lumina Mode is set to Away or Vacation

When a valid card is first presented, the Access Control Card Reader will produce a single short beep and all 9 LED indicators will illuminate the color of the current Lumina Mode (Home/Away). If the card is presented 2 more times within 5 seconds of the previous presentation of the card, the Access Control Reader will produce a single long beep and the Lumina Mode will toggle between Home mode and Away mode. Whenever the Lumina Mode changes, the color of the 9 LED indicators will also change to indicate the new mode: Red to indicate Away or Green to indicate Home.

Activating Automation Programs

Automation programs can be activated when a card is presented at an Access Control Card Reader. Programs can be activated when a card is presented at a reader by any user or by a specific user and can be executed if the card was accepted or declined. For example, swiping a card can change Lumina Mode, release the door lock, light a pathway into the house, change the temperature, and turn on several zones of a whole home audio system, and select their volume and source.

Reader Setup

Each Access Control Reader can easily be enrolled and configured using a Lumina console or PC Access software. Access Control Readers are configured and enrolled under ***Setup | Installer | Expansion***.

Enrolling Access Control Readers

When enrolling an Access Control Reader, the following configuration items are part of the enrollment process:

- Link assignment (link to another Access Control Reader)
- Unlock Time
- Exit Time
- Lock Type
- Beeper (enable or disable)
- Changing Lumina Mode

Note: These items should be configured prior to enrolling the Access Control Reader.

To enroll Access Control Readers, from the Installer Setup menu, press the 7 (EXP) key. Use the down arrow key to scroll to the "Reader Address" menu item.

```
READER 1 ADDRESS:
0.0.0.0          #=CFG ↕
```

Press the ' # ' (#=CFG) key to put the system into configuration mode. The display will show:

```
CONFIGURE READER 1
SWIPE CARD 3 TIMES
```

Go to the Access Control Reader to be enrolled and swipe any HAI Access Control Card or Key Tag 3 times in front of the reader:

```
READER 1 ADDRESS:
8.5.0.137        #=DEL ↕
```

Note: you have 3 minutes to complete the operation once the system is put into configuration mode. If an HAI Access Control Card or Key Tag has not been swiped 3 times within the first 3 minutes, the controller will automatically exit configuration mode.

Deleting Access Control Readers

To delete an Access Control Reader that is enrolled in the system, scroll down to the particular "Reader Address" menu item, and then press the ' # ' (#=DEL) key.

```
READER 1 ADDRESS:
8.5.0.137        #=DEL ↕
```

You will first be prompted to confirm deletion:

```
DELETE READER 1?
0=NO  1=YES
```

Deleting an Access Control Reader will take it out of the system and it will not be valid any longer.

Link Assignment

A Link Assignment is used when two Access Control Readers are used to control access to the same door (i.e. one reader on the inside and the other on the outside of the restricted door). This is useful when an Access Control Card or Key Tag is required to enter or exit through a restricted door.

Since the door lock is physically connected to a single Access Control Reader, the Link Assignment links the selected Access Control Reader with a second Access Control Reader so that when a valid Access Control Card or Key Tag is presented at either Access Control Reader, the door is unlocked. Furthermore, the controller will log which Access Control Reader was used to access the door (i.e. whether the user was entering or exiting the door).

```
READER 1 LINKED TO:    0
0-16                   ↕
```

Enter the reader number of the Access Control Reader that will be linked to the selected reader, followed by the ' # ' key.

Notes:

- Only two Access Control Readers can be linked together.
- When a valid Access Control Card of Key Tag is presented at either linked Access Control Reader, the 9 LED indicators on both linked Access Control Readers will illuminate the color of the current Lumina Mode and will remain illuminated while the door is unlocked.

Unlock Time

The Unlock Time is the amount of time that the door remains unlocked when a valid Access Control Card or Key Tag is presented at the Access Control Reader. The Unlock Time can be between 1-60 seconds and is individually configured for each reader.

Note: When the door is unlocked due to a valid Access Control Card or Key Tag is presented, all 9 LED indicators will illuminate the color of the current Lumina Mode and will remain illuminated while the door is unlocked.

```
READER 1 UNLK TIME:     5
1-60 SECONDS            ↕
```

Enter the Unlock Time (1-60 seconds) for the selected Access Control Reader, followed by the ' # ' key. The default time is 5 seconds.

Exit Time

The Exit Time is the amount of time that the door remains unlocked when the "Request to Exit" input is tripped. An optional device, such as a "Request to Exit" button which is mounted on the inside of the restricted door, is used to unlock the door without requiring a second Access Control Reader. The Exit Time can be between 1-60 seconds and is individually configured for each reader.

Note: When the door is unlocked due to pressing a "Request to Exit" button, none of the LED indicators will illuminate.

```
READER 1 EXIT TIME:     5
1-60 SECONDS            ↕
```

Enter the Exit Time (1-60 seconds) for the selected Access Control Reader, followed by the ' # ' key. The default time is 5 seconds.

Lock Type

The Lock Type specifies the type of door lock that is connected to the selected Access Control Reader. The Lock Type can be either be configured for a "Fail Secure" device (door is locked when power fails) or "Fail Safe" mode (door is unlocked when power fails).

```
READER 1 LOCK TYPE:     0
0=SECURE  1=SAFE        ↕
```

Select 0 (Secure) when connecting a "Fail Secure" lock or select 1 (Safe) when connecting a "Fail Safe" lock, followed by the ' # ' key. The default setting is "Fail Secure".

Reader Beeper

The Reader Beeper setting is used to enable and disable the beeper in the selected Access Control Reader. When the beeper is set to "Yes", every time a valid Access Control Card or Key Tag is presented at the reader, the beeper will produce a single short beep. If the reader is used to change Lumina Mode, the beeper will produce a single long beep.

When the beeper is set to “No”, the reader will not beep when a valid Access Control Card or Key Tag is presented at the reader or when the reader is used to change Lumina Mode.

```
READER 1 BEEPER:        1
0=NO   1=YES            ↕
```

To disable the beeper, select 0 (No) followed by the ' # ' key. To enable the beeper, select 1 (Yes) followed by the ' # ' key. The default setting for the beeper is enabled (Yes).

Reader Home/Away

The Reader Home/Away setting is used to enable or disable the reader for changing Lumina Mode when a valid Access Control Card or Key Tag is presented at the selected Access Control Reader 3 times, each presentation within 5 seconds of the previous presentation of the card.

When Home/Away is set to “Yes”, and a valid Access Control Card or Key Tag is presented at the reader 3 times, each presentation within 5 seconds of the previous presentation of the card, the Access Control Reader will produce a single long beep and the Lumina Mode will change to:

(a) Away mode if the current Lumina Mode is set to Home, Sleep, Party, or Special , OR
(b) Home mode if the current Lumina Mode is set to Away or Vacation

When Home/Away is set to “No”, the selected Access Control Reader can not be used to change Lumina mode.

```
READER 1 HOME/AWAY:     1
0=NO   1=YES            ↕
```

To disable changing Lumina Mode from the selected reader, select 0 (No) followed by the ' # ' key. To enable changing Lumina Mode at the selected reader, select 1 (Yes) followed by the ' # ' key. The default setting for Reader Home/Away is enabled (Yes).

User Setup

Each Access Control Card and Key Tag used is assigned to a code in the Lumina controller. The Access Control Card or Key Tag is governed by the validation times/days set for the code (i.e. the Access Control Card or Key Tag is only valid when the code is valid).

Note: An Access Control Card or Key Tag may be assigned to a code even if the code is disabled (i.e. the user code is set to 0000). Even if the code is disabled, the Access Control Card or Key Tag may be used if it is currently valid.

Each Access Control Card and Key Tag can be:

- Enrolled
- Deleted
- Enabled and disabled
- Assigned to specific Access Control Readers
- Configured to log activity
- Configured for Lumina Mode change privileges

Access Control Cards and Key Tags can easily be enrolled and configured using a Lumina console or PC Access software. Access Control Cards and Key Tags are enrolled and configured under ***Setup | Codes***.

Enrolling Access Control Cards or Key Tags

To enroll Access Control Cards or Key Tags, from the Setup menu, press the 1 (CODES) key. Use the down arrow key to scroll to the "Card Number" menu item. Access Control Cards or Key Tags can be enrolled into the system using one of the following methods:

Method A) Typing in the ID Number of the Access Control Card or Key Tag:

a. Enter the last 8 digits of the Access Control Card or Key Tag and then press the ' # ' key.

```
CARD 1 NUMBER:
000 00000         #=CFG ↕

CARD 1 NUMBER:
095 13564         #=DEL ↕
```

Method B) Enter configuration mode and then swipe the card 3 times at any Access Control Reader configured in the system:

a. Press the ' # ' (#=CFG) key to put the system into configuration mode. The display will show:

```
CONFIGURE CARD 1
SWIPE CARD 3 TIMES
```

b. Go to any Access Control Reader configured in the system, and swipe the Access Control Card or Key Tag 3 times in front of the reader:

```
CARD 1 NUMBER:
095 13564         #=DEL ↕
```

Note: you have 3 minutes to complete the operation once the system is put into configuration mode. If an HAI Access Control Card or Key Tag has not been swiped 3 times within the first 3 minutes, the controller will automatically exit configuration mode.

Deleting Access Control Cards or Key Tags

To delete an Access Control Card or Key Tag that is enrolled in the system, scroll down to the particular "Card Number" menu item, and then press the ' # ' (#=DEL) key.

```
CARD 1 NUMBER:
095 13564         #=DEL ↕
```

You will first be prompted to confirm deletion:

```
DELETE CARD 1?
0=NO  1=YES
```

Deleting an Access Control Card or Key Tag will take it out of the system and it will not be valid any longer. You may choose to delete a card if it has been lost, stolen, or not retuned.

Enabling and Disabling Access Control Cards or Key Tags

When an Access Control Card or Key Tag is enrolled into the system, by default it is enabled. This means that the Access Control Card or Key Tag may be used if it is valid for the current time of day and day of week.

The Access Control Card or Key Tag may be temporarily disabled so that it can not be used at any Access Control Reader. An Access Control Card or Key Tag may be temporarily disabled if it was misplaced.

```
CARD 1 ENABLED:          1
0=NO  1=YES              ↕
```

Select 0 (NO) to disable the selected Access Card or Key Tag. Select 1 (YES) to enable the selected Access Card or Key Tag.

Assign Access Control Cards and Key Tags to Specific Access Control Readers

Each Access Control Card or Key Tag can be assigned to 1 or more Access Control Readers. When an Access Control Card or Key Tag is assigned to specific readers, the user only has access at the assigned readers.

Users do not have access to any reader in which their Access Control Card or Key Tag is not assigned. If a user presents their Access Control Card or Key Tag at a reader in which their Access Control Card or Key Tag is not assigned, the reader does not give any indication that a card was presented and a card "declined" event is generated in the system event log.

```
CARD 1 READERS:
1234567890123456 0=CLR ↕
```

By default, each configured Access Control Card or Key Tag is valid at all 16 readers. Each valid Access Control Reader is represented by a single digit number. Starting at the left, 1-9 are Access Control Readers 1-9 respectively, 0 is Access Control Reader 10, and 1-6 (that appear after 0) are Access Control Readers 11-16 respectively.

To add or remove an Access Control Reader from the list of valid readers, enter the reader number followed by the ' # ' key. Note: for Access Control Readers 10-16, enter the two-digit reader number followed by the ' # ' key.

If the selected Access Control Card or Key Tag is to be valid at only a few Access Control Readers, you may first clear all Access Control Readers from the list. To clear all Access Control Readers from the list, enter 0 followed by the ' # ' key. You may then add the Access Control Readers that are to be valid.

```
CARD 1 READERS:
1-345---------- 0=CLR ↕
```

When all of the valid Access Control Readers have been entered, press the ' # ' key to store the new settings in memory.

Log Access Control Card and Key Tag Activity

Each Access Control Card or Key Tag that is enrolled in the system can be configured to log activity whenever the card is presented at a reader, even if the user was denied access. When enabled, the system will log the Access Control Card Reader where the card was presented, the user that presented the card, if the card was accepted or declined, and the time and date in which the card was presented. Each time a card is presented, as long as there is a 5 second delay between each swipe, an event is generated in the system event log.

```
CARD 1 LOGGING:          1
0=NO  1=YES              ↕
```

Select 0 (NO) to disable logging for the selected user. Select 1 (YES) to enable logging for the selected user.

Configuring Access Control Cards to Change Lumina Mode

Each Access Control Card or Key Tag may be configured to allow the user to change the Lumina Mode at Access Control Readers that are configured for changing Lumina Mode.

```
CARD 1 HOME/AWAY:       1
0=NO  1=YES             ↕
```

When a valid card is first presented, the Access Control Card Reader will beep once and all 9 LED indicators will illuminate the color of the current Lumina Mode.

- LED indicators illuminate red: The Lumina Mode is currently set to Away or Vacation
- LED indicators illuminate green: The Lumina Mode is currently set to Home, Sleep, Party, or Special

When the Lumina Mode is Home, swiping the Access Control Card or Key Tag 3 times (each swipe within 5 seconds of the previous swipe) will cause the Lumina Mode to change to Away mode. When the Lumina Mode is Away or Vacation mode, swiping the Access Control Card or Key Tag 3 times (each swipe within 5 seconds of the previous swipe) will cause the Lumina Mode to change to Home mode.

Select 0 (NO) to disable or 1 (YES) to enable Lumina Mode change privileges for the selected user.

User Settings

User Settings consist of numbers, levels, times, dates, days of the week, durations, temperature settings, and humidity settings that can referenced in automation programs for a variety of uses. Each of these User Settings can then be easily modified by the user from a console or touchscreen, without any additional programming. User Settings can be used for programming wake-up times, lighting scenes, comfort temperatures when you are home, asleep, or away, sprinkler times, and much more.

Lumina Pro has 25 User Settings which may be used. Once configured, you can name and assign values to each of the preconfigured User Settings. To assign names to User Settings, under ***Setup | Names*** select 9 (USET).

- To access User Settings from a console, press **6** (STATUS), and then **9** (USET):
- From a Touchscreen without Video, touch the **Setup** icon, and then **User Settings**.
- From a Touchscreen with Video, touch the **System** icon, then **Setup**, and then **User Settings**.

For example, a use of a "Time" and/or "Date" User Setting is for a daily "Wake Up" time. You can easily change this time and days from a console or touchscreen.

This program is written with the User Settings (Wake Up Time) and (Wake Up Days) as the trigger.

```
TIMED WAKE UP TIME WAKE UP DAYS
        THEN BEDROOM LIGHTS ON
        THEN BEDROOM AUDIO ON
        THEN BEDROOM AUDIO VOLUME 50%
        THEN BEDROOM AUDIO SOURCE XM TUNER
```

The same program can be written with the User Setting (Wake Up Time) and (Wake Up Days) in the condition, rather than the trigger.

```
EVERY 1 MINUTE
        AND IF TIME IS WAKE UP TIME
        AND IF DAY OF WEEK IS IN WAKE UP DAYS
                THEN BEDROOM LIGHTS ON
                THEN BEDROOM AUDIO ON
                THEN BEDROOM AUDIO VOLUME 50%
                THEN BEDROOM AUDIO SOURCE XM TUNER
```

You can also programmatically change a user setting. For example, if you sleep a little later on weekends, you can have a program that automatically changes the "Wake Up" time. For example:

```
TIMED 12:00AM -----SS
                THEN SET WAKE UP TIME TO 8:00AM
```

Enhanced Programming

Note: To take advantage of the Enhanced Programming features, programs must be written with HAI PC Access Version 3.0 or later.

Enhanced Programming consists of several new features and structures that allow you to take full advantage of the powerful programming capabilities of your Lumina Pro controller. Enhanced Programming includes:

- Program block that may have multiple triggers, multiple conditions, and multiple actions
- Program block that can be triggered every so many minutes, seconds, or hours.
- Conditions can be created that utilize and/or/not logic and that utilize relational operators
- Conditions can reference properties of zones, units, thermostats, temperature/humidity sensors, messages, mode status, time/date, audio, access control, as well as constants and user settings.
- Most information known by the controller can now be used in automation programming.

Program Blocks

In previous version of the controller firmware, each automation program was constructed of a single line that consisted of a trigger, one or two optional conditions, and a command. Enhanced automation programs are now constructed in blocks to create a simpler, yet more flexible programming environment. Each program block may contain multiple triggers, multiple conditions, and multiple commands.

"Every" Program Trigger

A new program trigger has been added which allows a program block to be activated every so many seconds, minutes, or hours. This trigger is specified with an associated timer; when the timer expires, the program block is processed, and then the timer is reset.

This program trigger is used to evaluate conditions on an ongoing basis, by the length of the specified time. For example:

```
EVERY 5 SECONDS
        AND IF THERMOSTAT 1 IS GREATER THAN 75
                THEN BEDROOM FAN ON
```

Relational Operators in Conditions

For each condition, you have the ability to utilize relational operators. Each condition includes an operator and one or two values to check. Relational operators include equal to, not equal to, less than, greater than, is even, is odd, is a multiple of, and set membership checks. Greater than and less than operators allow for an extra value to be specified to check if a certain item is greater than or less than another item by more than the specified amount. For example:

```
WHEN SET AWAY
        AND IF WINDOW FLAG CURRENT VALUE IS LESS THAN 10
                THEN THERMOSTAT 1 OFF
```

"And/Or" Logic Operators in Conditions

A program statement with "And" specifies a conditional expression that must be true for the remainder of the program block to be processed. A program statement with "Or" combines two or more groups of "And" statements, such that as long as all the "And" statements in one of the groups are true, the commands in the "Then" group is processed.

For example:

```
WHEN SET AWAY
        AND IF LIVING ROOM ON
        AND IF DINING ROOM ON
        OR
        AND IF DARK
                THEN ALL HOUSE LIGHTS OFF
```

Enhanced Conditions

Conditions can reference properties of units, mode status, zones, thermostats, temperature and humidity sensors, time, date, audio, access control, messages, as well as constants and user settings. The condition can be evaluated by just about anything the HAI controller knows about.

a. Units: current state, previous state, timer, and level.

b. Lumina Mode: current mode, current mode including exit delay, code, entry timer, and exit timer.

c. Zones: loop reading, current state, arming state, and alarm state.

d. Thermostats: current temperature, heat setpoint, cool setpoint, heater currently running, air conditioning currently running, system mode, fan mode, hold mode, freeze alarm, communications error, current humidity, humidify setpoint, dehumidify setpoint, currently humidifying, currently dehumidifying, and outdoor temperature.

e. Temperature Sensors: current temperature, low setpoint, high setpoint, freeze alarm, and output state.

f. Humidity Sensors: current humidity, low setpoint, and high setpoint.

g. Time: time (hour and minute), hour, minute, daylight saving time status, and time of sunrise and sunset.

h. Date: date (month and day), year, month, day, and day of week.

i. Audio: power state, source, volume, and mute status for each audio zone.

j. Access Control: lock status, last user, and whether access was granted or denied for each access control reader.

k. Messages: currently displayed message and if it has been acknowledged.

l. System: current energy cost, phone line status, battery reading, and outdoor temperature.

Real-Time Operation Status of Thermostats

The current real-time heating and cooling status on an Omnistat or Omnistat2 is indicated on the Temperature Page on an OmniTouch Touchscreen. When the HVAC system is currently heating, a yellow block will appear around "Heat". When the HVAC system is currently cooling, a yellow block will appear around "Cool"

The current real-time humidifying and dehumidifying status of an Omnistat2 is indicated on the Humidity Page, for the respective Omnistat2, on the OmniTouch Touchscreen. When the thermostat is calling for humidification, a yellow block will appear around "Hmfy". When the thermostat is calling for dehumidification, a yellow block will appear around "Dfhy".

The current real-time status for heating, cooling, humidifying, and dehumidifying can also be used in automation programming logic.

Omnistat2 Features

There are several features on Omnistat2 thermostats that are supported by the Lumina Pro controller. These features include:

- Fan Cycle Mode
- Vacation Hold
- Humidity Display
- Humidity Setpoints
- Outdoor Temperature
- Occupancy Status
- Time and Date
- Energy Status

Fan Cycle Mode

In *Fan Cycle* mode on an Omnistat2 thermostat, the fan is cycled on and off in 20 minute cycles to circulate the air.

The fan control may be switched between auto, on, and cycle by selecting 4 (FAN) from the temperature menu of the selected Omnistat2 thermostat:

```
Upstairs FAN
0=AUTO  1=ON  2=CYCLE
```

Vacation Hold

In *Vacation Hold* mode, the thermostat ignores program schedule and remote system temperature setting changes for the duration of your scheduled time away. *Vacation Hold* can only be initiated at the Omnistat2 thermostat.

When an Omnistat2 thermostat is in *Vacation Hold*, the temperature display on the console or touchscreen for the selected Omnistat2 thermostat will display "Vacation" in the place it would normally display the status of Hold. You can not initiate a *Vacation Hold* command from the controller, but you are able to switch from *Vacation Hold* to *Hold On* or *Hold Off*.

Humidity Display

If your Omnistat2 is equipped with a humidity sensor, from a console or touchscreen, you can view the current relative humidity.

Humidity Setpoints

Humidity Setpoints are used to control connected equipment used for humidification and dehumidification.

The Humidify setting is used to control a stand alone humidifier.

The Dehumidify setting is used to control: a) the Fan Speed of an HVAC system with a variable speed fan, used to augment the dehumidification process, or b) a stand alone dehumidifier.

These humidify and dehumidify settings can be modified from a console, touchscreen, or automation program. The humidify setting may be adjusted at a console by selecting 6 (HMFY) from the temperature menu of the selected Omnistat2 thermostat:

```
Upstairs HUMIDIFY
ENTER HUMIDITY:
```

Enter the desired humidity level, and then press ' # ' to save setting. If the humidity level falls below this setting, the output connected to the humidifier (if applicable) is activated.

The dehumidify setting may be adjusted at a console by selecting the 7 (DFHY) from the temperature menu of the selected Omnistat2 thermostat:

```
Upstairs DEHUMIDIFY
ENTER HUMIDITY:
```

Enter the desired humidity level, and then press ' # ' to save setting. If the humidity rises above this setting, the output connected to the HVAC fan control or dehumidifier (if applicable) is activated.

Outdoor Temperature

If your Omnistat2 is equipped with an external outdoor temperature sensor, you can view the outdoor temperature from a console or touchscreen. The outdoor temperature can also be used as a condition in an automation program.

Occupancy Status

When the Program Mode of your Omnistat2 is configured for "Occupancy", the program setpoints are based on Lumina Mode. Whenever the Lumina Mode changes on the Lumina Pro, it will send the current occupancy mode (Home=Day, Sleep=Night, Away, or Vacation) to Omnistat2 thermostat. When configured in the manner, you can easily adjust the heat and cool settings for each occupancy mode on the Omnistat2 without ever having to create or edit automation programs stored in the controller.

Time and Date

The Lumina Pro now sends the current time of day and the date to the Omnistat2. As long as the time and date is correct on the Lumina Pro, there is no need to set the time or date on the Omnistat2.

Energy Status

When Lumina Pro sends the time and date to the Omnistat2, it also sends the current Energy Level. When the Energy Level changes, the Omnistat2 will display the current "Energy Level" in the Message Bar and will change the backlight color on the Omnistat2 display so that you will know the current energy status at a glance.