# Integration Note

| | |
|---|---|
| Manufacturer: | HAI |
| **Model Number(s):** | **Omni LT, II, Pro II** |
| **Core Module Version:** | |
| Comments: | Panel Firmware ver. 2 or 3<br>OmniStat 2 FW 1.3 |
| Document Revision Date: | 2/2/2017 |

## OVERVIEW AND SUPPORTED FEATURES

The **HAI Omni LT, II and Pro II** security panels integrate with the ELAN system using an RS-232 serial connection. The panels use HAI Serial Cable Kit # 21A05-2 to allow RS-232 communication between the **ELAN Controller** and the control panel.

**IMPORTANT! The HAI Omni LTE Panel is NOT supported.**

This integration note describes connecting the HAI security panel with optional lighting or climate behind the security panel to the ELAN system. If using HAI thermostats standalone (not behind the panel) please see the appropriate climate Integration Note. HAI lighting is always behind a security panel.

**Note:** Ethernet control of applicable HAI Security Panels is not supported at this time.

The integration of the security system allows for monitoring and control from any touch screen, telephone or computer both locally and remotely. Additionally, events occurring in the security system can trigger system commands in other sub systems in the home.

**IMPORTANT! HAI Security panels are not supported on the legacy MultiBrick.**

### THESE PANELS SUPPORT THE FOLLOWING FEATURES:

**Arm – Disarm:** Arm and disarm from the Viewer interface is supported for all partitions (referred to as **areas** by HAI). Status information is available for all partitions.

**Auto Arm:** Arming as a System Command from the Event Mapper is supported for all partitions. By default, automatic arming is disabled in the Configurator.

**Zone Status:** Zone status display for all zones (in any partition) is properly shown on any Viewer.

**History View:** The history view is properly supported on any Viewer.

**Zone Bypass:** If a zone is programmed as a bypass-able zone in BOTH the security panel and the Configurator, the Security Tab in the Viewer will allow you to bypass that zone. The Configurator does not auto-detect if a zone is bypass-able: you must set each zone with the Configurator to enable this feature.

**Auto Zone and Partition Detection**: Once the panel has been configured, partition and zone information is automatically imported into the ELAN system, including all zone and partition names.

**Control of HAI Controlled Lighting**: Light switches and Input/Output controlled by the Omni panel support Auto-Discovery and Control in the ELAN system. See **HAI Lighting** below for details.

**Control of HAI Controlled Climate**: HAI OmniStat/OmniStat 2 and associated sensors support Auto-Discovery and Control in the ELAN system. See **HAI Climate** below for details.

**IMPORTANT! The HAI panel must be properly grounded. Read the section below for more details.**

**GROUNDING THE HAI PANEL:**

The HAI Installation Guide instructs dealers to ground the panel to a cold water pipe or other appropriate earth ground. However, our experience has been that some dealers prefer not to ground the panels.

If you connect the HAI panel to the ELAN Controller with an RS-232 connection, as shown in Option 1 below, then you **MUST** ground the panel **OR YOU WILL DAMAGE THE CONTROLLER**.

If you are unable or do not wish to ground the HAI panel, then you **MUST** use a SerialBrick to connect with the ELAN system, as shown in Option 2 below.

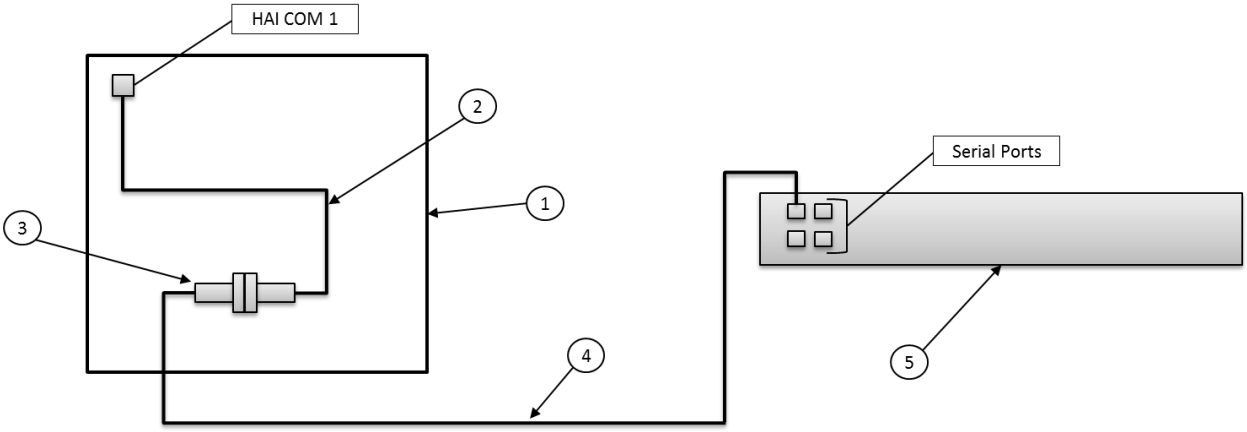
## INSTALLATION OVERVIEW

1. Install the security system, lighting, thermostats etc. and fully program the panel and all controlled subsystems according to HAI documentation. See HAI Lighting and HAI Climate for specific notations on integration below (if applicable).
2. If using connection method 1 below, then **GROUND THE HAI PANEL** according to HAI instructions. **FAILURE TO GROUND THE PANEL WILL DAMAGE THE CONTROLLER.**
3. Run a Cat5 wire from the ELAN system to the security panel and test the cable.
4. Test the security panel, zone sensors, lighting, thermostats and HAI keypads for functionality.
5. Connect the ELAN system to the panel using the panel's serial port 1: expansion serial ports are not supported, and the Ethernet connection to the Pro II is not supported. Refer to the Wiring Diagrams below.
6. Configure the ELAN Controller communication device and security panel and confirm communication between the panel and the ELAN Controller. Refer to ELAN Configuration Details below.
7. Discover Devices in the Configurator to read all of the zone and partition data from the HAI panel.
8. Fault zones in the system and then confirm that the ELAN Viewer shows the faulted zones.
9. Test the arming and disarming capability from a computer or touch screen and confirm history function.
10. Test display and control of all connected HAI subsystems.

# WIRING DIAGRAM

## OPTION 1

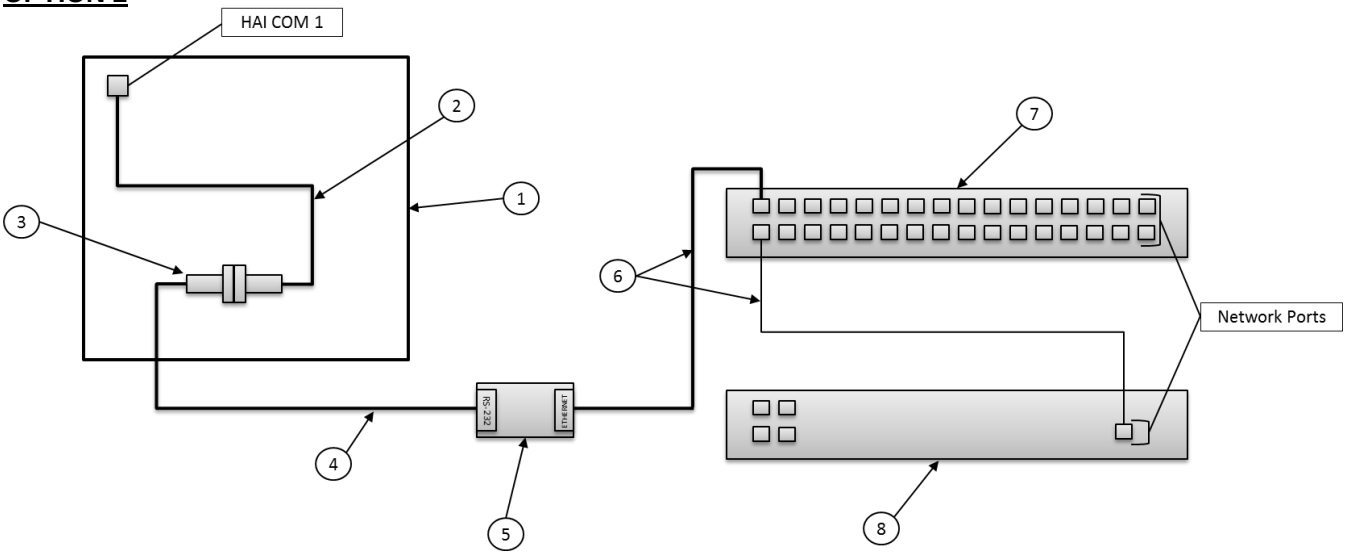
**IMPORTANT NOTE:** The HAI panel must be grounded if you connect the panel to a serial port on the ELAN controller.




### BILL OF MATERIALS FOR OPTION 1

| # | Device | Manufacturer | Part Number | Protocol | Connector Type | Notes |
|---|---|---|---|---|---|---|
| 1 | Security Panel | HAI | Omni LT, II, PRO II | RS-232 | Various | |
| 2 | HAI Serial Cable | HAI | HAI #21A05-2 | RS-232 | RJ11 Male X DB-9 Female | Connect to HAI serial port 1 |
| 3 | DB9M to RJ45 Adapter | ELAN | 8900597 (HA-CB-307) | RS-232 | DB-9 Male X RJ-45 Female | |
| 4 | Cat5 Cable | Installer | N/A | RS-232 | RJ-45 Male X RJ-45 Male | Must terminate all 8 conductors |
| 5 | ELAN Controller | ELAN | Various | RS-232 | RJ-45 Female | Use COM1, 2, 3 etc. |

## OPTION 2




### BILL OF MATERIALS FOR OPTION 2

| # | Device | Manufacturer | Part Number | Protocol | Connector Type | Notes |
|---|---|---|---|---|---|---|
| 1 | Security Panel | HAI | Omni LT, II, PRO II | RS-232 | Various | |
| 2 | HAI Serial Cable | HAI | HAI #21A05-2 | RS-232 | RJ11 Male X DB-9 Female | Connect to HAI serial port 1 |
| 3 | DB9M to RJ45 Adapter | ELAN | 8900597 (HA-CB-307) | RS-232 | DB-9 Male X RJ-45 Female | |
| 4 | Cat5 Cable | Installer | N/A | RS-232 | RJ-45 Male X RJ-45 Male | Must terminate all 8 conductors |
| 5 | SerialBrick | ELAN | HWEB100 | RS-232 X IP | RJ-45 Female X RJ-45 Female | |
| 6 | Cat5 Cable | Installer | N/A | IP | RJ-45 Male X RJ-45 Male | |
| 7 | Network Switch | Various | Various | IP | RJ-45 Female X RJ-45 Female | |
| 8 | ELAN Controller | ELAN | Various | IP | RJ-45 Female | |

## PANEL SETUP

The HAI panels will integrate without any changes if the default settings for the **PC Access Code** (1111), **PC Access** (1) and **Serial Rate 1** (9600) have not been changed.

Check these values following the table below:

| Step | Instructions | Comments |
|---|---|---|
| 1 | Press [9] + [1111] + [#] | Goes to the **Installer's Menu,** using the default installer's code of 1111 |
| 2 | Press [6] + [1111] + [#} | Goes to **PC Access Code** and sets it to **1111** (system default) |
| 3 | Press [down arrow] + [1] + [#] | Goes to **PC Access** and sets it to **1** (enabling PC Access) |
| 4 | Press [*] | Goes back to **Installer's Menu** |
| 5 | Press [7] + [down arrow 5 times] + [#] | Allows selection of **Serial Rate 1** |
| 6 | Press the arrow keys until the setting is **9600**, then press [#] | Sets **Serial Rate 1** to **9600** |
| 7 | Press the down arrow | Displays the Serial Function. Confirm it is set to OMNI-LINK. If not, follow steps on screen to set it. |
| 8 | Press [*] + [*] + [*] | Exits all programming menus |

## HAI LIGHTING

**HAI LIGHTING SYSTEMS SUPPORT THE FOLLOWING FEATURES WHEN CONNECTED BEHIND A HAI SECURITY PANEL IN ELAN:**

**Auto Detection**: The ELAN system will automatically detect switches, inputs and outputs in the system.

**Switch Control:** Control of individual loads from virtual and simulated keypads.

**Scene Control:** Control of scenes from virtual and simulated keypads.

**Schedule Control:** Schedules can be set using the Viewer software. Be sure to disable HAI scheduling if using ELAN for schedule control.

**Relay Control:** Control of HAI relays through custom buttons and the Event Mapper.

**Input Sense**: Detection of inputs from HAI inputs and control of any other device through the Event Mapper and/or displayed through custom controls.

**THE FOLLOWING FEATURES ARE UNSUPPORTED WHEN HAI LIGHTING SYSTEMS ARE CONNECTED BEHIND A HAI SECURITY PANEL IN ELAN:**

**Keypad Detection**: Individual keypads are not detected automatically, and must be added by hand in the ELAN Configurator.

**Scene Detection**: Individual Scenes/Links are not detected automatically, and must be added by hand in the ELAN Configurator.

### HAI PANEL PROGRAMMING

Program your HAI Security Panel to work with your lighting system according to standard HAI procedures prior to integration with ELAN.

## HAI CLIMATE

**Supported models:** Omnistat and Omnistat2 **WIRED Thermostats ONLY** connected to the HAI Security Panel. Models that support Zigbee or other wireless formats are not compatible!

**THE HAI OMNISTAT/ OMNISTAT2 THERMOSTATS SUPPORT THE FOLLOWING FEATURES WHEN CONNECTED BEHIND A HAI SECURITY PANEL IN** ELAN**:**

**Temperature Control:** Temperature control can be managed by schedules tied to house modes or by manual control based on time (Timed Temporary Hold, Temporary Hold and Permanent Hold).

**Mode Control:** The climate system can be set to run in the following heating and cooling modes: **Heat** only, **Cool** only, **Auto Heat/Cool** or **Off**. In addition, systems that have a fan can be set to run in **Automatic** mode or **Continuous** mode.

**History View:** The history view shows the inside temperature, outside temperature, and cooling and heating set-points.

**Schedule Control:** Up to three schedules can be set using the Viewer software. The schedules are tied to the house mode. Be sure to disable HAI scheduling if using ELAN for schedule control.

**Auto Thermostat Detection**: The ELAN system will automatically detect all the thermostats connected to system, along with each thermostat's ID (number).

**Celsius and Fahrenheit**: HAI Thermostats support displaying Temperatures in C or F both at the stat and in the ELAN system.

**External Sensors**: External Temperature sensor inputs are detected and can be displayed in the Viewer for Outside Temperature/Humidity as well as additional History Inputs.

**THE FOLLOWING FEATURES ARE UNSUPPORTED:**

**Humidity Control**: Humidifier/Dehumidifier control with RC-2000 thermostats is not currently supported.

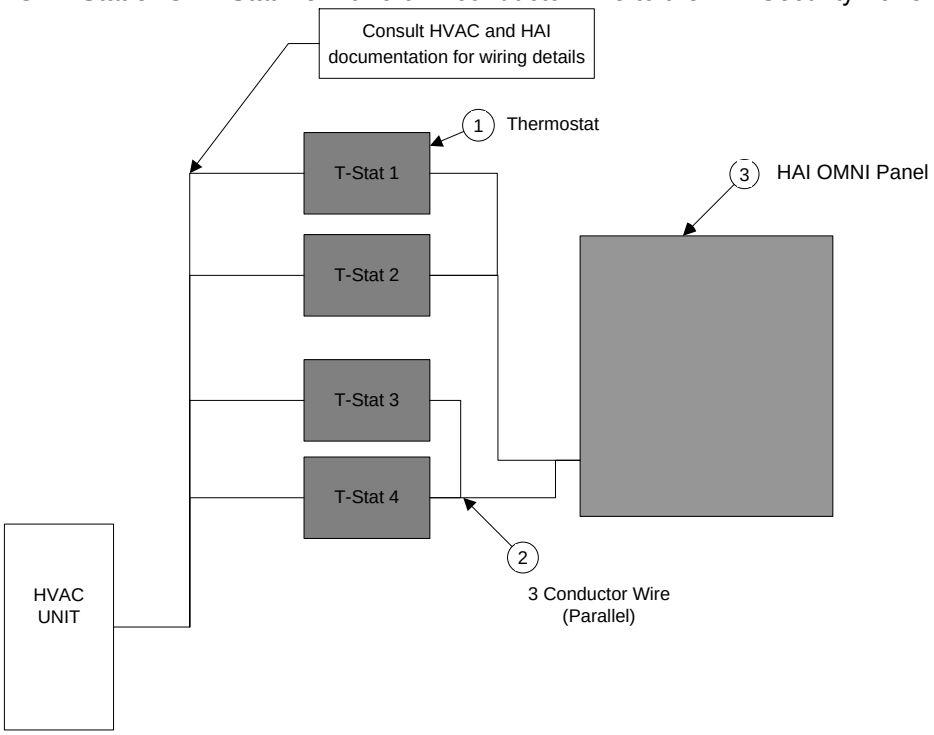
**Humidity Display**: Humidity readings from the RC-2000 thermostat cannot be displayed in the viewer.

**History View**: Unit run and fan run times are NOT communicated to ELAN and NOT displayed on History tab.

**Decimal Temperature Control**: ELAN Core module 5.5 added support for decimal/fractional temperature display. The HAI Thermostats are not compatible with control using fractional numbers.

## WIRING OVERVIEW

Wire your HAI OmniStat or OmniStat 2's with 3 or 4 conductor wire to the HAI Security Panel.

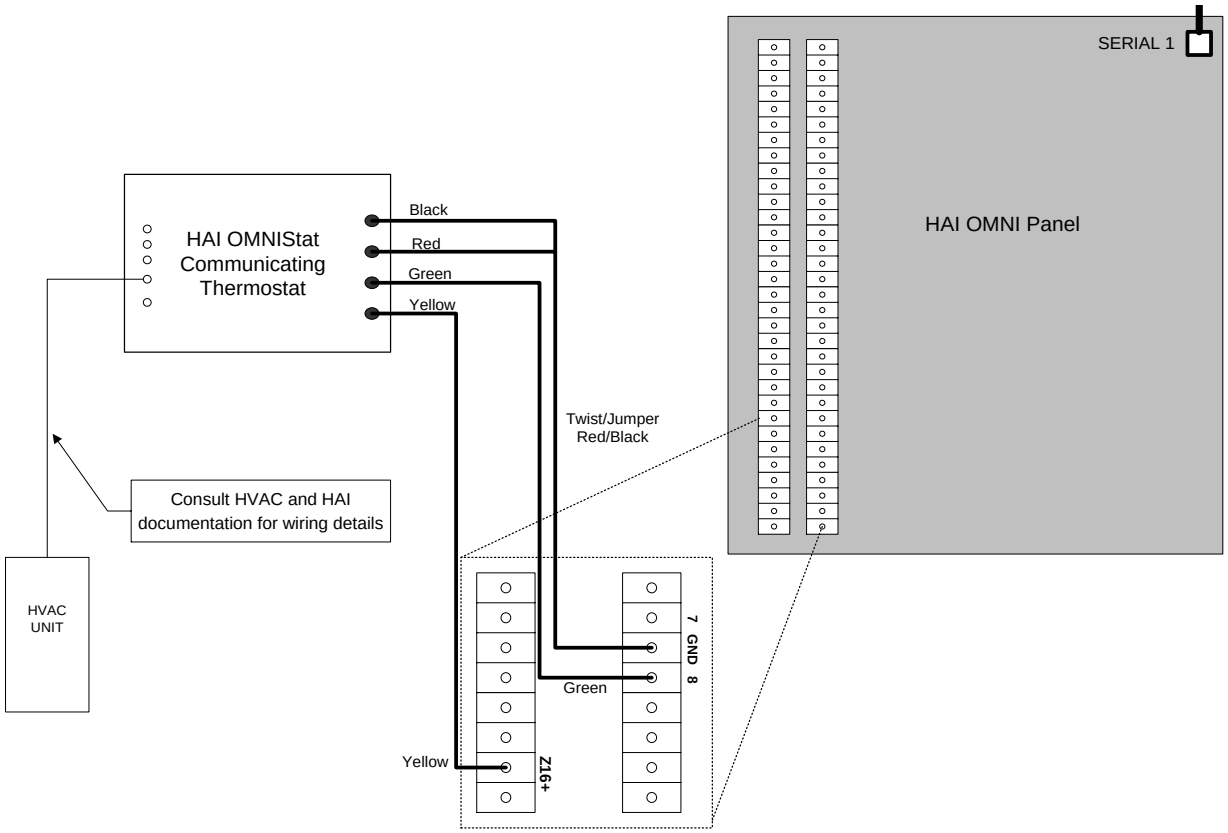



*Additional thermostats are connected in parallel.*
*They may be connected in home-run or daisy chain configuration.*

## WIRING DIAGRAM: HAI OMNISTAT

All thermostats on an Omni Series Security Panel are connected to Ground, Zone +16 and Output 8. **Connect the red COMM wire with the black COMM wire.**

**Note:** All thermostats on an **OmniLT** controller are connected to the GRN (Green), BLK (Black), and YEL (Yellow) terminals under the section marked "TSTAT" (not pictured).



## OMNISTAT PROGRAMMING

Once the thermostats are powered up and running properly, you need to make a few changes to the thermostat settings to integrate with the ELAN system.

### STANDARD THERMOSTAT SETUP

The changes outlined below in **Table 1** assume that you are starting with a factory default thermostat. These changes will then put the thermostat into a standard ELAN setup.

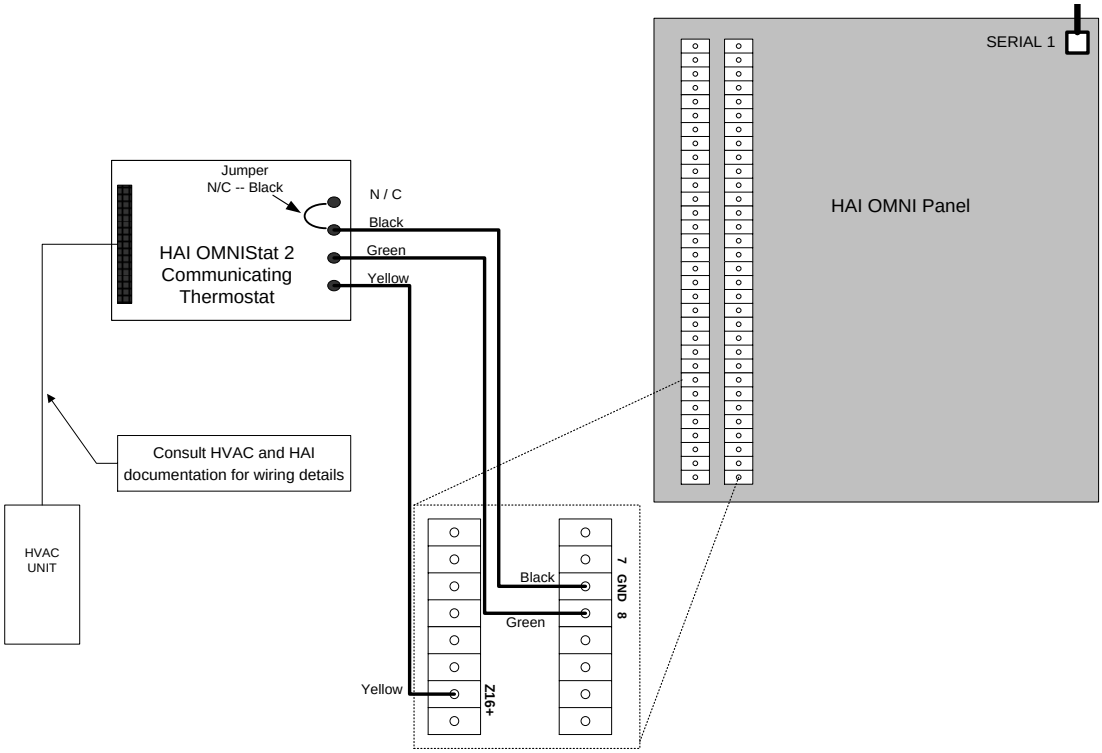
| Step | Instructions | Comments |
|---|---|---|
| 1 | Press [Mode] until the thermostat is OFF and wait 10 seconds | Places the thermostat into **Off Mode** |
| 2 | Press [Prog] + [Prog] + [Prog] + [Fan] | Enters **Set-up** mode at **Location 00 (Address)** |
| 3 | Press [Up Arrow] and [Down Arrow] until the desired **Address Number** appears | Sets **Location 00** to the **Address Number** of the thermostat |
| 3 | Press [Prog] | Goes to **Location 01 (Communications)** |
| 4 | Press [Up Arrow] or [Down Arrow] until **1** appears | Sets **Location 01** to **100 baud, RS-232 Mode** |
| 5 | Press [Prog] + [Prog] | Goes to **Location 03 (Display Options)** |
| 6 | Press [Up Arrow] and [Down Arrow] until **5** appears | Sets **Location 03** to **am/pm time format, non-programmable** |
| 7 | Wait 20 seconds | Thermostat switches to **Normal Mode** |

**Table 1**: Steps to setup a factory default Model HC-Series thermostat with standard ELAN settings.

## WIRING DIAGRAM: HAI OMNISTAT2

All thermostats on an Omni Series Security Panel are connected to Ground, Zone +16, and Output 8.

**Note:** All thermostats on an **OmniLT** controller are connected to the GRN (Green), BLK (Black), and YEL (Yellow) terminals under the section marked "TSTAT" (not pictured). **Note**: Newer revisions of OmniStat2 replace the NC/Black jumper shown before with a jumper J8 on the rear of the circuit board (not shown).



### OMNISTAT 2 PROGRAMMING

The changes outlined below in **Table 2** assume that you are starting with a factory default thermostat. These changes will then put the thermostat into a standard ELAN setup.

| Step | Instructions | Comments |
|---|---|---|
| 1 | Press the Dial to enter the Main Menu | |
| 2 | Use the Dial to select and enter SETUP | Firmware version will appear at bottom of SETUP |
| 3 | Use the Dial to enter INSTALLATION SETTINGS | Press Continue on the warning message |
| 3 | Enter Thermostat Address | Each thermostat must be assigned a unique address |
| 4 | Press OK to accept changes | Returns you to INSTALLATION SETTINGS |
| 5 | Enter Communications Mode | Use the Dial to alter fields and Next to move between |
| 6 | Set Communications to Serial and System Baud to 100. | Expansion baud does not impact integration and can be set as needed or ignored. |
| 7 | Press OK to accept changes | Returns you to INSTALLATION SETTINGS |
| 8 | Enter Program Settings | |
| 9 | Set Program Mode to NONE | This will disable internal schedules |
| 10 | Press OK to accept changes | You may now BACK out of setup mode. |

**Table 2**: Steps to setup a factory default OMNISTAT 2 with standard ELAN settings.

#### FIRMWARE VERSION

ELAN requires each TStat to be using appropriate firmware. Please check and ensure your OMNISTAT 2 is using firmware version 1.03.

Check your firmware by entering the SETUP menu as detailed in Step 2 above. If your version is not version 1.03, or no firmware appears listed in this area, contact HAI for assistance.

**Note:** This firmware update is particularly important if you are running the OmniStat 2 in Celsius, as earlier firmware contained a bug which causes odd readings and bad behavior. Please update to 1.03 by contacting HAI if you are running in Celsius.

## HAI PANEL PROGRAMMING

Program your HAI Security Panel to work with Thermostats according to standard HAI procedures.

**Note:** Each thermostat must be programmed through a Keypad or PC Access by Address, with a Name and the control type (Heat, Cool, Auto Heat/Cool etc.) prior to integrating with ELAN.

## ELAN CONFIGURATION DETAILS

The following table provides settings used in the ELAN Configurator when connecting to the HAI control panel. Please refer to the *Configurator Reference Guide* for more details. In the table below:

- "<Select>" Select the appropriate item from the list (or drop-down) in the Configurator.
- "<User Defined>", etc. Type in the desired name for the item.
- "<Auto-Detect>" This value is read from the HAI panel. It can be changed in the Configurator if desired, allowing you to display longer zone / partition names in the ELAN interface than are supported by the HAI panel.
- "<Defined in Security System> This value is set in the HAI panel, and must match the value set in the Configurator.

**SECURITY SETUP:**

| Devices | Variable Name | Setting |
|---|---|---|
| | | |
| **SECURITY** | | |
| **Communication Devices (option 1)** | **Name** | <User Defined> (Ex: **Security**) |
| | **Communication Type** | **HAI OMNI Network** |
| | **Hardware Type** | <Serial Port> |
| | **COM Port** | <Select> |
| | | |
| **Communication Devices (option 2)** | **Name** | <User Defined> (Ex: **Security**) |
| | **Communication Type** | **HAI OMNI Network** |
| | **Hardware Type** | <Select> |
| | **Device / Port** | <Select> |
| | | |
| **Security Panels** | **Name** | <User Defined> (Default: **HAI Omni Series**) |
| | **Device Type** | **HAI Omni Series** |
| | **Comm Device** | <Select> (Default: **Security**) |
| | **Set Login PIN** | <Defined in Security System> (Default: **1111**); this is the PC Access Code |
| | | |
| | | **Name Show Auto Keys** |
| | **Disarm** | **Off Yes No 4** |
| | **Mode 1** | **Day Yes No 4** |
| | **Mode 2** | **Night Yes No 4** |
| | **Mode 3** | **Away Yes No 4** |
| | **Mode 4** | **Vacation No No 4** |
| | **Mode 5** | **Day Instant No No 4** |
| | **Mode 6** | **Night Delayed No No 4** |
| | | |
| **Partions** | **Name** | <Auto-Detect> May be renamed as desired |
| | | |
| **Zones** | **Name** | <Auto-Detect> May be renamed as desired |
| | **Enable Bypass** | <Defined in Security System> (See Note 1) |
| | **Select Partitions for Zone** | <Auto-Detect> |

**Notes:** 1.The Enable Bypass variable must set to Yes in order to enable this feature for a zone and the zone must be bypassable in the security panel.

## LIGHTING SETUP:

| Devices | Variable Name | Setting | Comments |
|---|---|---|---|
| | | | |
| **LIGHTING** | | | |
| **Communication Devices** | **Name** | <Auto Detect> | **Auto-Discovered with Security** |
| | | | |
| **Lighting Interface** | **Name** | <Auto Detect> (Default: **HAI Lighting Controller**) | **Auto-Discovered with Security** |
| | | | |
| **Lighting Devices** | **Name** | <Auto Detect> | **Auto-Discovered with Security** |
| | **Lighting Interface** | <Auto Detect> | |
| | **Device Type** | <Auto Detect> | |
| | **Light Number** | <Auto Detect> | |
| | | | |
| | | | |
| **Keypads** | **Name** | <User Defined> | |
| | **Lighting Interface** | <Select> (Default: **HAI Lighting Controller**) | |
| | **Keypad Type** | <Select> | |
| | **Switch / Dimmer** | <Select from list> (See Note 2) | |
| | **Location** | <Select from list> (Not Required) | |

2. The **Switch / Dimmer** drop-down appears for certain keypad types. Select the switch that corresponds to the keypad.

## CLIMATE SETUP:

| Devices | Variable Name | Setting | Comments |
|---|---|---|---|
| | | | |
| **CLIMATE** | | | |
| **Communication Devices** | | <Auto-Detect> | **Auto-Discovered with Security** |
| | | | |
| **HVAC Units** | **Name** | <User Defined> | <User Defined> |
| | **Model** | **Generic HVAC Unit** | **Generic HVAC Unit** |
| | **Controls Heat** | <Select from list> | <Select from list> |
| | **Controls Cooling** | <Select from list> | <Select from list> |
| | **Controls Fan** | <Select from list> | <Select from list> |
| | | | |
| **Thermostats** | **Name** | <User Defined> | **Auto-Discovered with Security** |
| | **Location** | <User Defined> (Not Required) | |
| | **Com Device** | <Auto Detect> | |
| | **Thermostat #** | <Auto Detect> | |
| | **Heating Unit** | <Select from list> | |
| | **Cooling Unit** | <Select from list> | |
| | | | |
| | | | |
| **Schedules** | **HVAC Schedule** | <Select from list> | 0, 1, 2 or 3 schedules |
| | **Programs** | <Select from list> | 1, 2, or 3 weekly programs |
| | **Monday - Sunday** | <Select days> | Select days that go together |
| | **Periods per Day** | <Select from list> | 1, 2 or 4 periods per day |
| | | | |
| **Global Options** | **Units** | <Select from list> | Fahrenheit or Celsius |
| | **Temporary Hold Mode** | <Select from list> | Timed Hold or Hold until next period |
| | **Temporary Hold Default Time** | <Select> | |
| | **Outside Temperature Sensor** | <Select from list> | Choose optional sensor if installed or choose Internet |
| | **Outside Humidity Sensor** | <Select from list> | Choose optional sensor if installed or choose Internet |

## COMMON MISTAKES

1. Failing to test the Cat5 cable assembly. It is easy to make a mistake when terminating the Cat5 cable with the RJ-45 connectors. Always use a LAN tester to check for continuity and shorts.
2. Using a Cat5 patch cable without all 8 conductors. Some Ethernet patch cables only have the 4 conductors (1,2,3,6) needed for Ethernet communications. These cables will not work as patch cables for RS-232 communications. Visually inspect the clear plastic connectors to determine if all 8 wires are present.
3. Using the incorrect Serial adapters. Use the HA-CB-307 to connect the Cat5 to the HAI 21A05-2 serial adapter.
4. Using the wrong **PC Access code**. The default code in the Configurator and in the HAI Omni panel is **1111.** If you have a different PC Access code you will need to enter this in the configurator **Set Login PIN** button.

   **NOTE**: If the wrong access code is sent to the HAI panel from the ELAN system more than once then the HAI panel will block all subsequent login attempts. To defeat the lock-out, you must either disconnect serial between ELAN and HAI and leave them so disconnected (to prevent further attempts) for a period of 24 hours. Alternately, you may remove all power from the HAI panel (including battery) and leave the unit without power for about 60 minutes and then try again.

   **Additional PC Access Code note**: Do not set the code to "0000". This is the same as disabling PC access.
5. Not properly configuring the HAI Panel serial port. The serial port on the HAI panel must be configured to use 9600 Baud Rate AND the OMNI-LINK Serial Function. See Panel Setup above.
6. Making changes or additions to the HAI setup after integrating the system into ELAN. Any changes made after integration require that you re-**Discover Devices** on the Security Panel before changes will be reflected in ELAN. This includes changes to Lighting, Climate etc... It is best practice to finalize and test all programming in the HAI system prior to integrating with ELAN.
7. Not naming all Thermostats. Check that all of your Thermostats have been named within your HAI programming. Unnamed Thermostats cannot be detected automatically by ELAN. (They still can be added manually by ID number).
8. Programming two thermostats with the same address.
9. Using stats with incorrect firmware version. ELAN has tested firmware version 1.02c, and suggests using this version of firmware or newer. To alter firmware on your Thermostats please contact HAI. **If you will be operating in Celsius your OmniStat 2 MUST be running version 1.03.**
10. Improper Programming of OmniStat/OmniStat 2. All Thermostats must be set to Serial Communications mode with a baud rate of 100 to communicate with the HAI Panel.
11. Attempting to use the Omni LTE panel – This panel is not supported.