

Savant LVL 2 EV Charger Installation Guide

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This document guides the installer through the physical process of configuring a Savant Lvl 2 EV Charger with a Savant System, and supports the following products:

- Savant Lvl 2 EV Charger Model SAV1656HW
- 60A Power Module and Savant Host
- SchuPower Mobile App
- Power & Light Mobile App or Racepoint Blueprint

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Important Safety Information - Read First



Before installing, configuring, or operating any equipment, Savant recommends that each dealer, integrator, installer, etc. access and read all relevant technical documentation. Savant Power technical documentation can be located by visiting Savantpower.com. 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 for avoiding situations that may cause damage to equipment.
 WARNING!	Provides special information for 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.
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Safety Statements

All safety instructions below must be read, understood, and carefully followed under all applicable circumstances when working with any Savant equipment.

- 1. Follow all input power ratings marked on product near power input!**
2. If fuse replacement is required, replacement fuse should match fuse rating marked on the product.
3. Do not use equipment near water.
4. Clean only with dry cloth.
5. Do not block any ventilation openings or install near any heat sources such as heat registers, stoves, radiators, amplifiers, etc.
6. Refer all servicing to qualified service personnel. Servicing is required when any part of the apparatus has been damaged in any way, or fails to operate normally for any reason.
7. Use only attachments/accessories specified by the manufacturer, following all relevant safety precautions for any such attachments/accessories.
8. For applicable equipment, use the included power cord with the grounding prong intact to insure proper grounding of the device.
9. If the provided plug does not fit the desired outlet, contact a licensed electrician to replace the obsolete outlet.
10. Protect any power cord from being walked on, pinched, strained, or otherwise potentially damaged, especially at the outlet or device connections.
11. Disconnect any outlet powered apparatus from its power source during lightning storms or when unused for long periods of time.
12. To completely disconnect equipment from AC mains power, disconnect the power supply cord plug from the AC receptacle on the device.
13. For any hardwired or fixed in-wall apparatus, carefully follow all wiring diagrams and instructions. All electrical wiring and servicing should be performed by a properly licensed electrician.

1. Before You Begin

This document assumes the installer has read all relevant third party documentation. Read this document in its entirety before starting deployment of any product listed within. Ensure that the following items are available:

Hardware Checklist

- Fully Deployed Savant Power System
- 60A Power Module
- Mobile Device Running iOS 14.0 or Higher or Android 8.0 or Higher.....
- 2.4GHz Wi-Fi Connection

Tools Checklist

- Stud Finder
- Pencil.....
- Tape.....
- Level.....
- Drill.....
- Phillips Head Screwdriver

2. Deployment Steps


To successfully deploy a Savant Lvl 2 EV Charger, follow the steps listed below. This page can be used as a checklist to track progress as items are completed.

- Before installing, ground the Lvl 2 EV Charger
See [Grounding](#)
- Install the Lvl 2 EV Charger
See [Installation](#)
- Configure DIP Switch.....
See [Breaker Configuration](#)
- Configure the Lvl 2 EV Charger using the SchuPower App
See [App Configuration](#)
- Install a 60A Power Module.....
See [Deploying a 60A Power Module](#)
- Confirm Functionality.....
See [Confirm Functionality](#)
- Savant App – EV Charger Service Deployment.....
See [Savant App – EV Charger Service Deployment](#)

3. Grounding

IMPORTANT INSTRUCTIONS PERTAINING TO RISK OF ELECTRICAL SHOCK. Please read this section in its entirety before continuing with installation.

This product must be connected to a grounded, metal, permanent wiring system, or an equipment-grounding conductor must be run with the circuit conductors and connected to the equipment grounding terminal or lead on the product..

 **WARNING!** Improper connection of the equipment-grounding conductor is able to result in a risk of electric shock. Check with a qualified electrician or serviceman if you are in doubt as to whether the product is properly grounded. Do not modify the plug provided with the product – if it will not fit the outlet, have a proper outlet installed by a qualified electrician.

4. Installation

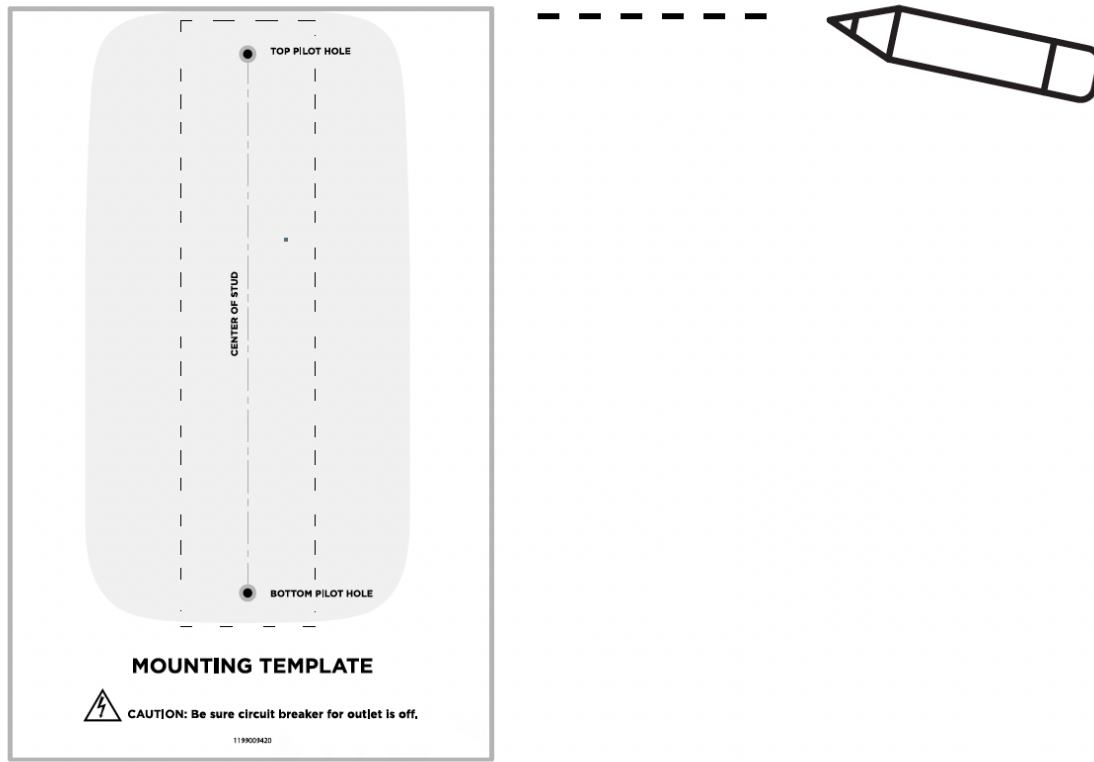
Before installation, the Savant Lvl 2 EV Charger must be grounded. Please refer to the [Grounding](#) section before continuing. This product must be installed by a licensed electrician. Some settings to the Lvl 2 EV Charger's electrical settings must also be done by an licensed electrician.

Choose a Location

The Lvl 2 EV Charger must be mounted where the height of the storage for the coupling device is located between 24 in (600mm) and 4 ft (1.2m) from grade. It may be installed indoors or outdoors.

1. Choose a general location for the Lvl 2 EV Charger. Ensure that it is within reach of a hardwired circuit or near an existing NEMA 14-50 or NEMA 6-50 outlet. The cord or wiring leading into the Lvl 2 EV Charger should have some slack. The mounting location should also allow the output cable with EV connector to have some slack while in use.
2. Using a stud finder, locate a stud within the general mounting location. Use a pencil to mark the location of the stud.
3. Mark a line to designate the top of the Lvl 2 EV Charger as it would be fully assembled. Line the top of the mounting template up with the pencil line and attach to the wall.

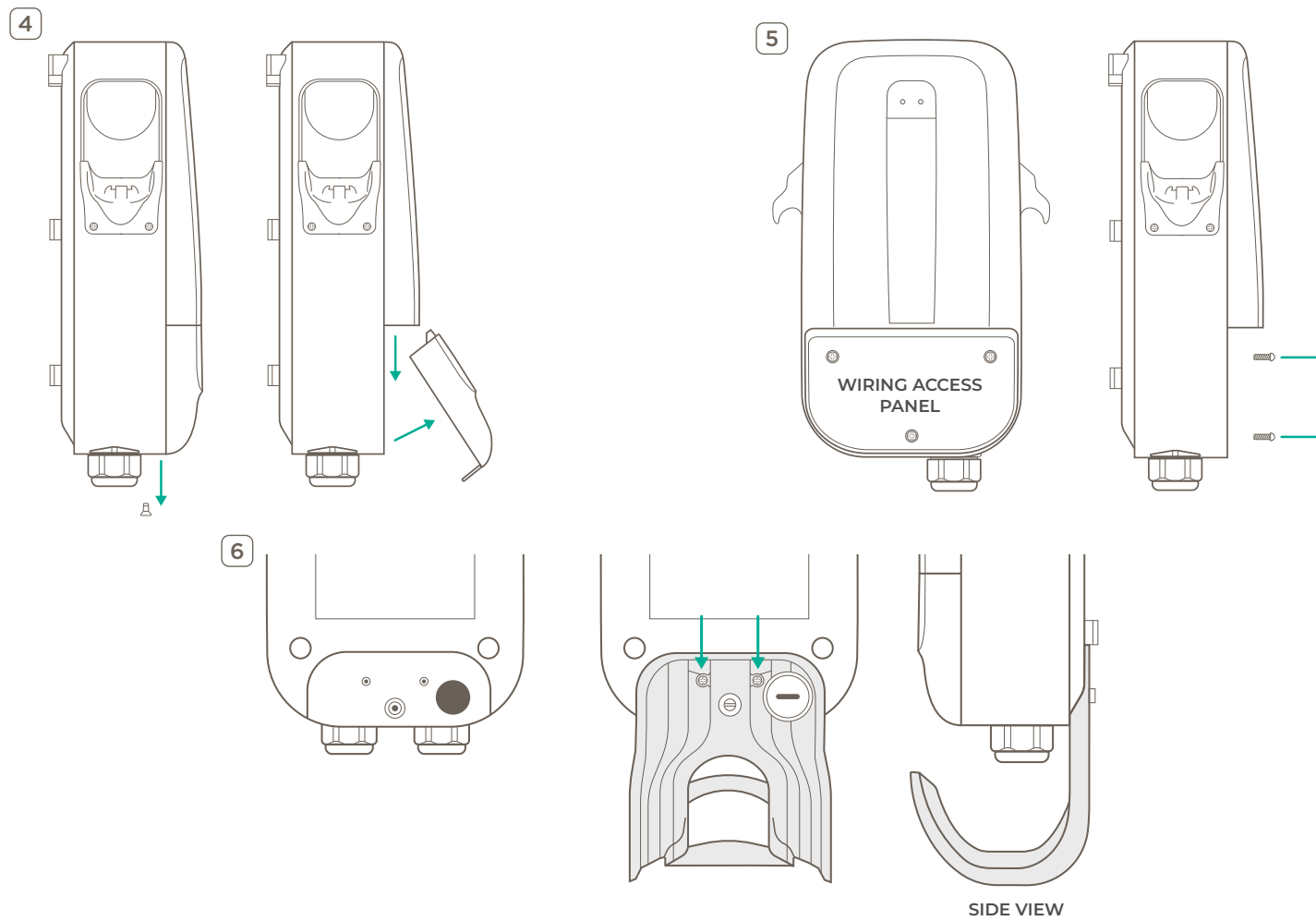
NOTE: The top of the Lvl 2 EV Charger is usually about 50 inches above the floor or ground.



Assembly

4. Lay the Lvl 2 EV Charger on a flat surface and remove lower front cover. Unfasten the screw located at the bottom. Set the screw aside for reassembly. Slide the cover down and lift to disengage the tabs at the top of the front cover. Set aside the lower front cover for reassembly.
5. Unfasten the three M4 screws from the front of the Lvl 2 EV Charger to remove the wiring access panel underneath the lower cover. Set the screws aside for reassembly. Lift off the wiring access panel and set aside for reassembly.
6. Turn over the Lvl 2 EV Charger carefully. Align the cable cradle's screw holes with the screw holes on the back of the Lvl 2 EV Charger. Use two 4 mm x 16 mm screws to attach the cable cradle.

NOTE: If mounting to the wall separate from the Lvl 2 EV Charger, mount the cable cradle securely to a stud or use heavy duty drywall anchors.



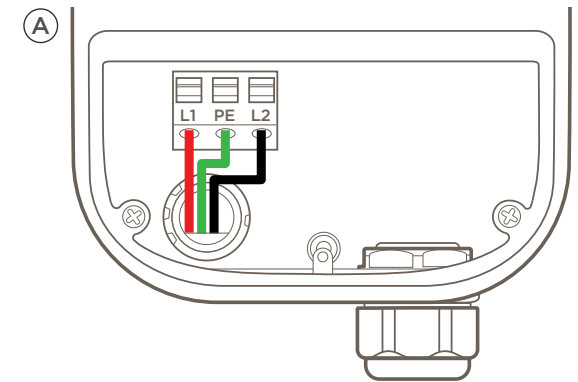
Hardwiring Power Supply

⚠ Before continuing the following steps, turn off power to the circuit. Do not restore power until installation is complete. Failure to do so could result in injury or death.

7. When installing a hardwired circuit, Savant recommends the AC input uses a conduit into the rear opening of the Lvl 2 EV Charger, when installing a hardwired circuit.
8. Turn off the power to the circuit before mounting the Lvl 2 EV Charger.
9. Feed the conduit and wires through the back of the Lvl 2 EV Charger, removing the back head plug. Continue feeding the cables through the back of the Lvl 2 EV Charger until the silver conductors are no longer visible.

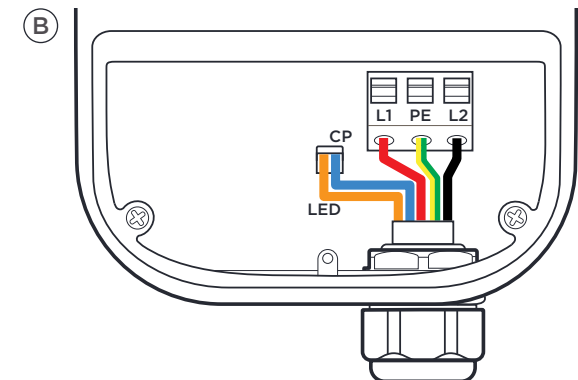
NOTE: If installing the Lvl 2 EV Charger outdoors and using the back opening to route the conduit, apply liquid sealant or a gasket and nut around the rear opening to prevent water ingress.

10. Securely insert wires into the left-hand terminal block within the wiring access panel. Use wiring diagram **(A)** for reference.



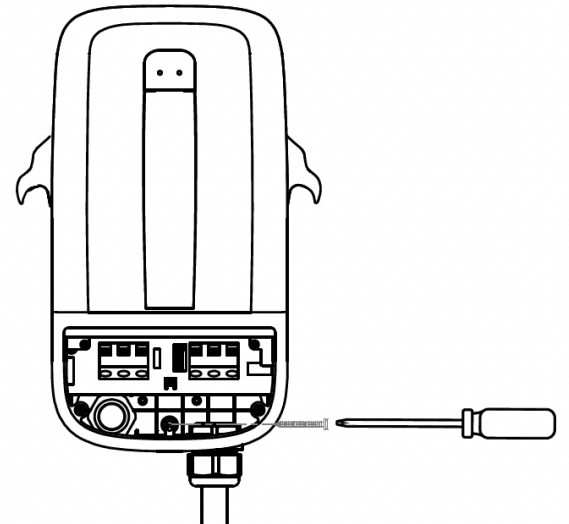
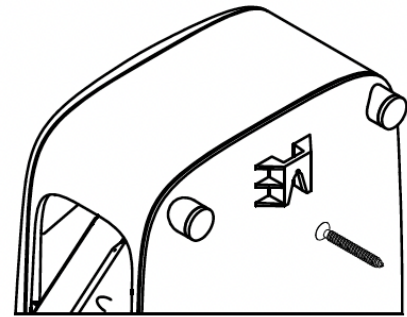
Connecting Output Cable

11. There are five wires visible at the end opposite to the EV connector. Insert the wires through the right-hand opening on the bottom of the Lvl 2 EV Charger.
12. Insert the wires into the appropriate connectors in the right terminal block as illustrated wiring diagram **(B)**.
13. Insert the two-pin plug (orange and blue wires) into the connector to the left of the right terminal block.
14. Feed the output cable up into the Lvl 2 EV Charger and secure by fastening the outer plastic nut to the threaded ring. Securely tighten the ring.



Mounting the Lvl 2 EV Charger

15. Using a drill fitted with a 5.5mm or $\frac{7}{32}$ in drill bit, drill two pilot holes into the stud where indicated by the mounting template.
16. Drive the 5.5mm x 50mm lag screw without a rubber washer into the top pilot hole, leaving the head of the screw 6-7 mm above the wall surface.
17. Lift the Lvl 2 EV Charger and then use the notch on the back of the unit to hang the unit from the screw affixed to the stud.
18. Align the Lvl 2 EV Charger's lower mounting hole with the lower pilot hole. Drive the 5.5 mm x 50 mm lag screw with the rubber washer through the lower mounting hole and into the pilot hole. Tighten until the Lvl 2 EV Charger is secure.



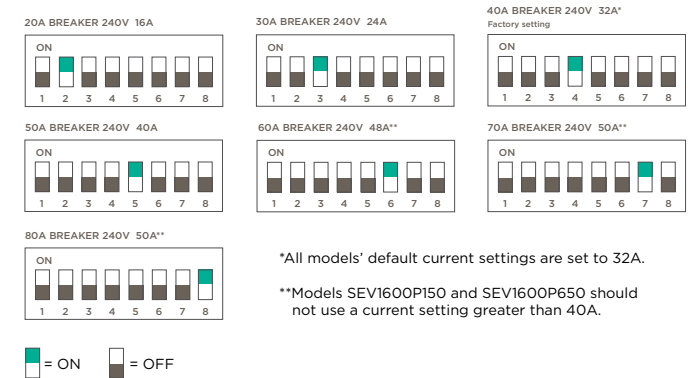
4.1. Breaker Configuration

The following steps must be completed by a licensed electrician. A licensed electrician should consult all applicable codes for breaker and wire sizing requirements.

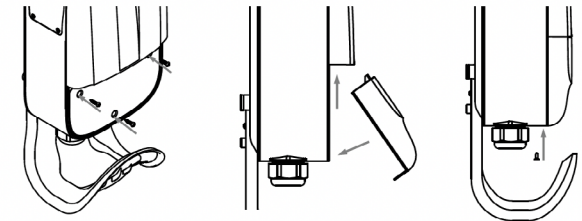
- Set the amperage of the Lvl 2 EV Charger according to the connected dedicated breaker associated with the hardwired connection or NEMA outlet. Use the table below to determine the voltage and amperage of the installation.

NOTE: If installing the Lvl 2 EV Charger with a 60A Power Module, the maximum amperage must not exceed 11.5kW.

Dedicated Breaker	Kilowatts	Voltage	Amperage	Hardwired	Plug
20A	3.8kW	208V/240V	16A	Y	Y
30A	5.8kW	208V/240V	24A	Y	Y
40A	7.7kW	208V/240V	32A	Y	Y
50A	9.6kW	208V/240V	40A	Y	Y
60A	11.5kW	208V/240V	48A	Y	N
70A	12.0kW	208V/240V	50A	Y	N
80A	12.0kW	208V/240V	50A	Y	N



- Set the Lvl 2 EV Charger's DIP Switch. Use the diagram to the right to find the dedicated breaker's voltage and amperage and model's requirements.
- Reattach the wiring access panel using the M4 screws that were set aside previously. Then reattach the lower front cover. Insert the tabs into the slots on the front of the Lvl 2 EV Charger and slide the cover up and in place. Secure the lower front cover at the bottom of the Lvl 2 EV Charger with the last M4 screw.
- Coil the output cable into the cable cradle and insert the EV connector into the dock on either side of the Lvl 2 EV Charger.
- Turn the power back on at the circuit breaker. The Power LED will illuminate a steady green if properly installed. For more information on LED status, see [Appendix A: Lvl 2 EV Charger LED Status](#).



4.2. Deploying a 60A Power Module

Savant strongly recommends installing the Lvl 2 EV Charger with a 60A Power Module for a generator ready system. The 60A Power Module enables load shedding of the Lvl 2 EV Charger when switching from grid to battery or generator. This would not be possible without a Power Module.

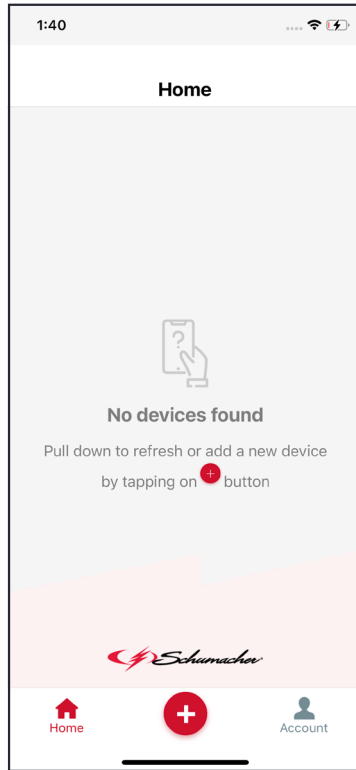
NOTE: The installation of a 60A Power Module must be used in conjunction with a Savant Host and installed by a licensed electrician.

1. The following documentation may be found on the **Savant Customer Community** to successfully deploy a 60A Power Module.
 - [60 Amp Module Quick Reference and Installation Guide](#)
2. Pair the 60A Power Module with the Savant Power & Light App or Blueprint. Follow instructions in the [Savant Power System Deployment Guide - Power & Light App](#) or [Savant Power System Deployment Guide - RacePoint Blueprint](#).

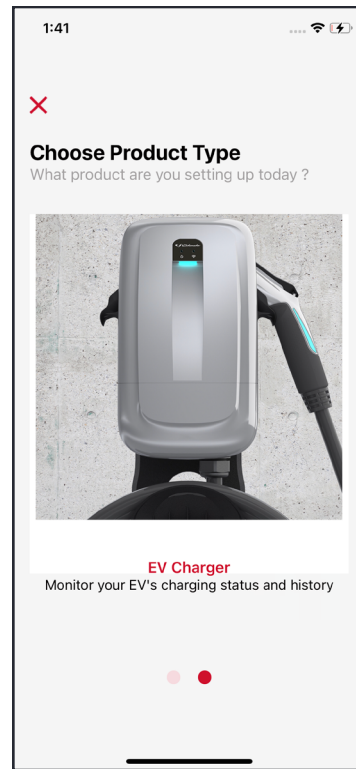
5. SchuPower App Configuration

Download the SchuPower app from the Apple Store or Google Play, or scan the QR code. Then follow the steps below.

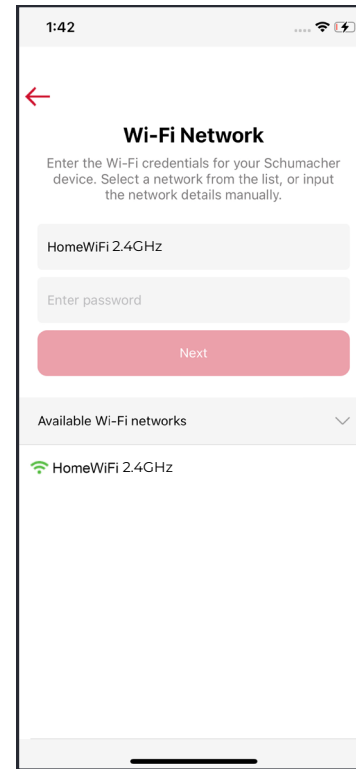
⚠ Important Note! The EV Charger supports only 2.4 GHz Wi-Fi networks and cannot be onboarded to a 5 GHz network. For onboarding, the phone must also be connected to a 2.4 GHz network; once the process is complete, the phone can be reconnected to a 5 GHz network if desired.



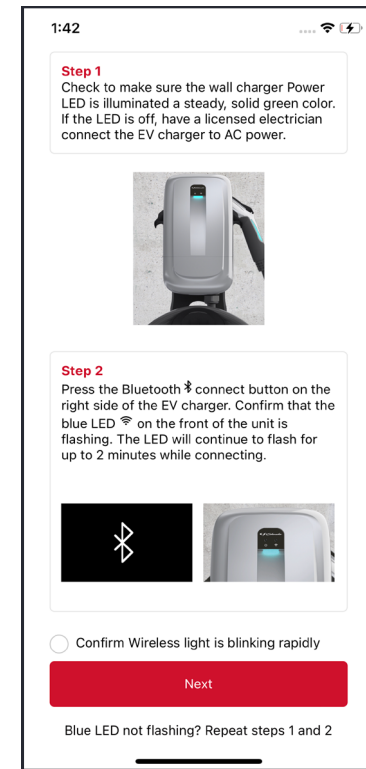
1 Once the SchuPower app is open, it will search for a device. Alternatively, tap on the “+” icon.



2 Choose the **EV Charger** Product Type.



3 Connect to a 2.4GHz Wi-Fi Network.



4 Follow the steps within the SchuPower App. Confirm Wireless light is blinking and select **Next**.

6. Confirm Functionality

1. The Lvl 2 EV Charger's Power LED will be illuminated a steady solid green if functionality is working as intended. If not, please refer to [Appendix A: Lvl 2 EV Charger LED Behaviors](#) for more information.
2. Remove charging gun from the wall charger's dock.
3. Connect the charging gun to the EV vehicle's charging port.
NOTE: The charging gun is fitted with a universal SAE-J1772 connector that will fit most electric vehicles. Tesla vehicles will require a Tesla Adapter.
4. Charging will begin automatically.
5. When charging stops, remove the charging gun from the vehicle's charging port and return it to the Lvl 2 EV Charger's dock.
6. Neatly replace the output cable in the cable cradle.



CAUTION! Do not tamper with the Lvl 2 EV Charger or Lvl 2 EV Charger components.

7. Savant App – EV Charger Service Deployment

After the EV Charger has been physically installed, wired, and verified for proper operation, complete service setup within the Savant App. Configure the EV Charger Service by following the Savant EV Charger Service Deployment Guide available on the [Savant Customer Community](#).

The EV Charger Service enables monitoring and control of electric vehicle charging within the Savant Home. Once deployed, the service provides:

- Current energy supplied to the EV Charger
- Duration of the active charging session
- Real-time charging status
- Configurable charge modes
- Historical usage tracking
- Start and stop charging control

Appendix A: Lvl 2 EV Charger LED Behaviors

Use the table below for troubleshooting the Lvl 2 EV Charger.

LED	LED State	Status	Solution
Power LED	Green (solid)	Power is successfully connected to Lvl 2 EV Charger.	N/A
	LED Off	No AC Power.	Check the breaker. For models SEV1600P1450 and SEV1600P650, reassure the plug is fully inserted.
Charging Gun LED	Green (solid)	Connected to vehicle. The charging process is complete, paused, or in scheduled charging mode.	N/A
	Green (fade in/out)	Charging is in progress.	N/A
	Green (fade in/out)	Charging is in progress.	N/A
	Blue (solid)	Standby mode.	N/A
	Cyan (flashing)	The charging process is complete or in scheduled charging mode.	N/A
Charging Status LED	Red (flashes twice)	Leakage	For Model SEV1600HW: Re-power the Lvl 2 EV Charger by turning the circuit breaker off and on again. For Models SEV1600P1450 and SEV1600P650: unplug the Lvl 2 EV Charger and then plug it back in. If fault still exists, visit the Savant Customer Community .
	Red (flashes three times)	Overvoltage	Unplug the charging gun and then reinsert into the EV vehicle's charging port. If the fault still exists, check the AC supply.
	Red (flashes four times)	Undervoltage	Unplug the charging gun and then reinsert into the EV vehicle's charging port. If the fault still exists, check the AC supply.
	Red (flashes five times)	Overcurrent	Unplug the charging gun and then reinsert into the EV vehicle's charging port.
	Red (flashes six times)	Over Temperature	Unplug the charging gun and then reinsert into the EV vehicle's charging port. If the fault still exists, unplug the charging gun and allow the unit to cool down before attempting to charge again.
	Red (flashes seven times)	Ground Fault	Unplug the charging gun and then reinsert into the EV vehicle's charging port. If the fault still exists, check the ground connection.
	Red (flashes eight times)	Relay Fault	Unplug the charging gun and then reinsert into the EV vehicle's charging port. If the fault still exists, visit the Savant Customer Community .
	Red (flashes nine times)	Meter Chip Fault	Unplug the charging gun and then reinsert into the EV vehicle's charging port. If the fault still exists, visit the Savant Customer Community .

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