Thermostat Processing Unit, CLI-8000-00 / 8000A-00

Description

The CLI-8000 and CLI-8000A, an eight zone Thermostat Processing Unit, are at the heart of the Savant® Centralized Climate control system. The Thermostat Processing Unit (TPU) easily integrates into most leading Heating, Ventilation and Air Conditioning (HVAC) solutions.

The CLI-8000 version is configured using the keypad display on the front panel. Once installed and configured, the Savant Development Environment can be integrated to add monitoring and control through an iOS device such as iPad® or iPod®.

The CLI-8000A version is configured using a climate application loaded onto an Android™ based tablet (Android is a trademark of Google Inc). The tablet, which gets installed into the front cover of the TPU, incorporates a touch screen interface with an elegant climate control application for setting up, viewing, and controlling each climate zone independently. The CLI-8000A can also incorporate the Savant Development Environment for control and monitoring using an iOS device.

Available Sensors

The CLI-8000/8000A collects the climate data received from various sensors and compares the data to a set of previously configured set points. The processed data is used to control various functions within an HVAC system. An array of optional sensors are available.

- The CLI-THFM1 temperature and humidity sensor delivers humidity and temperature data to the CLI-8000/8000A. Multiple CLI-THFM1 sensors can be connected onto a single Data Sensor Bus (DSB).
- Various indoor, outdoor, slab, and plenum sensors are available.

Set Up and Control

There are a few different methods that can be used to control and configure the system.

- The CLI-8000 incorporates an integrated keypad and display used to configure the TPU to operate with most HVAC systems.
- The CLI-8000A adds an Android™ based tablet making the configuration and monitoring a much simpler process (Android is a trademark of Google Inc).
- Set Point control can be achieved through the integrated keypad, the Android based tablet (CLI-8000A only), or the Savant TrueControl User Interface.

Wall Mountable

The CLI-8000/8000A is commonly wall-mounted in a utility room with easy access for maintenance and service. Its small form factor reduces wall clutter and improves cable management. Optional wall brackets are available for a flush mount application on a 16 inch on center studded wall.

Common Applications

The system is designed to work with various types of HVAC systems and can do so on a per-zone basis. From a very simple application such as controlling a single zoned HVAC system, to a much more complex application that involves combining zones, the CLI-8000/8000A does it all. The versatility of the system makes it a great choice for builders and integrators alike.

Savant Ecosystem

The system is integrated into the Savant® Control System by controlling and monitoring the climate within a facility or home. The Centralized Climate Control system is one component of a full solution involving automation and control for lighting, security systems, music, video, surveillance cameras and more.

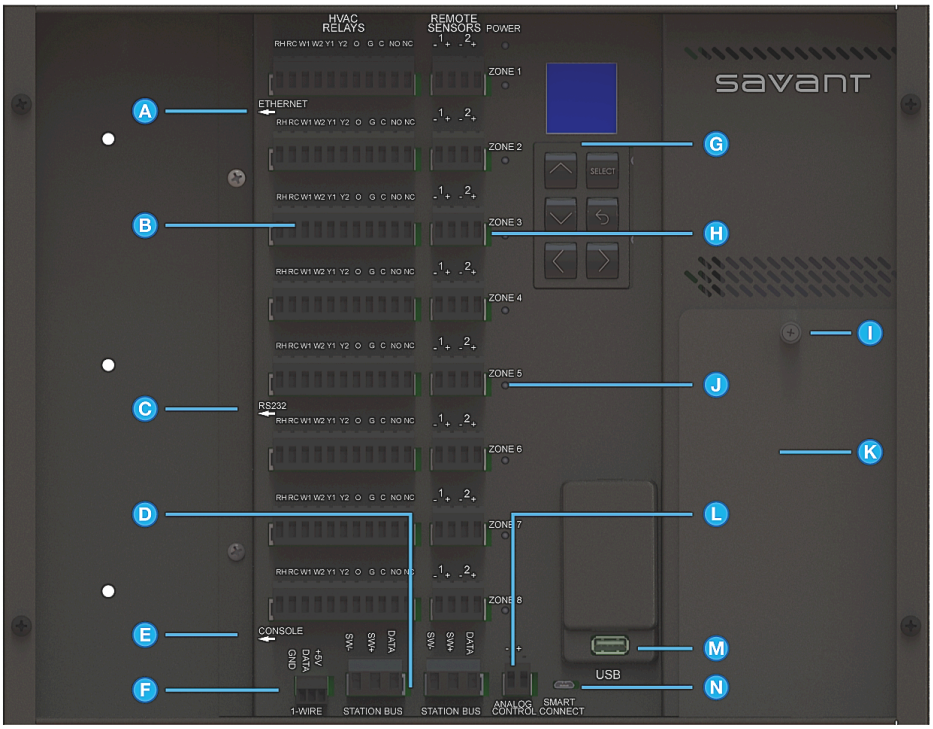
Scan this QR code for additional product information.

Feature Summary

- Can control up to eight separate HVAC systems
- Supports Standard and Heat Pump HVAC systems
- Zones may be grouped together to form a zone controller for controlling mechanical dampers
- Supports a bus architecture for smart sensors
- Remote indoor and outdoor sensors available
- Remote slab and plenum sensors available
- Up to four temperature sensors can be configured in any one zone.
- Up to two humidity sensors can be configured in any one zone.
- Integrated Six-Button Keypad with Display for simple setup and configuration.
- Integrates easily with the TrueControl™ Application
- CLI-8000A with integrated Android™ based touch interface is available
- Configurable HVAC modes (Off, Auto, Heat, and Cool)
- Fan control and configurable Fan Cycler
- Reduces wall clutter & improves cable management
- Addition features when integrated with a Savant® system
  - Full scheduling capabilities for Energy Savings and increased comfort.
  - Historical Data on temperature and system usage
  - Remote Access for monitoring and control
  - Instant communication between the CLI-8000/8000A and the Savant System.

Front Panel of CLI-8000/8000A

Front Panel



Item		Description
A	Ethernet	Reserved for Future Use
B	HVAC Relays	Each relay bank or zone gets wired to an HVAC system. The CLI-8000/8000A supports wiring up to eight individual HVAC systems.
C	RS-232	Connect cable from the RS-232 port to a Savant Controller (SSC-0008,SSC-0025). Communication between the controller and the CLI-8000/8000A is achieved over the RS-232 connection. RS-232 supports 19200 baud.
D	Station Bus	Reserved for Future Use
E	Console	Mini USB female connector (Serial UART); Debug terminal
F	DSB/1-Wire	The DSB/1-Wire Connector connects to the Data Sensor Bus, which is a serial bus based on the 1-Wire protocol. The CLI-THFM1 smart sensor communicates over the Data Sensor Bus through this connection. Up to two smart sensors per zone can be configured with a total of eight per system.
G	Display/Keypad	Monitors and configures the system. Use the keypad to scroll through the available menus and configure each zone.
H	Remote Sensors	Indoor, Outdoor, Slab, and Plenum two-wire temperature sensors are connected here. A maximum of two per zone is supported. For information on which sensors are supported in the REMOTE SENSORS Connection, refer to the Temperature Sensor Functionality table towards the end of this document.
I	Input Power (Access)	Remove the power input access screw and remove the associated panel. This will give user access to the power supply board for wiring the 24V AC input power.
J	Zone LEDs	The Zone LED's indicate which zone has been selected via the keypad for configuration.
K	Input Power (24V AC)	System is powered by a 24V AC power source. Power cable is fed through a ½ inch cable restraint (not included) installed at the bottom of box. Input power is wired to a two position screw terminal block on the power supply board.
L	Analog Control	Reserved For Future use
M	USB	The USB port connects to the optional Android based tablet. Communication between the tablet and the CLI-8000A version of TPU is achieved through the USB port.
N	Smart Connect	Maintenance functions such as firmware upgrades are achieved through the Smart Connect connection. Requires SCA-CONF-XX or SCA-CONFL-XX Smart Connect cable.

Specifications

Environmental	
Operating Temperature	32° to 104° F
Humidity	10% to 90% Relative Humidity (non-condensing)
Dimensions and Weight	
Height	12.17 inches (309.12 mm) with cover; 11.05 inches (280.67 mm) without cover
Width	15.48 inches (393.19 mm) with cover; 14.23 inches (361.44 mm) without cover
Depth	2.81 inches (71.37 mm) with cover; 2.71 inches (68.83 mm) without cover
Weight	8.75 lb / 4.0 kg
Power	
Power (Input Power)	24V AC (40 VA) from external transformer (sold separately)
Power Draw (Maximum)	CLI-8000 = 12W @ 24V AC
	CLI-8000A = 24W @ 24V AC
Cable Requirements	
Relay bank to HVAC system	#18 American Wire Gauge (AWG), (RH, RC, W1, W2, Y1, Y2, O, G, Aux **Note:** In some instances RH and RC can be jumped together.
Cable Requirements (Sensors)	
Data Sensor Bus	24 AWG (Cat 5) 600 feet (182.88 m) maximum (cumulative)
Remote Sensor	24 AWG (Cat 5) 500 feet (152 m) maximum
Compliance	
Safety and Emissions	FCC Part 15
RoHS	Compliant
Enclosure	
Metal enclosure, matte black with removable vented cover; CLI-8000A includes optional Android™ based tablet Mounting Options: Recess or Surface-mountable	
Additional Info	
RS-232	Baud Rate = 19200

HVAC Features and User Settings

Below is a list of settings supported on the CLI-8000 and CLI-8000A Thermostat Processing Unit. The settings are all configurable through either the keypad on the front panel or the Android™ based tablet installed in the front cover (CLI-8000A version).

HVAC Type

The two types of HVAC systems supported are:

- **Standard Gas/Electric** - Standard system with separate furnace and air conditioner for heating and cooling.
- **Heat Pump** - System uses a Heat Pump for heating and cooling.

HVAC Mode

Through the user interface on the thermostat, the HVAC mode can easily be changed to run in one of four modes:

- **Off** - Heat or cool cycles are not enabled
- **Cool** - Only cooling cycles are enabled
- **Heat** - Only heating cycles are enabled
- **Auto** - Both heat and cool cycles are enabled

Fan Type

How the fan functions is dependent on whether the system is calling for heat or cooling. Two fan type settings are supported:

- **Electric** - Fan relay activates for heating and cooling calls.
- **Gas** - Fan relay activates for cooling calls only.

Changeover Mode

The Changeover Mode (CO) supports the Heat Pump type systems only (The O relay controls the reversing valve). Two changeover modes are supported:

- **Heat** - The reversing valve can be set to supply heating or cooling. Set the CO mode to Heat when heating is desired.
- **Cool** - The reversing valve can be set to supply heating or cooling. Set the CO mode to Cool when cooling is desired.

Heat Stage 2, Heat Stage 3, Cool Stage 2

The TPU supports three stages of heat and two stages of cooling.

- Heat Stg 2 - Set to On if stage 2 heating is required. Set to Off if stage 2 heating is not required.
- Heat Stg 3 - Set to On if stage 3 heating is required. Set to Off if stage 3 heating is not required. Note: Stage 2 heating must be set to On for stage 3 heating to work.
- Cool Stg 2 - Set to On if stage 2 cooling is required. Set to Off if stage 2 cooling is not required.

When configuring a multistage heating system, the delta △ (increment or decrement) from the set point temperature can either be left at the default values or, can be modified from within the Stage Diffs menu. The table below displays the default values as well as the configurable range of differential temperatures.

Parameter	Setting	Temp Differential	Configurable Stage Differentials
Heat Stage 1 On	On	1.0°F	1.0°F to 8.0°F
Heat Stage 1 Off	Off	0°	0.0°F to 8.0°F
Heat Stage 2 On	On	2.0°F	1.0°F to 8.0°F
Heat Stage 2 Off	Off	0°	0.0°F to 8.0°F
Heat Stage 3 On	On	5.0°F	1.0°F to 8.0°F
Heat Stage 3 Off	Off	0°	0.0°F to 8.0°F
Cool Stage 1	On	1.0°F	1.0°F to 8.0°F
Cool Stage 1	Off	0°	0.0°F to 8.0°F
Cool Stage 2	On	3.0°F	1.0°F to 8.0°F
Cool Stage 2	Off	0°	0.0°F to 8.0°F

Note: Heat Stage 3 is supported **ONLY** when the system type is set to HP (Heat Pump).

H/C Differential (Heating/Cooling)

The Heating/Cooling differential is the minimum delta △ allowed between the heating and cooling set points. The default value is set to 3°F and is configurable between 3.0°F - 20°F.

Min Run(s)

Sets the minimum amount of time a stage must remain on, once it has been turned on. Once running, it will continue to run regardless of the room temperature. All subsequent stages are inhibited until the current stage Min Run Time (MRT) expires. The default value is 180 seconds (3 min) and is configurable from 60 to 540 sec (1 min to 9 min).

Min Off(s)

Sets the minimum amount of time a stage must remain off, once it has been turned off. At the end of a stage call, a MOT timer is triggered and the stage is prevented from starting again until the MOT expires. The default set is 300 seconds (5 min) and is configurable from 60 to 540 sec (1 min to 9 min).

Fan Purge

Fan Purge keeps the fan running after either a heating or cooling cycle has ended (high temp set-point reached). The default value is 0 seconds and is configurable from 0 to 120 seconds (0 to 2 min).

Fan Cycler

The fan in an HVAC system can be cycled On or Off periodically without any calls for heating or cooling. The HVAC Setting, **Fan Cycle On**, sets the amount of time the fan will run during this cycle. The HVAC Setting, **Fan Cycle Off**, sets the amount of time the fan will be off during this cycle. The default cycle time for both On and Off is 0 minutes. This is configurable from 0 - 120 minutes in 10 minute increments.

Max/Min DAT (Discharge Air Temperature)

The Discharge Air Temperature is the temperature being discharged out of the furnace. The default max temperature is set to 140°F and is configurable from 110°F to 160°F. The default Min is set to 40°F is configurable from 35°F to 160°F. If the temperature at the furnace discharge point goes out of range, the call for heat or the call for cool will be terminated but the fan will continue to run.

Cool Set Point

The Cool SP is the high temperature set point. If the temperature goes above this set point, the system will call for cooling.
The default is set to 75°F and can be adjusted up or down in 1°F increments.

Heat Set Point

The Heat SP is the low temperature set point. If the temperature goes below this set point, the system will call for heat. The default is set to 65°F and is adjusted up or down in 1°F increments.

Humidity Features and User Settings

The CLI-8000/8000A provides the capability to monitor, display and control the humidity in a room or zone. Humidity control is implemented by either extending the cooling cycles (HCL) or by controlling humidity equipment through the Auxiliary relay. The information below describes the settings that are configured from within the **Humidity Set** menu.

Humidity SP (Set Point)

The Hum SP sets the level of humidity desired within a zone. If the humidity varies from this set point, the system can turn on or turn off a Humidifier or Dehumidifier. The humidity level set point is adjusted up or down in 5% increments.

Auxiliary Relay

The Aux Relay can be used for switching any auxiliary equipment (Humidifiers, Dehumidifiers, Dampers, etc). The Aux relay consists of the C (Common), NC (Normally Closed), and NO (Normally Open) connections on the relay bank. The table below displays the various options available.

Option	Description
Off	Relay has no function
Hum (Humidifier)	Instructs the Auxiliary Relay to control an external humidification system. The output NO is the active port when the humidity level in the room is below the Relative Humidity Differential set point. In addition to turning on the humidity equipment, the system fan (blower) can also be configured to turn on with the Relay when the Auxiliary Fan Lock is enabled. (Humidity Set > Adv Humidity > AR Fan Lock.) **Note:** HVAC mode must be set to Heat or Auto and last call was for heat.
Dehumidifier	Instructs the Auxiliary Relay to control an external dehumidification system. The output NO is the active port when the humidity of the room is above the Relative Humidity Differential set point. The system fan (blower) can also be configured to turn on with the Relay when the Auxiliary Fan Lock is enabled. (Humidity Set > Adv Humidity > AR Fan Lock.) **Note:** HVAC mode must be set to Cool or Auto and last call was for cool.
Network	The selection Net will instruct the Auxiliary Relay to be controlled by the Savant System and the NO and NC outputs are active depending on certain triggers and workflows set in the Savant Software. The system fan can also be configured to turn on with the Relay when the Relay Fan Interlock is enabled.
Vent	The selection Vent will instruct the Auxiliary Relay to control an external vent damper. The output NO is active when the fan state is On and the Fan Cycler is active.
DH Fan Control	The Relay is assigned as an external dehumidification fan speed control output (DH) for use with air handlers having an external DH fan control input to slow fan speed during dehumidification. Relay is OFF during normal operation when RH level is below the RH set point. Relay is ON when RH level is above the RH set point. When the humidity rises above a certain point, the NO connection becomes active to turn on a DH Fan.
Zone	For controlling Mechanical Zone Dampers. Set the auxiliary relay to Zone if Zone groups are being configured.

Humidity Control Logic (HCL)

The Humidity Control Logic functionality works to extend a cool call if certain humidity and temperature conditions are met. The HCL functionality DOES NOT trigger a call for cooling. The functions described in the table below all have to do with the HCL functionality.

Parameter	Default Setting	Configurable Stage Differentials
Rh Tmp Diff	2°F	1°F - 6°F
Rh On Diff	2%	1 - 10 %
Rh Off Diff	2%	0 - 10 %
Rh On Time	30 minutes	0 - 60 minutes
Rh Off Time	30 minutes	0 - 60 minutes
AR Diff On	3%	1 - 10%
AR Diff Off	3%	0 - 10%
AR Fan Lock	Off	Off/On

Zone Grouping and Control

System zoning is a way to control the heating or cooling within each room. By splitting up a home or facility into separate zones, comfort and efficiency in the heating/cooling system can both be achieved. With system zoning, a system of remote sensors, vent dampers, and a main processor all work together to keep rooms you choose at comfortable levels while keeping the temperatures in other rooms not occupied or used as much at a cost efficient level.

In the Savant system, the CLI-8000/8000A Thermostat Processing Unit (TPU) communicates with a series of remote temperature and humidity sensors. If a set point in any room is exceeded the TPU will open the damper to that room and close the dampers to others so the cooling or heating is directed to the proper room.

The architecture of system zone grouping is such that one zone behaves as an equipment zone and all wiring from the TPU to the HVAC system is achieved through this zone. In addition to the equipment zone, up to three auxiliary zones can be configured and wired to various zone dampers. The combination of the Equipment Zone and auxiliary zones are referred to as a Group. The Savant System supports creating up to four Groups using any combination of equipment and auxiliary zones with maximum of four zones per Group.

When the system is configured and running, the equipment zone receives data from the sensors installed in each room. The data received tells the equipment zone which zones need to be heated or cooled. The equipment zone then determines which zone dampers to open, and which to close, to satisfy the temperature or humidity of each room.

In Zone Grouping, a state can arise where one zone is calling for heat and a second room is calling for cooling at the same time. When such a scenario arises, the CLI-8000/8000A incorporates a priority system which is configured by the user. Within the TPU, one of the following states can be configured:

- **CB4H** - Cooling Before Heat - The room that requires cooling will be satisfied first. After the zone has been satisfied, the system will then satisfy the heating call.
- **HB4C** - Heating Before Cooling - The room that requires heating will be satisfied first. After the zone has been satisfied, the system will then satisfy the cooling call.
- **Diff** - Differential from set-point - The room that is furthest away from its set-point will be satisfied first.

This priority system ensures that both rooms are eventually satisfied.

Remote Sensors

To allow for maximum flexibility in the design and wiring of an HVAC system, the CLI-8000/8000A supports connecting to various types of sensors within each zone. Each zone can communicate with up to four temperature sensors. The breakdown for any one zone is as follows:

Two Remote Sensors	Plugs into Remote Sensors connection on front panel of TPU.
Two CLI-THFM1 Smart Sensors	Wired to Data Sensor Bus. Two sensors are assigned to each Zone

The data from these sensors are received and processed in the TPU as either an average temperature, a maximum temperature, or a minimum temperature. Additional sensors are available to monitor the outdoor temperature, the furnace discharge temperature, or the slab temperature.

Similar to temperature, the TPU supports connecting and communicating with two humidity sensors per zone. As with the temperature sensors, these can also be combined to display an average, minimum, or maximum value. The breakdown for the humidity sensors are as follows:

Two CLI-THFM1 Smart Sensors	Wired to Data Sensor Bus. Two can be assigned to each Zone

Remote Temperature Sensors

On the front panel to the right of each relay bank are two Remote Sensor connections. Savant® offers four remote temperature sensors for use with the Remote Sensor connections. The available sensors are as follows:

- **SST-TEMP1** - A remote indoor temperature sensor that provides precision indoor temperature data. The sensor, about the size of a quarter, is flush mounted into an existing wall and is wired to the TPU using a Cat 5 or twisted pair cable. For more information on this sensor, refer to the Quick Reference Guide (009-0800-XX).
- **SST-OTEMP1** - A remote outdoor temperature sensor that provides precision outdoor temperature data. The sensor is surface mounted to the side of any building or structure and wired to the TPU using a Cat 5 or twisted pair cable. For more information on this sensor, refer to the Quick Reference Guide (009-0989-XX).
- **CLI-PLEN1R/C** - Both commercial (CLI-PLEN1C) and residential (CLI-PLEN1R) Plenum sensors are available to monitor the temperature at the discharge side of an HVAC furnace or air conditioning system. The sensor is mounted to the side of the plenum and wired to the TPU using a Cat 5 or twisted pair. For more information on these sensors, refer to the Quick Reference Guides (009-1096-XX, 009-1100-XX).
- **CLI-SLAB** - A remote temperature sensor providing precision floor temperature data. The CLI-SLAB can be used in various floor temperature sensing applications. Typical applications include but are not limited to heating floors using a radiant heating system. The sensor is wired to the TPU using a Cat 5 or twisted pair cable. For more information on this sensor, refer to the Quick Reference Guide (009-1097-XX).

Remote Temperature/Humidity Smart Sensor (CLI-THFM1)

The CLI-THFM1 Temperature/Humidity Smart Sensor is available for humidity and temperature monitoring. This sensor is a smart sensor and communicates on the Data Sensor Bus. Up to two CLI-THFM1 remote smart sensors can be configured to each zone with a maximum of eight per system. The sensors are wired using a Cat 5 twisted pair and are connected to the Data sensor Bus. Each CLI-THFM1 sensor can be configured to operate as either be an individual or averaging temperature and humidity sensor.

Temperature Sensor Functionality and Configuration

The remote temperature sensors can be used in a variety of applications. In addition to monitoring both indoor and outdoor temperatures, the TPU supports both a furnace Discharge Air Temperature sensor (DAT/Plenum) and a floor temperature sensor (SLAB). The chart below displays each of the sensors supported, where they connect, and how they connect to the system.

Front Panel	Sensors	Indoor	Outdoor	DAT	Slab	Communication Type
Remote Sensor 1 in each zone on front panel	• SST-TEMP1 • SST-OTEMP1 • CLI-SLAB1	Yes	Yes		Yes	Point to Point connection from the sensor to the TPU using two-wire Cat 5 twisted pair or equivalent.
Remote Sensor 2 in each zone on front panel	• SST-TEMP1 • SST-OTEMP1 • CLI-PLEN1R/C • CLI-SLAB1	Yes	Yes	Yes	Yes	Point to Point connection from the sensor to the TPU using two-wire Cat 5 twisted pair or equivalent.
DSB/1-Wire	• CLI-THFM1 #1 remote sensor	Yes				CLI-THFM1 sensor #1 uses three-wire cable to connect to the TPU. Sensor is wired to the Data Sensor Bus with a maximum of two per zone and a total of eight per system. **Note:** Sensor has both temperature and humidity. Humidity is described in table below.
DSB/1-Wire	• CLI-THFM1 #2 remote sensor	Yes				CLI-THFM1 sensor #2 uses a three-wire cable to connect to the TPU. Sensor is wired to the Data Sensor Bus with a maximum of two per zone and a total of eight per system. **Note:** Sensor has both temperature and humidity. Humidity is described in table below.

Humidity Sensor Functionality and Configuration

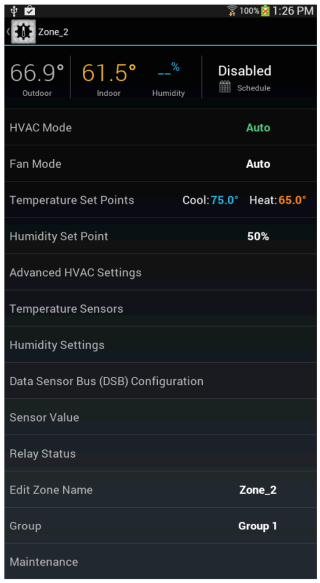
Humidity sensors are available that supply information required to control the humidity levels within a home or facility. The chart below displays each of the sensors supported, where they connect, and how they connect to the system.

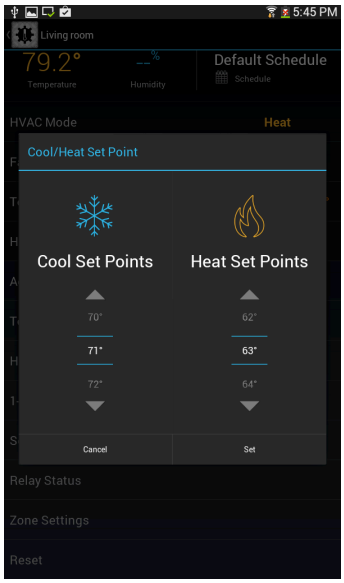
Front Panel	Sensors	Humidity	Communication Type
DSB/1-Wire	• CLI-THFM1 #1 remote sensor	Yes	CLI-THFM1 sensor #1 uses three-wire cable to connect to the TPU. Sensor is wired to the Data Sensor Bus with a maximum of two per zone and a total of eight per system. **Note:** Sensor has both temperature and humidity. Temperature is described in the temperature table above.
DSB/1-Wire	• CLI-THFM1 #2 remote sensor	Yes	CLI-THFM1 sensor #2 uses three-wire cable to connect to the TPU. Sensor is wired to the Data Sensor Bus with a maximum of two per zone and a total of eight per system. **Note:** Sensor has both temperature and humidity. Temperature is described in the temperature table above.

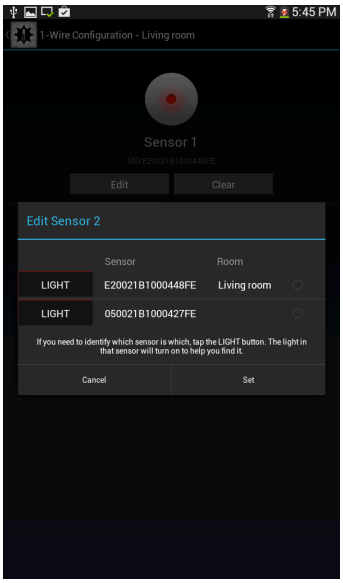
CLI-8000A

Included with the CLI-8000A Thermostat Processing Unit is all the functionality of the CLI-8000 along with an integrated tablet for Android™ installed into the front cover. The tablet along with its climate control application can be used for setting up, viewing, and controlling each climate zone independently.

Climate Screens







The screen captures shown above are a few examples of the climate screens from the tablet for Android™ to control and monitor the HVAC systems.

- The first climate screen above displays the main menu. This menu displays various set point information. From this menu, a user can tap into any of the fields displayed.
- In the middle screen, heating and cooling set-points are adjusted using the arrows. Once the desired set point is reached, click on the **set** button. To cancel and discard any changes, click on the **Cancel** button.
- The rightmost screen is where the sensors on the Data Sensor Bus are viewed and configured. By tapping the “LIGHT” button, the light on the physical sensors will light up to help identify the sensors. To select a sensor for the room, simply tap the radio buttons for that sensor.

Integration Features

The CLI-8000/8000A can be integrated into a complete Savant Control System. The Savant Control System includes screens for monitoring and controlling various climate data. The next couple of sections display some of the functionality included when integrated into a Savant Control System.

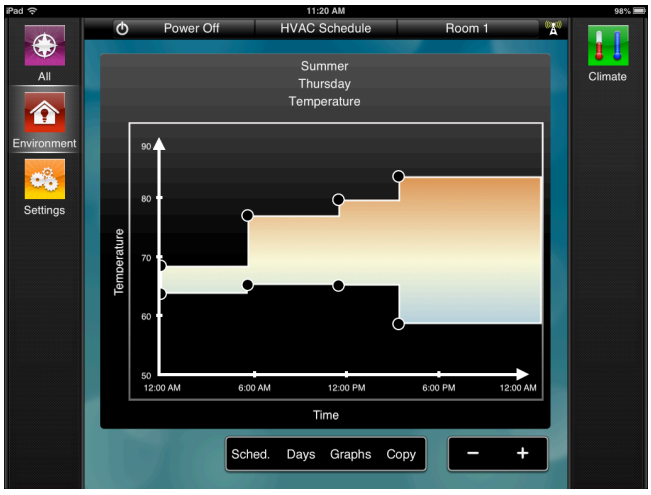
HVAC Control

The HVAC Control interface displayed below is used to control and monitor each separate zone. Below are a few features available through the TrueControl™ application.

- Monitor Real Time temperature and humidity data.
- Monitor when a heating or cooling stage is running.
- Monitor fan operation
- Control of various heating, cooling, and humidity set points.
- Monitor and control the various HVAC and fan modes.
- Monitor and control any schedules that have been configured

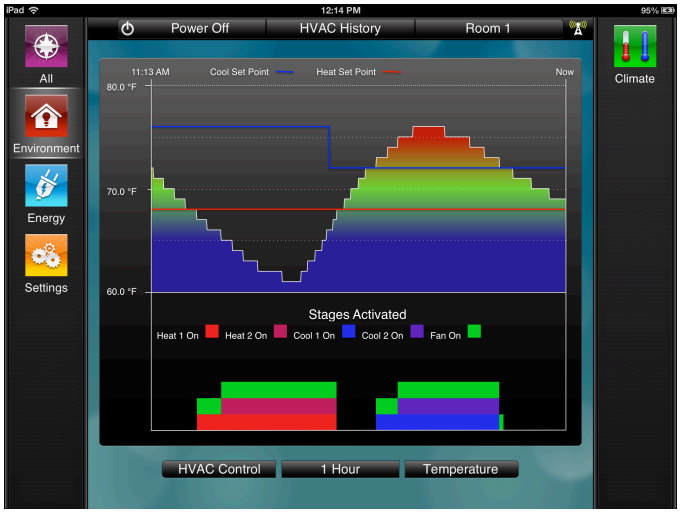
HVAC Scheduling through TrueControl™

The HVAC Scheduler allows an end user control of their HVAC system using an interactive scheduling system. Using the HVAC Schedule on your iPad®, up to four heating and four cooling set points are configured by simply dragging the set points to there respective high and low settings. This can all be configured for a specific day, week, season, or vacation.



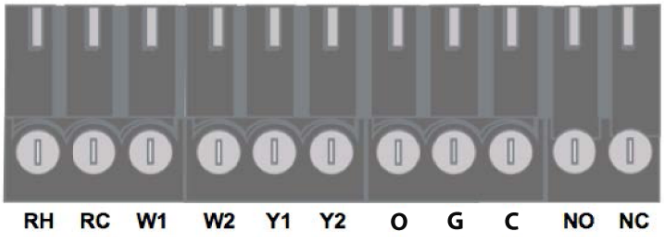
HVAC History

The HVAC History interface tracks the history of various climate data and presents it in simple readable graphs. Indoor temperature, outdoor temperature, and humidity are all tracked as well as when the heating, cooling, and fan operations are applied. The graphs are color coded for an easy and quick understanding of all operations within the HVAC system. The history data is available for up to one year.



HVAC Relays

Using the HVAC Relays within the CLI-8000/8000A, the system can be wired for either a standard Gas/Electric HVAC system or a Heat Pump type HVAC system.



HVAC Relays	Description
RH - Red	Wired to hot side of the 24V AC transformer on Heating Equipment.
RC - Red	Wired to hot side of the 24V AC transformer on Cooling Equipment.
W1 - White	Wired to stage 1 heat terminal (W1) on HVAC system.
W2 - Black	Wired to stage 2 heat terminal (W2) on HVAC system.
Y1 - Yellow	Wired to stage 1 cooling terminal (Y1) on HVAC system.
Y2 - Blue	Wired to stage 2 cooling terminal (Y2) on HVAC system.
O - Orange	Wired to (O) terminal on Heat Pump System. Reversing Valve connection.
G - Green	Wired to the fan terminal (G) on the HVAC system.
Aux Relay	C = Common Terminal NO = Normally Open, this terminal will be connected with C when the Aux Relay is ON. NC = Normally Closed, this terminal will be connected with C when the Aux Relay is OFF.

Included Items

The following components are included in each system.

Description	Quantity
CLI-8000 or CLI-8000A (Includes all mating connectors from front panel)	1
Samsung Galaxy Tab 3 seven inch tablet with USB cable (CLI-8000A only)	1
Quick Reference Guide (009-1090-XX)	1

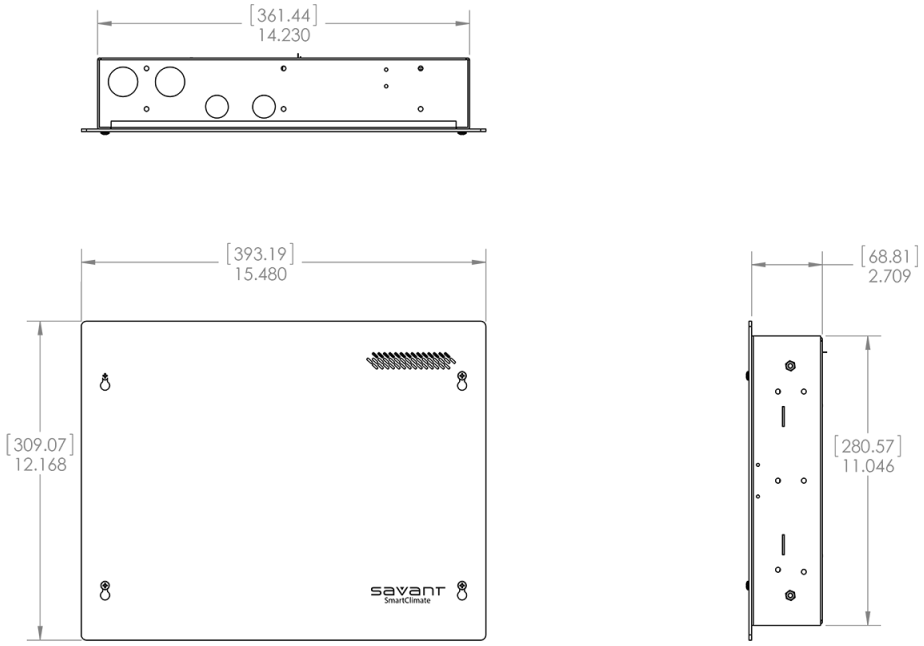
Related Components

The components below are all related to the Centralized Climate Control system.

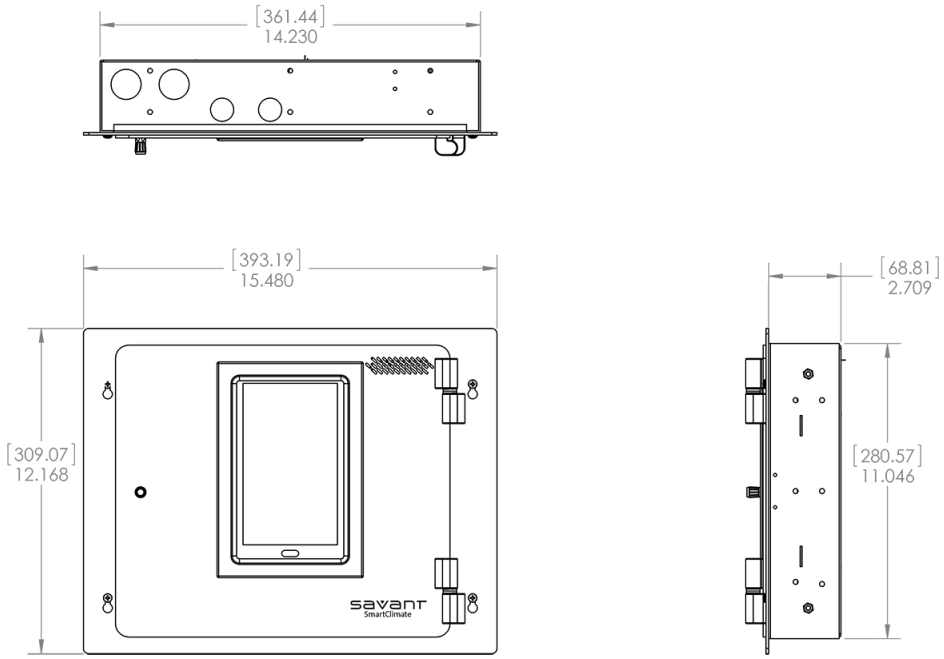
Description	Model Number
Savant® Host	HST-PRO1
Savant® Controller	SSC-0008-XX or SSC-0025-XX
External 24V AC Transformer	PWR-2440-XX
Optional Mounting Brackets	SMB-8000-XX
Savant® SST-TEMP1	Remote Indoor Sensor
Savant® SST-OTEMP1	Remote Outdoor Sensor
Savant® CLI-THFM1	Remote Humidity/Temperature Smart Sensor for Data Sensor Bus
Savant® CLI-PLEN1C	Commercial Plenum Sensor (Discharge Air Temperature Sensor)
Savant® CLI-PLEN1R	Residential Plenum Sensor (Discharge Air Temperature Sensor)
Savant® CLI-SLAB1	SLAB Sensor (Floor Heating Sensor)

Dimensions

The next figures show the dimensions of the CLI-8000 and CLI-8000A. The dimensions are displayed in both inches and millimeters.



Dimensions of the CLI-8000.



Dimensions of the CLI-8000A.