

SmartControl 25

SSC-0025 | SSC-P025

Deployment Guide

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Contents

To access the link to the topics in this document, click the topic text or topic page.




Important Safety Information - Read First	3
1. Introduction	5
Before You Begin.....	5
2. Deployment Steps	6
3. SmartControl 25 Overview	7
Front Panel	7
Rear Panel	8
4. Installation	9
Chassis Installation	9
Wiring and Connections	10
5. Blueprint Configuration	15
6. Additional Information	17
Appendix A: Document Revision History	18
Appendix B: Network Requirements	19

Important Safety Information - Read First

Before installing, configuring and operating Savant® equipment and other vendor equipment, Savant recommends that each dealer, installer, etc. access and read all the required technical documentation. Savant technical documentation can be located by visiting the **Savant Community**. Vendor documentation is supplied with the equipment.


Read and understand all safety instructions, cautions, and warnings in this document and the labels on the equipment.

Safety Classifications In this Document


Note:	Provides special information for installing, configuring, and operating the equipment.
 IMPORTANT!	Provides special information that is critical to installing, configuring, and operating the equipment.
 CAUTION!	Provides special information on avoiding situations that may cause damage to equipment.
 WARNING!	Provides special information on avoiding situations that may cause physical danger to the installer, end user, etc.

Electric Shock Prevention

 **ELECTRIC SHOCK!** The source power poses an electric shock hazard that has the potential to cause serious injury to installers and end users.

 **ELECTRICAL DISCONNECT:** The source power outlet and power supply input power sockets should be easily accessible to disconnect power in the event of an electrical hazard or malfunction.

Weight Injury Prevention

 **WEIGHT INJURY!** Installing some of the Savant equipment requires two installers to ensure safe handling during installation. Failure to use two installers may result in injury.

Safety Statements

Follow all of the safety instructions listed below and apply where applicable. Additional safety information will be included where applicable and listed below.

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. To completely disconnect this equipment from the AC mains, disconnect the power supply cord plug from the AC receptacle.

1. Introduction

This Deployment Guide will guide the installer through the process of installing, configuring, and adding a SmartControl 25 to a Blueprint configuration.

Before You Begin

Read through this document in its entirety and ensure that the following required items are available:

- SmartControl 25 Controller (SSC-0025 or SSC-P025).....
- Unique ID (UID) and MAC Address of the controller.....
(located on the bottom of the unit)
- Savant Host (Smart or Pro Host) licensed and running da Vinci 4.3.3 or higher
- Savant Development Environment (SDE/MacBook®).....
(with RacePoint Blueprint da Vinci 4.3.3 or higher installed)
- Ethernet network meeting Savant requirements.....
(see [Appendix B: Network Requirements](#))

2. Deployment Steps

Follow these steps to successfully deploy a SmartControl 25 Controller. This page can be used as a checklist to record which steps have been completed.

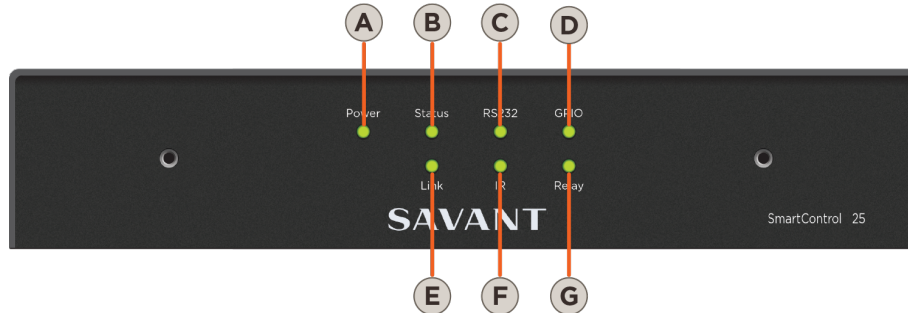
1. Review product specifications and connection details.....
See [SmartControl 25 Overview](#).
2. Install the SmartControl 25 in the system.....
See [Installation](#).
3. Add the SmartControl 25 to a Blueprint configuration.....
See [Adding the SmartControl 25](#).

3. SmartControl 25 Overview

SSC-0025 and SSC-P025 Box Contents and Specifications

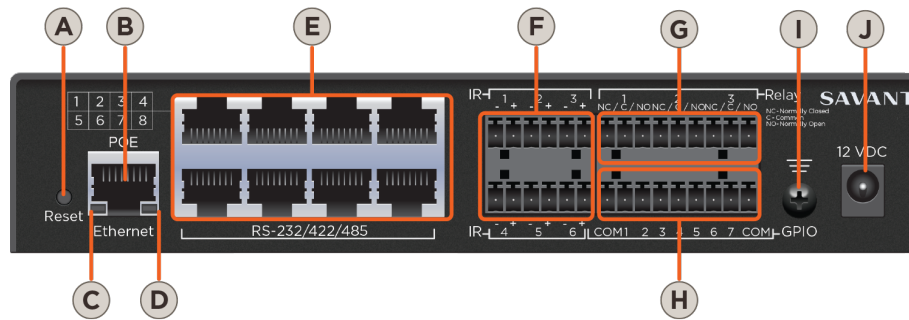
Refer to the Quick Reference Guide for this product located on the **Savant Customer Community** for Box Contents and Specifications.

Front Panel



A Power LED	Green: SSC-P025 has adequate power and is operating normally. Off: SSC-P025 is not receiving power.
B Status LED	Green: Controller is operating normally. Green Flashing: Controller has a DHCP or static IP Address. Connecting to host. Off: Unit is rebooting Red: Firmware update has failed and unit will be rebooted. Red Flashing: No IP Address/Connecting to Network. Amber: Firmware update in process. Amber Flashing: Controller has a link-local IP Address and is connecting to the host. This applies to controllers that are not connected to an active router and may be connected directly to a host. Hardware Failure Status LED indication will be interrupted every 3 seconds with a solid Red indication. For example, if the LED is flashing Green when a hardware failure occurs, the LED will flash Green , solid Red , etc., in 3 second intervals.
C RS-232 LED	Green: RS-232/422/485 serial port activity. Off: No RS-232/422/485 serial port activity.
D GPIO LED	Green: GPIO port activity. Off: No GPIO port activity.
E Link LED	Green: Ethernet port activity. Off: No Ethernet port activity.
F IR LED	Green: IR port signal activity. Off: No IR port activity.
G Relay LED	Green: Relay port activity. Off: No Relay port activity.

Rear Panel



A Reset Button	Press and hold for 5 seconds while powered On to clear network settings. Status LED will blink rapidly when reset is complete.
B PoE/Ethernet	8-pin RJ-45 female. 10/100 Base-T auto-negotiating port with Link/Activity LEDs: See items C and D for LED functionality. Supports Power over Ethernet using PoE IEEE 802.3af on SSC-PO25-xx only.
C Link LED	Off: Ethernet link is not established. Green: Ethernet link is established. Green Blinking: Ethernet activity is occurring.
D Data Rate LED	Off: 10 Mbps data rate Green: 100 Mbps data rate
E RS-232/ RS-422/ RS-485	8-pin RJ-45 female. Used to transmit and receive serial binary data to and from serial controllable devices. Ports 1-4 RS-232/422 - CTS/RTS handshaking. Ports 5-8 RS-232/RS-422/RS-485 - CTS/RTS handshaking. CTS/RTS Handshaking availability based on component profile. See RS-232/422/485 Wiring for pinouts.
F IR	6-pin Screw Down Plug-in Connector. Used to send IR signals to control devices with an IR input or IR receiver via an IR flasher (5V tolerant only). See IR Wiring for important precautions regarding IR functionality before making any connections.
G Relay	9-pin Screw Down Plug-in Connector. See Relay Wiring for pinouts. Normally Open (NO) Normally Closed (NC) to control devices requiring basic on/off operation. DC Voltage Max: 30V DC 1A.
H GPIO	9-pin Screw Down Plug-in Connector. See GPIO Wiring for pinouts. GPIO Input: When configured as an input, the processor will look for a low (<0.8V DC) or a high (>2.4V DC) state. Minimum 0V DC / Maximum 12V DC GPIO Output: When configured as an output, the port provides a binary output of 0-12V DC 150mA max.
I ⏏	Ground Connector - used to connect to a suitable ground reference when using Power over Ethernet (PoE).
J Power Input	12V DC 1.25A - Connect to power supply when not using PoE.

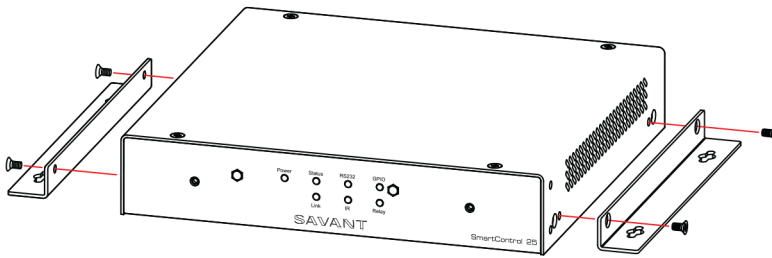
4. Installation

Chassis Installation

The SmartControl 25 can be placed on a 1U rack shelf, wall mounted using the side-mounting brackets SMB-1000-xx or rack mounted using the rack mount brackets RMB-0025-xx.

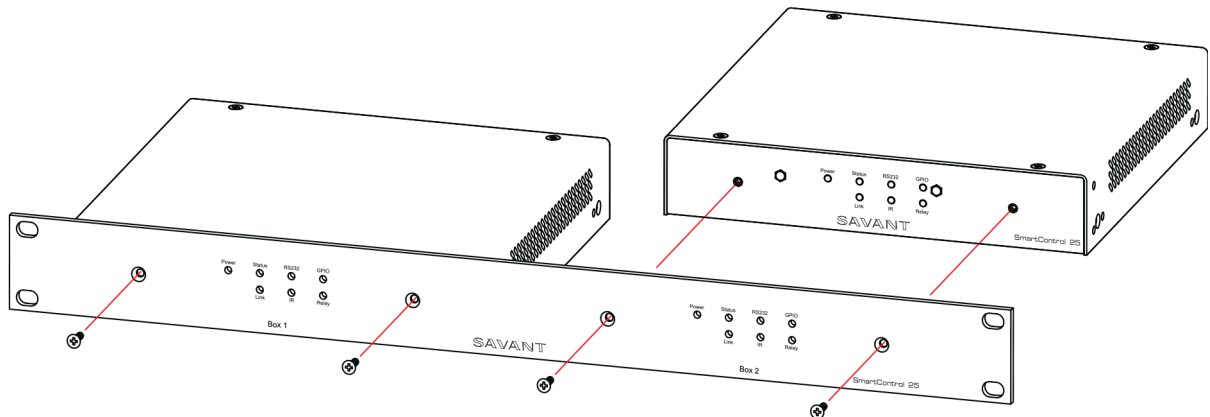
Wall Mounting (SMB-1000-xx)

Use the supplied screws to install the brackets to the SmartControl 25 as shown.



Rack Mounting Bracket (RMB-0025-xx)

Use the supplied screws to install the faceplate to the SmartControl 25 as shown.

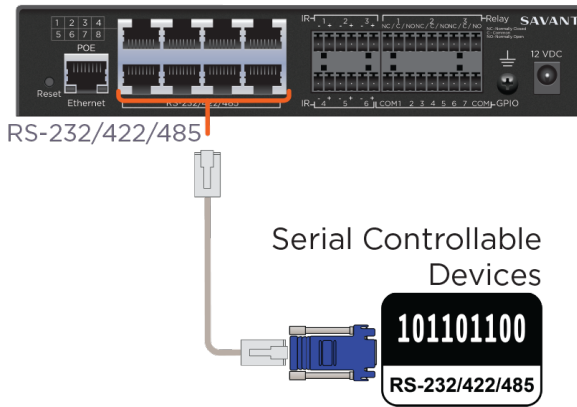


Wiring and Connections

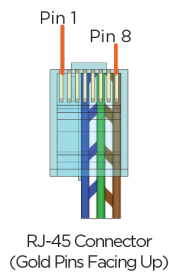
RS-232/422/485 Wiring

When making connections, label the cables with the source and destination. This will make modifications and troubleshooting easier.

SmartControl 25



RS-232 Pinouts



RJ-45 Connector
(Gold Pins Facing Up)

Pin 1: -----	Pin 5: RXD (RS-232)
Pin 2: -----	Pin 6: TXD (RS-232)
Pin 3: -----	Pin 7: CTS (RS-232)
Pin 4: GND (RS-232)	Pin 8: RTS (RS-232)

- Pins 7 & 8 are only required for CTS/RTS handshaking.

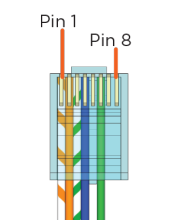
- Wire coloring is included to identify the pins used for this connection. Colors shown do not represent any wiring standard.

⚠ IMPORTANT! When wiring to this port, DO NOT connect any wires within the cable that are not required for communication.

Note:

CTS/RTS Handshaking availability based on component profile.

RS-422/RS-485 Pinouts



RJ-45 Connector
(Gold Pins Facing Up)

Pin 1: RS+ (RS-422/485)	Pin 5: -----
Pin 2: RS- (RS-422/485)	Pin 6: TX- (RS-422/485)
Pin 3: TX+ (RS-422/485)	Pin 7: -----
Pin 4: GND (RS-422/485)	Pin 8: -----

- Wire coloring is included to identify the pins used for this connection. Colors shown do not represent any wiring standard.

⚠ IMPORTANT! When wiring to this port, DO NOT connect any wires within the cable that are not required for communication.

RJ-45 to DB9 Adapters

Savant offers RJ-45 to DB9 adapters in a variety of configurations that can be used for RS-232/422/485 control.

Refer to the **RS-232 Conversion to DB9 and RS-422/485 Pinout Application Note** located on the **Savant Community** for more information on RJ-45 to DB9 adapters.

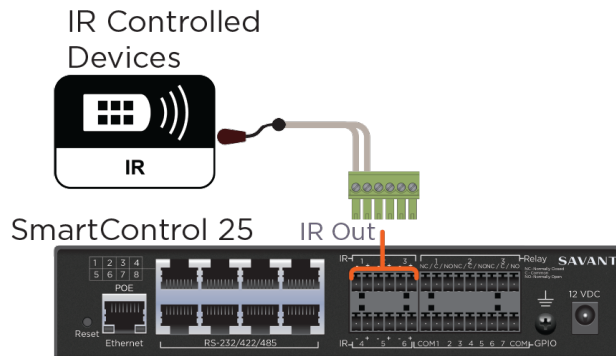


IMPORTANT! If you are using RJ-45 to DB9 adapters not supplied by Savant:

- Ensure that any wires required for communication/control are terminated within the adapter.
- Ensure that all wires NOT required for communication/control are NOT terminated in the connector.
- Ensure that the unused wires in the connector are cut to prevent them from shorting out, as they are still terminated in the RJ-45 connector on the controller side.

IR Wiring

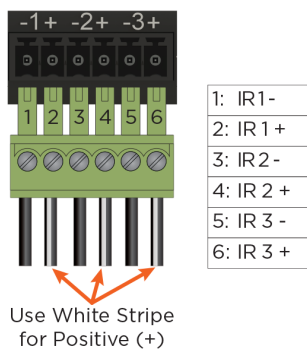
IR connections are made using 6-pin Screw Down Plug-in Connectors supplied with controller. The wire slips into the hole and locks with the screw located at the top of the connector.



⚠ IMPORTANT! IR Wiring Precautions

- Ensure that all IR emitters are within 15 feet (4.6 meters) from the location of the controller.
- Use of 3rd party flashing IR emitters with Talk Back is not recommended. These types of emitters can draw voltage away from the IR signal that can degrade IR performance.

IR Pinout



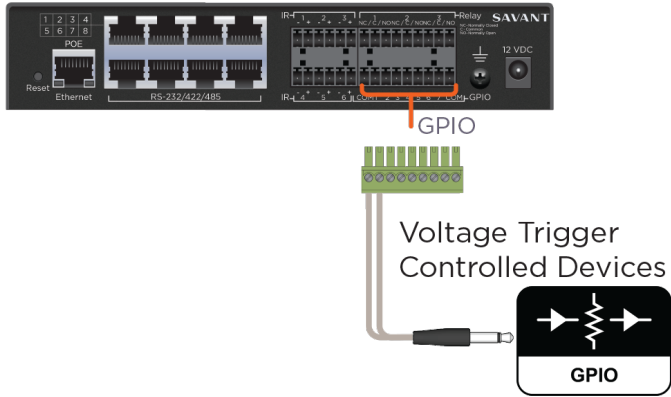
Note:

While not shown in the diagram above, IR connections 4 to 6 follow the same wiring as 1 to 3.

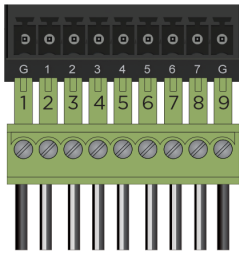
GPIO Wiring

General Purpose Input/Outputs (GPIO) are binary I/O ports used on Savant controllers to trigger an action within the system. Events can control a device, such as turning on an amplifier (output) or detecting a state change for a device (input) to perform a workflow. Pins 2-8 are used for input or output depending on configuration.

SmartControl 25



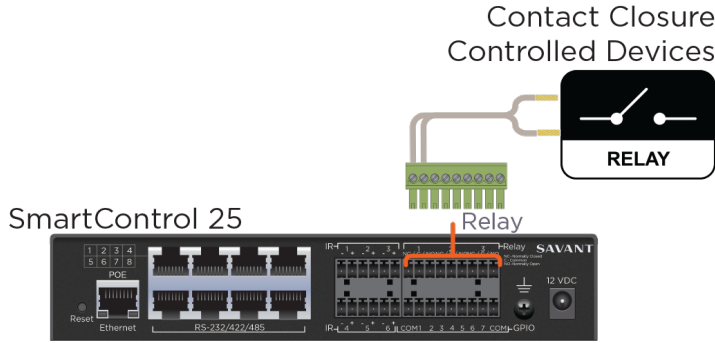
GPIO Connector Pinout



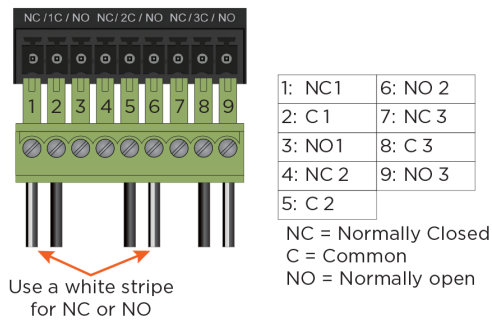
1: GND	6: GPIO 5
2: GPIO 1	7: GPIO 6
3: GPIO 2	8: GPIO 7
4: GPIO 3	9: GND
5: GPIO 4	

Relay Wiring

Relay ports are used when a device is controlled via a normally open (NO) or normally closed (NC) relay.



Relay Pinout



5. Blueprint Configuration

A basic configuration for the SmartControl 25 may contain some or all of the following components. Some devices are required, others may be omitted or substituted for a device appropriate for the configuration.

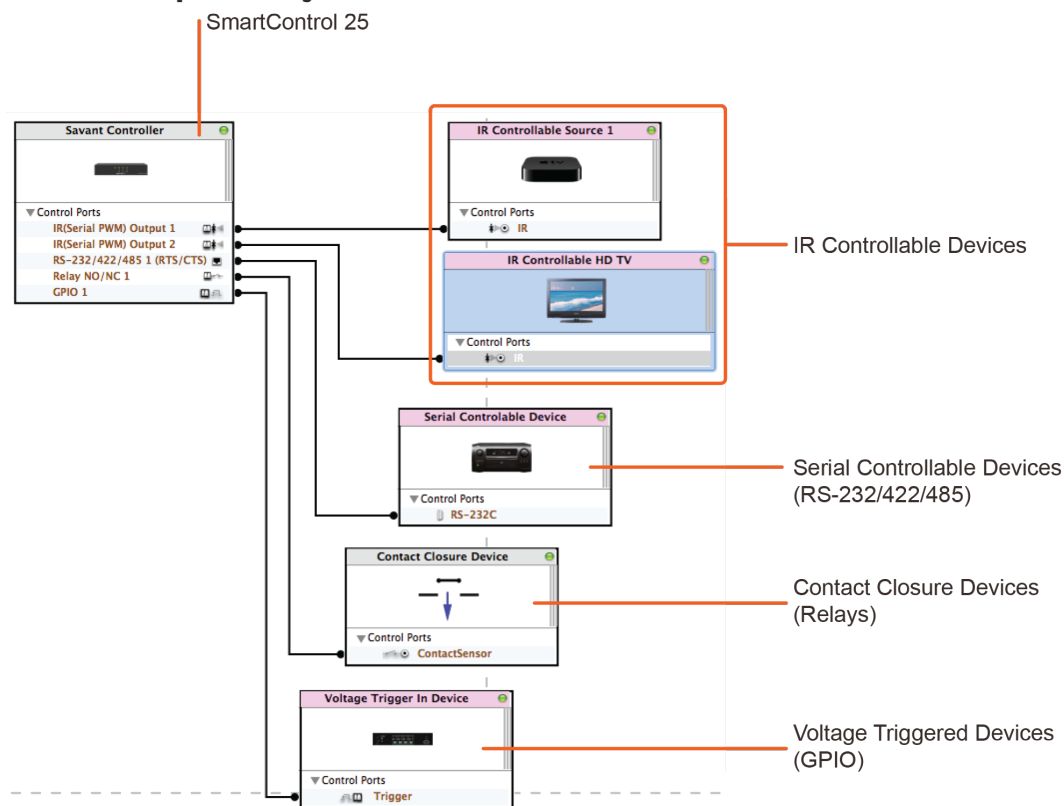
Required Devices

- SmartControl 25 (SSC-0025 or SSC-P025)
- Savant Host (Smart or Pro Host)

Optional Devices

- IR Controllable Devices
- Serial (RS-232/422/485) Controllable Devices
- Contact Closure (Relay) Controllable Devices
- Voltage Trigger (GPIO) Controllable Devices

Basic Blueprint Layout



Adding the SmartControl 25

1. Create the rooms for the system.
To make placement of components a smooth and quick process, we recommend that all rooms be created as a first step. This will allow for components to be placed in the rooms as they are added to the layout.
2. Add the SmartControl 25 to the configuration.

- A. Open the Component Library:
View > Show Component Library from the tool bar.
or



Show Library icon on the **Menu Bar**.

- B. Enter **SmartControl** in the search box.
- C. Select the SmartControl 25 in the Component Library and drag it onto the configuration.
If using an existing configuration, remove the component that the SmartControl 25 is replacing.
- D. Enter a unique name for the component and click **Create**.



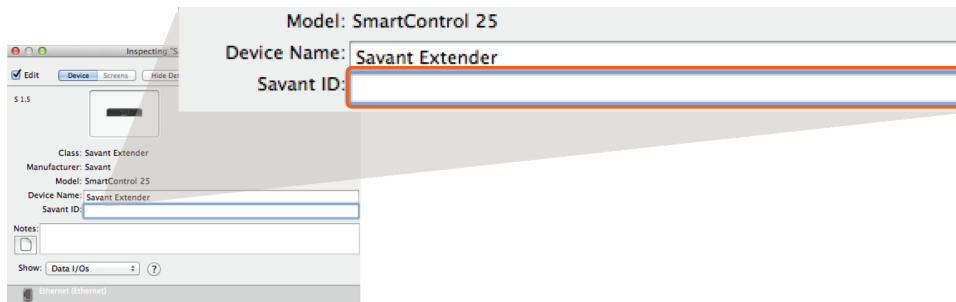
3. Enter the Unique ID (UID) for the the SmartControl 25.
In order to be recognized by the host, the **UID** located on the bottom of the SmartControl 25 is required within Blueprint.

- A. Select the SmartControl 25 in the configuration and open the **Inspector**:
View > Show Inspector from the tool bar.
or



Show Inspector icon on the **Menu Bar**.

- B. Enter the UID for the SmartControl 25 being used in the system.



4. Add other devices to the configuration as needed. Refer to the appropriate Deployment Guide to add other Savant devices.

6. Additional Information

Refer to the following documents located on the **Savant Community** for additional information.

- SmartControl 25 Controller (SSC-0025-xx) Quick Reference Guide
- SmartControl 25 Controller (SSC-P025-11) Quick Reference Guide

Appendix A: Document Revision History

009-0395-04 - October 2015

Section	Update
SmartControl 25 Overview	Removed Box Contents and Specifications and referenced the QRG in the Savant Customer Community .

009-0395-03 - April 2015

Section	Update
SmartControl 25 Overview	Added SSC-P025-11 information
All	Updated content for improved clarity of the subject

Appendix B: Network Requirements

Savant requires the use of business class/commercial grade network equipment throughout the network to ensure the reliability of communication between devices. These higher quality components also allow for more accurate troubleshooting when needed.

Device Network Connections

Connect all Savant devices to the same local area network (LAN) or subnet as the host. Savant recommends not implementing any type of traffic or packet shaping in your network topology for the Savant devices as this may interfere with performance.

Managing IP Addresses

To ensure that the IP Address will not change due to a power outage, a static IP Address or DHCP reservation should be configured. Savant recommends using DHCP reservation within the router. By using this method, static IP Addresses for all devices can be managed from a single UI avoiding the need to access devices individually.

Setting a Static IP Address

Refer to the **Retrieving and Setting IP Addresses for Savant Devices - Application Note** located on the **Savant Community**.

Setting DHCP Reservation

Setting DHCP reservation varies from router to router. Refer to the documentation for the router to configure DHCP reservation.

Network Changes

Savant recommends performing one of the following steps to refresh the IP connection after connecting to a new network, changing routers, or if the IP Address range is changed in the current router. This will reset any IP connection and ensure that the host is communicating with the network correctly.

Cycle Power

1. Disconnect the controller from the DC power source.
2. Wait 15 seconds and then reconnect.

Hot Plug the Ethernet (LAN) Connection

1. Disconnect the Ethernet (LAN) connection from the controller.
2. Wait 15 seconds and then reconnect.

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