



ADD THIS DOCUMENT TO YOUR OMNI II OWNER'S MANUAL

Description

The Omni II Version 3.1 firmware adds the following new features:

- Added HAI Trigger messages for simple integration with remote serial devices
- Added Z-Wave Status Request Command
- Added automatic polling for Z-Wave Thermostats

The Omni II Version 3.0 firmware adds the following new features:

- User Settings
- Enhanced Programming
- Real-Time operation status of thermostats
- Support for Omnistat2 Thermostats
- OmniTouch support for real-time cool/heat/humidify/dehumidify status
- Automatic cycling of switched power when the system is disarmed
- Third-Party Protocol Enhancements
- Support for HAI Access Control

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.

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

HAI Triggers

The Pro-Link serial protocol has been enhanced by the inclusion of predefined ASCII serial messages called HAI Triggers. HAI Triggers can be used to activate or “trigger” programs in the Omni II controller when the specified ASCII serial message is received over a Pro-Link serial port. This is an easy way to interface with other serial devices (such as touchscreens, remote controls with a serial expander, etc.) that have a programmable ASCII protocol or that have HAI Trigger messages predefined in the device.

There are 127 HAI Triggers. Each HAI Trigger consists of ASCII characters starting with the characters “HAI” and ending with the number (1-127) of the trigger; hence, the triggers are HAI1 – HAI127.

Version 3.0 Controller Features

User Settings

User Settings consist of numbers, levels, times, dates, days of the week, durations, temperature settings, and humidity settings that can be 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.

Omni II has 10 User Settings which may be used. Once configured by your installer, 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 Omni II 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, security 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 ARM 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 ARM 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, security 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. Security: security mode, current mode including exit delay, arming code, entry timer, exit timer, alarm status, horn (sounder) status, and digital communicator status for each security area.
- 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, ok to arm status, armed status, 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 Omni II 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 the occupancy status of Omni II controller. Whenever the security mode changes on the Omni II, it will send the current occupancy mode (Day, 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 Omni II now sends the current time of day and the date to the Omnistat2. As long as the time and date is correct on the Omni II, there is no need to set the time or date on the Omnistat2.

Energy Status

When Omni II 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.

Automatic Cycling of Switched Power when the System is Disarmed

Whenever the Omni II security system is disarmed, the controller will cycle power to the SWITCH 12V or a Switched Power Output to reset smoke detectors and other latching devices. In previous versions of controller firmware, the SWITCH 12V or Switched Power Outputs were only cycled with the security system was armed.

This feature allows smoke detectors to be silenced and reset without having to arm the security system.

Third-Party Protocol Enhancements

Numerous enhancements have been made to the Omni-Link protocol to increase functionality and ease third-party integration with HAI controllers. 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, arm and disarm the security system, 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
- Arming or Disarming of the Security System in the respective Area
- 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:

If a valid card or key tag is presented:

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 security arming state for that area.

- LED indicators illuminate red: The security system in the respective area is currently armed
- LED indicators illuminate green: The security system in the respective area is currently disarmed

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.

If an invalid card or key tag is presented:

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 security arming state for that area). 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.

Arming or Disarming of the Security System in the Respective Area

Each HAI Access Control Card Reader is assigned to an Area. 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 arming and disarming privileges for the respective reader) is presented at the reader 3 times, each presentation within 5 seconds of the previous presentation of the card, the security system will:

- (a) Arm to the Away mode (in the respective area) if the security system is currently disarmed, OR
- (b) Disarm the security system (in the respective area) if the security system is currently armed in any security mode

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 security arming state for that area. 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 mode of the security system will toggle between Off (disarmed) and Away. Whenever the security mode changes, the color of the 9 LED indicators will also change to indicate the new arming state of the area: Red to indicate Away or Green to indicate Disarmed.

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 disarm the alarm, 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.

User Setup

Each Access Control Card and Key Tag used is assigned to a code in the HAI 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 arming and disarming privileges

Access Control Cards and Key Tags can easily be enrolled and configured using an HAI 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 returned.

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 :
1234           0=CLR ↓
```

By default, each configured Access Control Card or Key Tag is valid at all 4 readers. To add or remove an Access Control Reader from the list of valid readers, enter the 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 :
1-34           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 or Key Tags for Arming and Disarming

Each Access Control Card or Key Tag may be configured to allow the user to arm or disarm the security system at Access Control Readers that are configured for arming and disarming.

CARD 1 ARM/DISARM:	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 security arming state for that area.

- LED indicators illuminate red: The security system in the respective area is currently armed
- LED indicators illuminate green: The security system in the respective area is currently disarmed

When the security system is disarmed, swiping the Access Control Card or Key Tag 3 times (each swipe within 5 seconds of the previous swipe) will cause the security system to arm to the Away mode. When the security system is armed in any security mode, swiping the Access Control Card or Key Tag 3 times (each swipe within 5 seconds of the previous swipe) will cause the security system to disarm.

Select 0 (NO) to disable or 1 (YES) to enable arming and disarming privileges for the selected user.