SAVANT

Savant® SmartControl 14 Controller
SSC-0014

Deployment Guide

Document Number: 009-1272-01
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Document Supports: da Vinci 7.0

Contents

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

1. Introduction

This Deployment Guide will guide the installer through the process of installing, configuring, and adding a SmartControl 14 (SSC-0014) controller.

Before You Begin

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

SmartControl 14 (SSC-0014) controller .... ☐

Unique ID (UID) of the controller .... ☐
(located on the bottom of the unit)

Savant Host (Smart or Pro Host) licensed and running da Vinci 7.0 or higher .... ☐

Savant Development Environment (SDE) MacBook® .... ☐
(with RacePoint Blueprint® da Vinci 7.0 or higher installed)

Ethernet network meeting Savant requirements .... ☐
(see Network Requirements)

2. Deployment Steps Checklist

Follow these steps to successfully deploy the SmartControl 14 (SSC-0014) controller. This page can be used as a checklist to record which steps have been completed.

1. Review the SSC-0014 Connections and Controls...☐
    See SmartControl 14 Overview

2. Mount Controller ....☐
    See Installation

3. Wire Controller to Savant Controller System..☐
    See Wiring and Connections

4. Add the SSC-0014 to a RacePoint Blueprint configuration ....☐
    See RacePoint Blueprint Configuration

5. Upload Configuration to Savant Host..☐
    See Upload Configuration

3. SmartControl 14 Overview

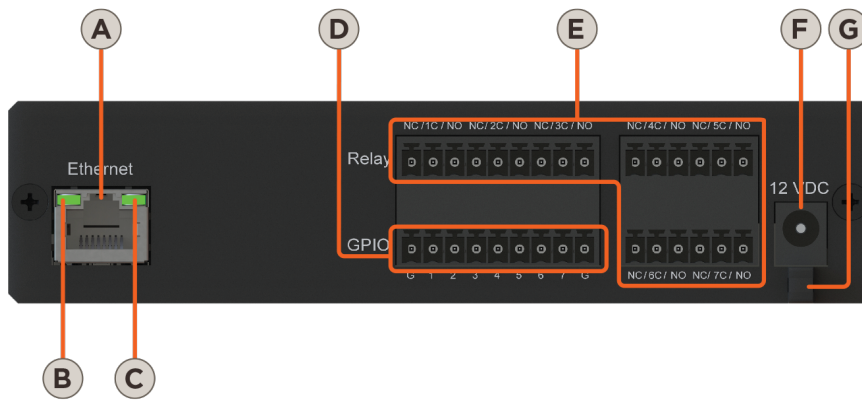## Box Contents and Specifications

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

Front Panel

A	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	Status LED	**Blinks Once:** No IP Address **Blinks Twice:** Waiting for Host Connection **Blinks Three Times:** Host Connection Lost **Solid:** Connected to Host

Rear Panel

|		
(A)	Ethernet	10/100 Base-T auto-negotiating port with Link/Activity LEDs: 8-pin RJ-45 female. See items B and C for LED functionality.
(B)	Link LED	**Off:** Ethernet link is not established. **Green Solid:** Ethernet link is established. **Green Blinking:** Ethernet activity is occurring.
(C)	Data Rate LED	**Off:** 10 Mbps data rate **Green:** 100 Mbps data rate
(D)		GPIO (General Purpose Input and Output Ports) 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 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.
(E)		Normally Open / Normally Closed - Relays 6-pin Screw Down Plug-in Connector (Right 3 Pins) See Relay Wiring for pinouts.
	Relay	Dry contacts (open/closed) to control devices requiring basic on/off operation. DC Voltage Max: 30V DC 1A 1-3: 9-pin Screw Down Plug-in Connector 4-5: 6-pin Screw Down Plug-in Connector 6-7: 6-pin Screw Down Plug-in Connector
(F)	Input Power	12V DC 1.6A - Connect to included power supply.
(G)	Cable Lance	Use with included cable tie to secure power supply connection.

4. Installation

The SSC-0014 should be located in a place that is dry, well ventilated, and out of direct sunlight.

Mounting Plate Installation

A mounting plate (074-0577-xx) is supplied with the SSC-0014 controller. This mounting plate is used to mount the controller to a wall or existing structure. To mount the controller, follow the instructions below.

1. Position the mounting plate onto the wall where the controller will be located. Position the bracket so the tabs that hold the controller are positioned horizontally.
2. Mark the two mounting holes on the wall.
3. Install wall anchors and screw mounting plate to the wall.
4. Snap the SSC-0014 controller into the bracket so the tabs on the mounting bracket seat into the slots on the side of the controller.
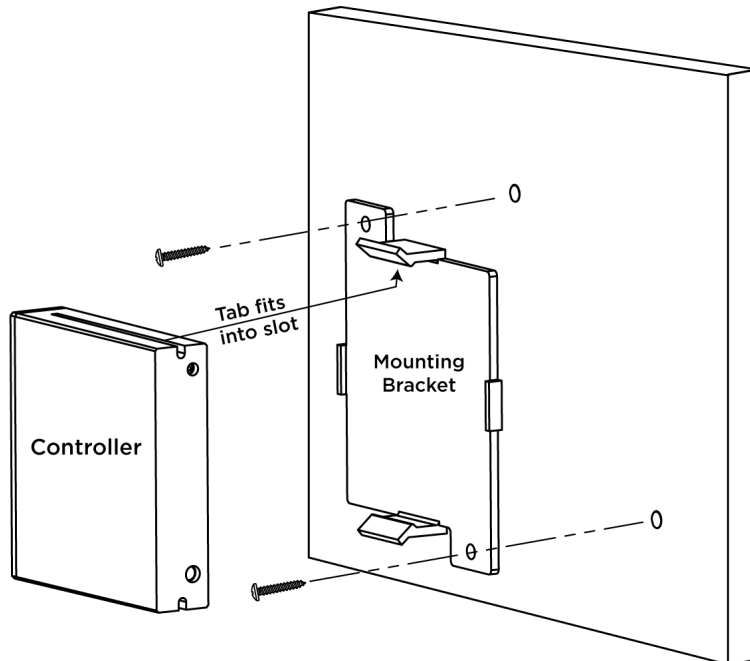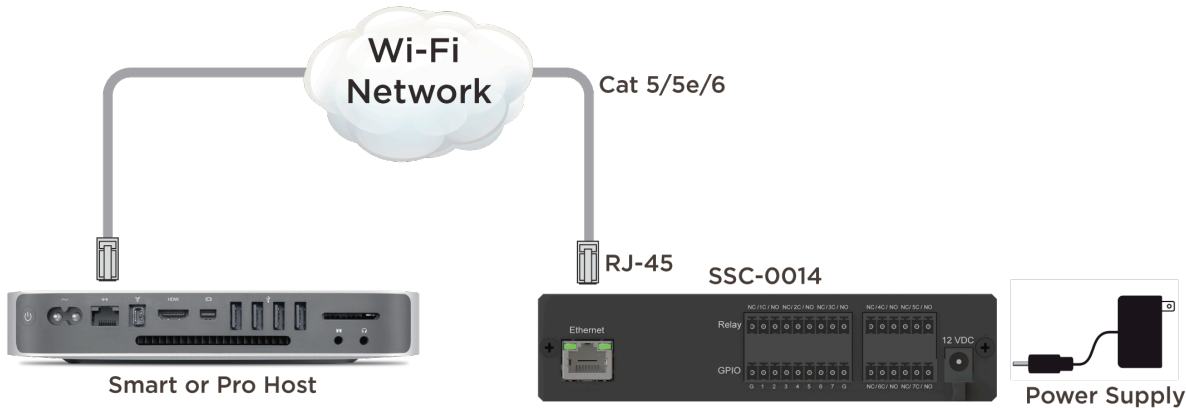

Rack or Cabinet Installation

When mounting in a rack or cabinet, the controller should be set on a solid, flat, level surface.

The next step is to connect the required ports. Refer to the Wiring and Connections section below.

5. Wiring and Connections

Refer to the diagrams below when making connections.

Power and Ethernet

1. Connect RJ-45 Cat 5/5e/6 Ethernet cable from Ethernet port to the local network switch.
2. Plug the supplied power supply from the 12V DC port to a 120 VAC surge protected outlet.

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 1-9 are used for input or output depending on configuration.
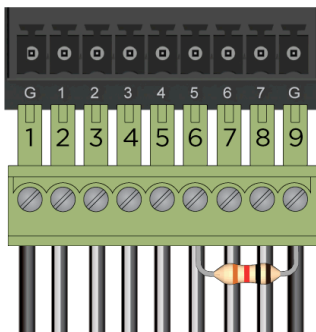
GPIO 1/2/3/4/5/6/7
9-pin Screw Down Plug-in Connector
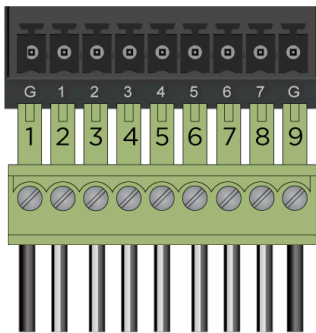
1: GND	6: GPIO 5
2: GPIO 1	7: GPIO 6
3: GPIO 2	8: GPIO 7
4: GPIO 3	9: GND
5: GPIO 4	

GPIO Pull Down Resistor Usage (Option)

The GPIO pins are by default configured as inputs and pulled high to 12V while the host is booting up. To pull the GPIO signal low during a host reboot and/or a power cycle, a 1k ohm resistor can be connected between a GPIO pin and ground (GND). Doing this will keep the GPIO output below 0.8V while host is rebooting.

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	

Note: This functionality is supported on all GPIO Ports (1-7)
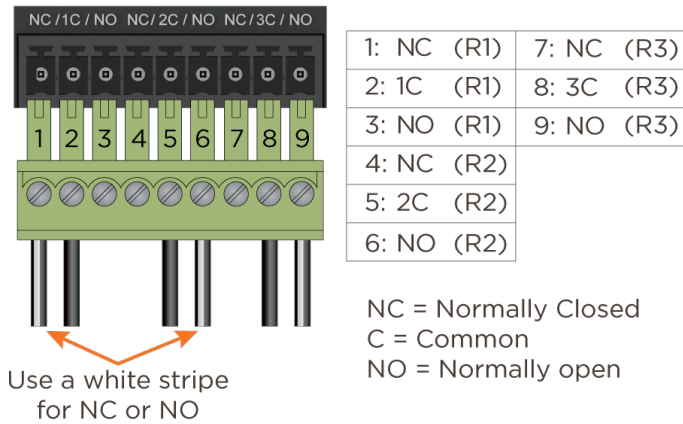
Pull Down resistor (1kΩ)
between GPIO 6 and Gnd

Relay Wiring

Relays are used when a contact closure (normally open or normally closed) is needed to activate a device such as raising or lowering shades, opening or closing a gate, etc.
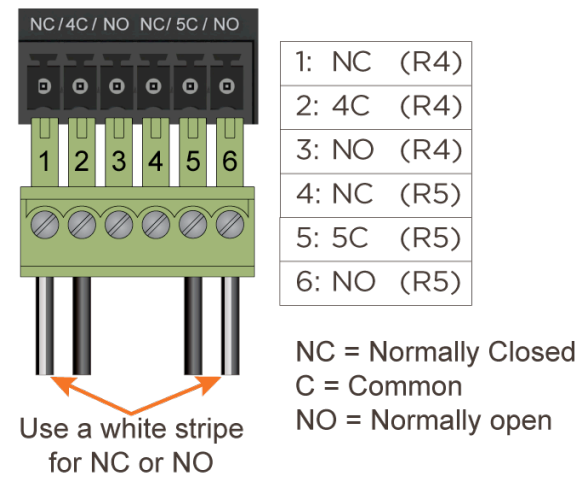
Relays 1/2/3
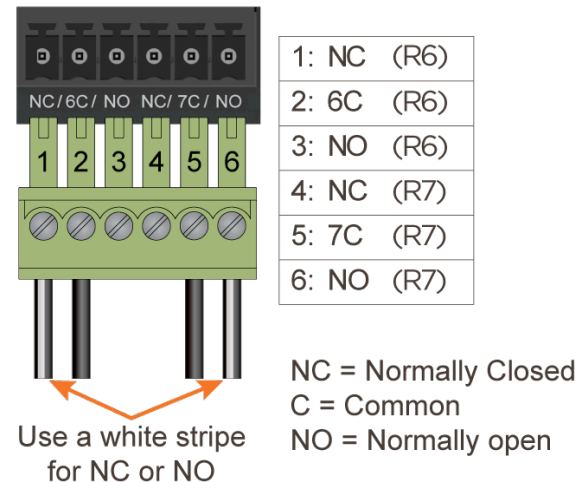
9-pin Screw Down Plug-in Connector

Pin			Pin		
1:	NC	(R1)	7:	NC	(R3)
2:	1C	(R1)	8:	3C	(R3)
3:	NO	(R1)	9:	NO	(R3)
4:	NC	(R2)			
5:	2C	(R2)			
6:	NO	(R2)			

NC = Normally Closed
C = Common
NO = Normally open

Use a white stripe for NC or NO

Relays 4/5

6-pin Screw Down Plug-in Connector

Pin		
1:	NC	(R4)
2:	4C	(R4)
3:	NO	(R4)
4:	NC	(R5)
5:	5C	(R5)
6:	NO	(R5)

NC = Normally Closed
C = Common
NO = Normally open

Use a white stripe for NC or NO

Relays 6/7

6-pin Screw Down Plug-in Connector

Pin		
1:	NC	(R6)
2:	6C	(R6)
3:	NO	(R6)
4:	NC	(R7)
5:	7C	(R7)
6:	NO	(R7)

NC = Normally Closed
C = Common
NO = Normally open

Use a white stripe for NC or NO

Making Connections

1. Remove Power if power is applied.
2. Pull to remove the terminal block from the rear of the controller.
3. With a small flat bladed screwdriver, turn the screws on the top of connector counterclockwise until the silver crimps in the front of the connector opens enough to slide the wires into the square slots.
4. Insert one of the stripped wires from the device being controlled into its respective slot in the connector. Refer to the diagrams.
5. Turn the screw clockwise until the screw tightens around the wire. Tug on the wire a bit to verify it is installed securely. Do not allow more than 1/2 inch of stripped wire exit from the rear of the connector.
6. Repeat for each wire till all wires are installed in that connector.
7. Repeat steps above for all connectors as required.
8. Plug terminal blocks back into rear of the controller.
9. Reapply power.

6. RacePoint Blueprint® Configuration

Add the SmartControl 14 controller to the configuration

1. From the RacePoint Blueprint menu bar, open the Component Library.
   View > Show Component Library.

2. Enter **SSC-0014** in the search box.

3. Select the **SSC-0014** from the **Component Library** and drag it into one of the zones/rooms.

Note: Controllers are typically added to the Shared Equipment Zone but not required.

4. Drag the **SSC-0014** into the RacePoint Blueprint layout window. If using an existing configuration, remove the component that the SSC-0014 is replacing.

5. Select the **SSC-0014** and open the inspector.
   View > Show Inspector

6. Enter the SmartControl 14 Unique ID (UID) for the SSC-0014 being used in the system. In order to be recognized by the Host, the UID located on the bottom of the SmartControl 14 is required within Blueprint.
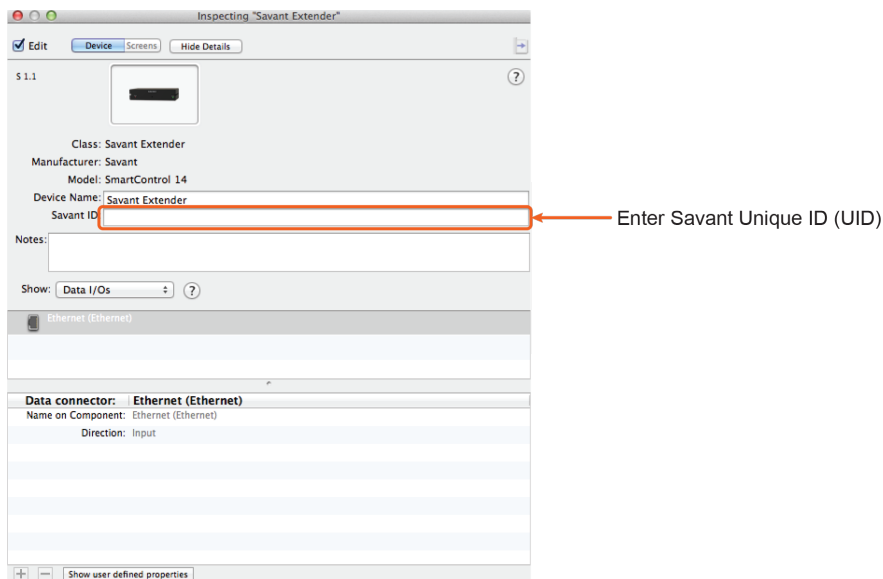
7. Close the Inspector.

8. Connect the Ethernet port of the SSC-0014 to the local network device.
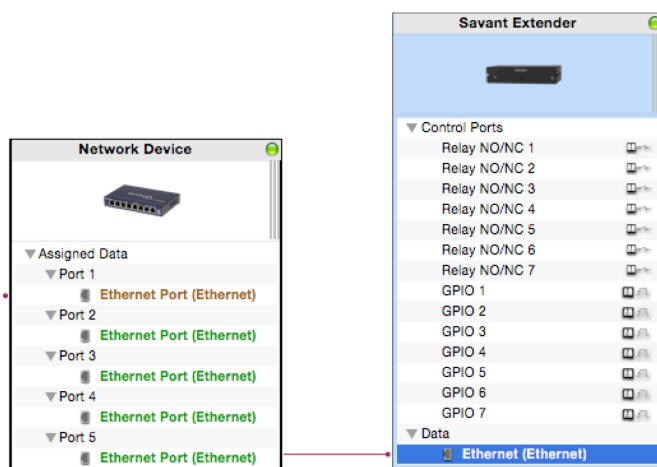
9. If any of the Control Ports on the SSC-0014 are to be controlling other equipment, the profiles for these devices can be found in the RacePoint Blueprint Component Library. Add this equipment and connect to the appropriate Control Port (GPIO, Relay).

   Refer to the **Relay and General Purpose Input/Output Profiles Application Note - 009-0482-xx** on the **Savant Customer Community** for details on using these profiles.

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7. Upload Configuration

After the SSC-0014 has been added to Racepoint Blueprint and the configuration is complete, it needs to be uploaded to the host.

1. Save the configuration.
   Select **File > Save** from the Blueprint menu bar.

2. Select the **Generate Services** icon in the Blueprint toolbar. The State icon on the Blueprint toolbar will change to green indicating the services for the configuration were created.

3. To upload the configuration, select the **Upload to Master** icon from the Blueprint toolbar and send the configuration to the host.
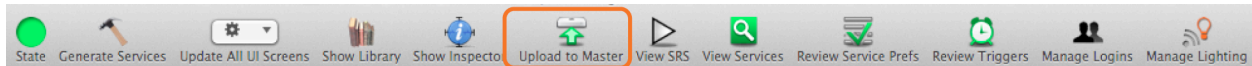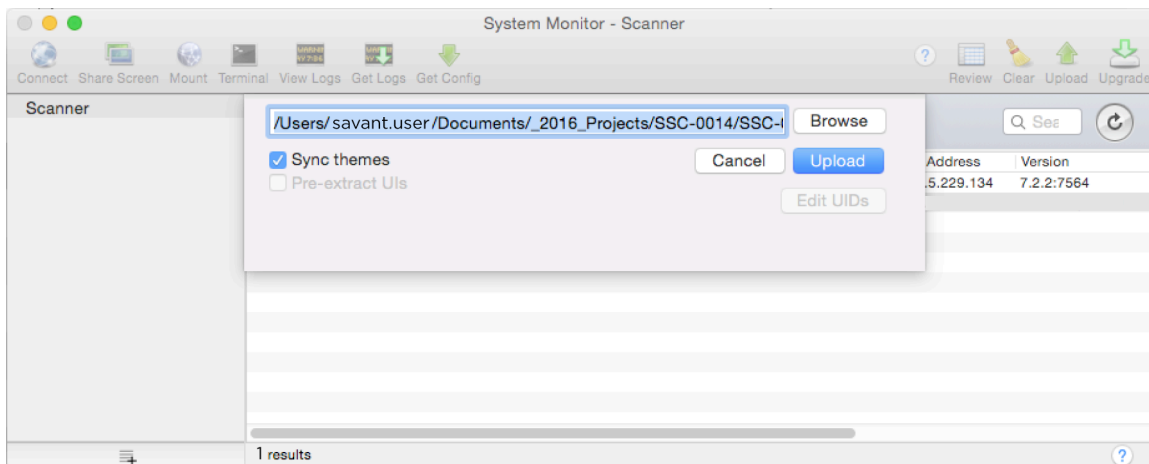

Select Upload to Master

4. In the **Configuration must be saved** dialog window that opens, read the dialog and select **Save and Upload**.
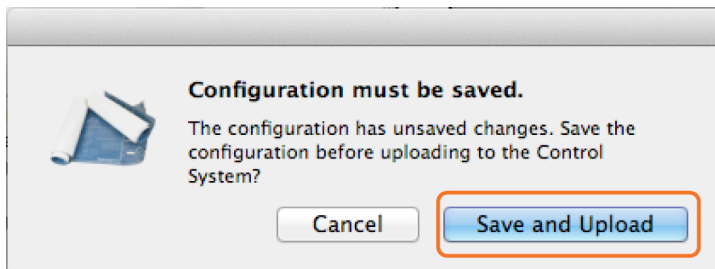
5. The System Monitor application will automatically open as shown below. Verify the path to the configuration file is correct. Select **Upload** when satisfied.

6. The configuration will now upload to the host. Once uploaded, the Savant Pro or TrueControl II App can now be opened and connected to the host

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8. Additional Documentation

Additional documentation is available on the **Savant Customer Community**.

- SmartControl 14 Smart Controller (SSC-0014) QRG - 009-1256-xx
- Relay and General Purpose Input/Output Profiles Application Note - 009-0482-xx
- Savant Controllers Family video in the Savant University pages

Appendix A: Document Revision History

009-1272-01 - February 2016

Section	Update
Rear Panel	• Removed Specifications Table • Updated Power Supply specifications • Added Upload Configuration section • Updated RacePoint Blueprint Configuration section

009-1272-00 - November 2014

Section	Update
All	Initial release of this Deployment Guide

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.

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.

Network Configuration

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 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 SSC-0014 is communicating with the network correctly.

To Reboot the Controller:

- **Cycle Power**
  Disconnect the controller from the AC power source for 15 seconds and then reconnect.

- **Hot Plug the Ethernet (LAN) Connection**
  Disconnect the Ethernet (LAN) connection from the controller for 15 seconds and then reconnect.

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