

# Installation Instructions

## Notes and Warnings:

This manual contains important information about the installation, and operation of the simpleSwitch™.

- READ THIS MANUAL CAREFULLY before installing or servicing this product.
- Improper installation or operation can result in severe injury or property damage.
- Installation and repair must only be carried out by a licensed and qualified service person who has: thoroughly read, understands, and strictly adheres to, these instructions, as well as the instructions for electrical devices that are to be connected to the simpleSwitch240™.
- The manufacturer and seller are not responsible for any damage that may happen from improper installation or improper use.
- The simpleSwitch240™ is to be installed and/or used in accordance with national and local electrical codes.
- **Electric Vehicle (EV) home chargers have settings that must be configured on the EV charger device (not the car) prior to charging with simpleSwitch240™. Simply stated, EV chargers must be set to a maximum of 32 Amps charging. See Step 22.**
- **Primary or Secondary appliance power draw above 40 Amps will damage the simpleSwitch240™**

Specifications:	
Model	simpleSwitch 240™
Weight (pounds)	4 lbs.
Dimensions (W x H x D in)	7.58 x 7.58 x 4.90 in
Power Connection (Volts/Amps)	120-208/240VAC 50Amp Breaker Max
Priority Output	120-208/240VAC 40Amps FLA
Secondary (Switched Output)	120-208/240VAC
Full Load Rating – Continuous Use	40 Amps
Suggested Secondary Appliance Amperage	<36 Amps
Maximum Breaker Size	50 Amps
Contactors Type	Latching
Enclosure Rating NEMA	Type 1, 2, 3R, 4, 4X, 6, 6P, 12, 13
Mounting	Indoors / Outdoors
Delay Time	(5) minute delay to restore power to the Secondary appliance, when Priority appliance is using less than 240 watts
Standard(s) for Safety:	UL 916, Energy Management Equipment CSA C22.2 No. 205-17 Signal Equipment
Testing	UL Certificate of Compliance E510161 US/CAN LISTED



## Installation Steps

1. Determine which circuit the **simpleSwitch 240™** will be connected to.

2. Determine which appliance is “Priority” and which is “Secondary”.

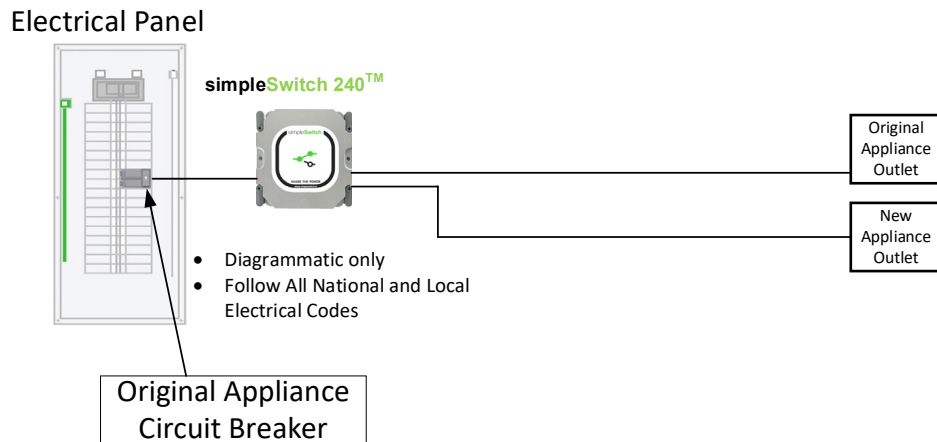
Considerations:

- The **simpleSwitch 240™** will always supply un-interrupted power to the Priority appliance.
- The Secondary appliance only has power supplied when the Priority appliance is not in use or drawing less than 240 watts.
- Priority Appliance Examples:**
  - Range, electric oven, clothes dryer, electric heaters, air conditioner, small/med steam-showers.
- Secondary Appliance Examples:**
  - Electric vehicle charger, RV outlet, shop equipment, electric heaters, air conditioner, general use aux. 240.

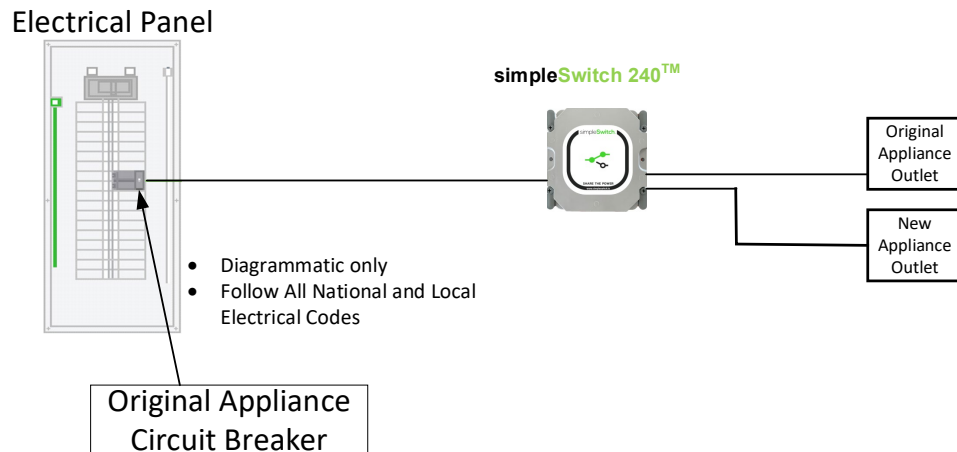
3. Determine location of **simpleSwitch 240™**.

Examples for placement:

- The **simpleSwitch 240™** can be mounted close to the Electrical Panel.



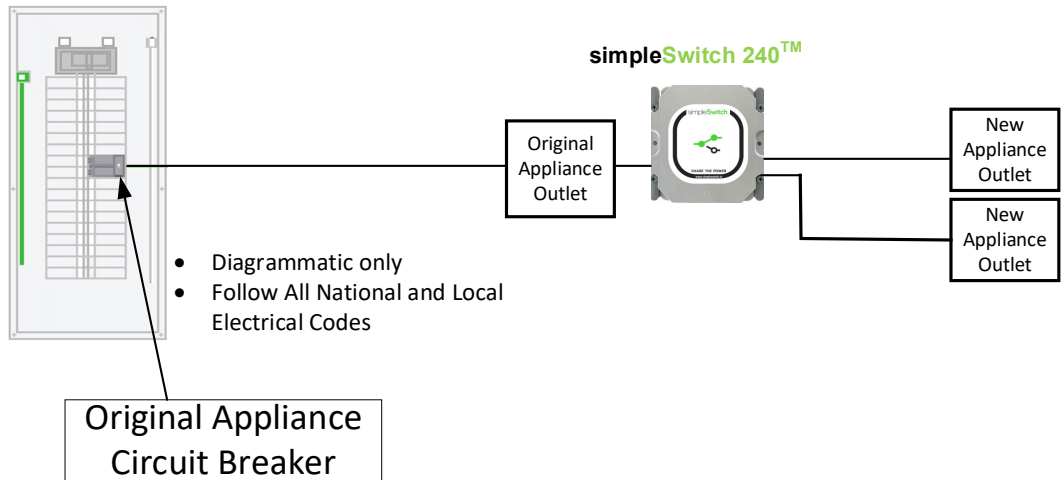
- The **simpleSwitch 240™** can be teed in downstream of the panel at a point that requires the least amount of fishing, demo and wall repair.



Examples for placement Continued:

- c. The original Priority appliance outlet can be converted/used to junction the **simpleSwitch 240™**.

#### Electrical Panel



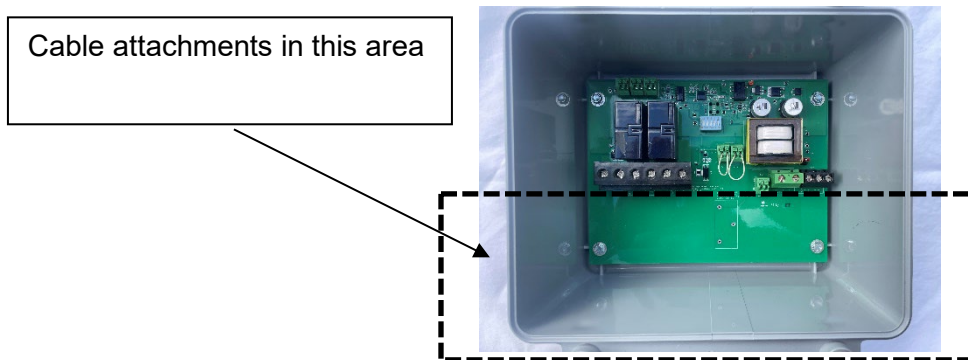
#### 4. Determine cable size and type from the power source to the simpleSwitch 240™.

- The **simpleSwitch 240™** will accommodate:
  - Minimum size conductor #14 American Wire Gauge (AWG)
  - Maximum size conductor #6 American Wire Gauge (AWG)
- Considerations:
  - When determining cable size and type, factor in all local code requirements.

## 5. Determine cable pathways.

- Cable pathways to be designed for cable entry from the side (lower 1/2) or bottom (not top).
- Considerations:
  - Determine input and output cable pathways before mounting the **simpleSwitch 240™**.
  - Consider any junction boxes (or similar wire raceway troughs, or wire ducts, wire gutters), or other equipment or hardware to accompany the installation.
  - Consider radius of cable bends when planning cable pathway and device placement.

## 6. Mount Conduit Fittings to the simpleSwitch 240™.

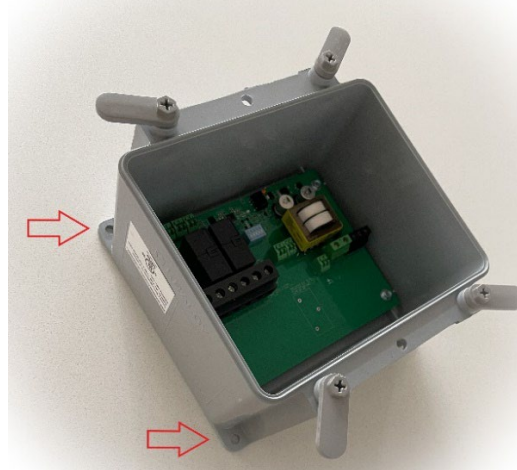


**CAUTION: Plan holes and drill with mild pressure to avoid touching and damaging the circuit board inside of the simpleSwitch 240™.**

- a. Use a fine-tooth hole saw to make one hole for the input cable connector and two holes for the output cable connectors in the side or bottom of the **simpleSwitch240™**.
- b. Avoid entry from top of simpleSwitch to reduce risk of water intrusion and inadvertent grounding of circuit board.
- c. Typical hole sizes:
  - 1/2" conduit connectors require a 7/8" hole.
  - 3/4" conduit connectors require a 1-1/8" hole.
  - 1" conduit connectors require 1-3/8" hole.
- d. Mount conduit/cable connectors to the **simpleSwitch 240™** housing.

**7. Mount simpleSwitch 240™ to structure with appropriate screws or anchors.**

- Use ONLY the external mounting holes. DO NOT put fasteners through the inside of the box because it may damage internal electronics.
- Four (4) external holes total, located in 4 corners of housing.



**8. Turn off main electrical panel.**

**9. Turn off breaker that is designated for simpleSwitch 240™.**

**10. Run cable from power source to the simpleSwitch 240™.**

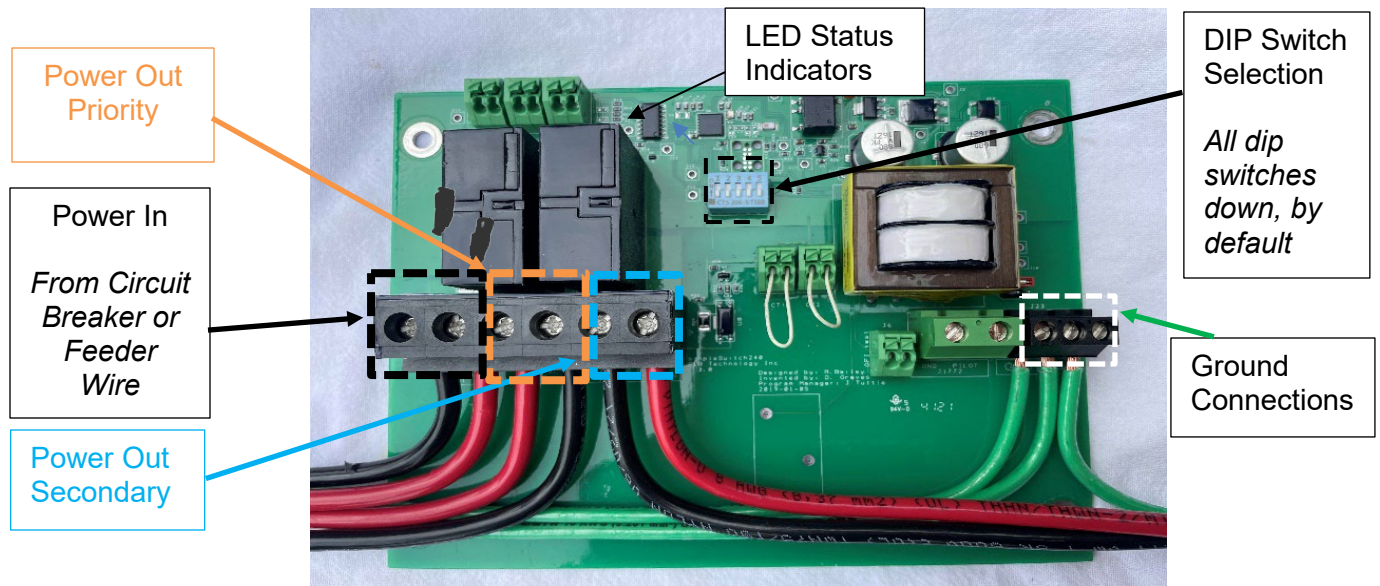
- a. From the designated circuit (in the Electric Panel Box) run cable into to the **simpleSwitch 240™** through the input connector leaving 8 inches of extra cable for stripping and connecting.
- b. Use conduit if required by local code.
- c. Note:
  - Minimum size conductor #14 AWG
  - Maximum size conductor #6

**11. Run cables from simpleSwitch 240™ to appliance/device.**

- a. From one exit fitting in the **simpleSwitch 240™**, run a cable to the Priority appliance, or attach the existing Priority appliance cable through an exit connector. Leave 8 inches of extra cable in the **simpleSwitch 240™** for stripping and connections.
- b. Run a second cable through the other exit connector to the Secondary appliance (or a junction box or the power outlet required for the Secondary appliance). Leave 8 inches of extra cable in the **simpleSwitch 240™** for stripping and final connections.
- c. Use conduit if required by local code.

**12. Connections should be made like the image below (see steps 13, 14, 15, 16 below).**

- a. Note: DIP switch selection and positioning instructions #18
- b. Note: LED status indicator description #21 to #25



**13. Connect the power feed to the Terminal Strip inside the simpleSwitch 240™ housing.**

- a. Strip 3/8" of the shielding from the red and black conductors.
- b. If present, the neutral wire is not connected to Terminal Strip (see instruction #17).
- c. The red and black wires are connected to the terminal strip in the **simpleSwitch 240™** and labeled on the circuit board as **AC IN**:
  - **Red connects to AC IN, L2/N.**
  - **Black connects to AC IN, L1.**

**14. Connect the “Priority” appliance to the Terminal Strip.**

- a. Strip 3/8" of the shielding from the red and black conductors.
- b. If present, the neutral wire is not connected to Terminal Strip (see instruction #17).
- c. The red and black wires are connected to the terminal strip in the **simpleSwitch 240™** and labeled on the circuit board as **AC OUT**:
  - **Red connects to AC OUT, L2/N.**
  - **Black connects to AC OUT, L1.**

**15. Connect the “Secondary” appliance to the Terminal Strip.**

- a. Strip 3/8" of the shielding from the red and black conductors.
- b. If present, the neutral wire is not connected to Terminal Strip (see instruction #17).
- c. The red and black wires are connected to the terminal strip in the **simpleSwitch 240™** and labeled on the circuit board as **AC OUT SW**:
  - **Red connects to AC OUT SW, L2/N.**
  - **Black connects to AC OUT SW, L1.**

**16. Connect the ground wire to the terminal block labeled GROUND.**

## 17. Devices with 120V Neutral wire.

- a. For devices that contain a neutral wire and use 120V power (e.g. clock on an electric range), that device should typically be set as the Priority device to maintain power to the 120V application (e.g. clock on an electric range).
- b. To connect neutral wires together:
  - Neutral wires may be spliced and the **simpleSwitch 240™** may be used as a junction box to house the spliced wires. Position the spliced wires in the bottom ½ of the **simpleSwitch 240™** housing.
  - The installer may use a multitap connector or push wire terminal block (See examples below).
  - If the inspector requires that the neutral block be mounted, there are mounted terminal blocks available that will mount to the inside bottom of the **simpleSwitch 240™**.



Push Wire Connector  
(Example. Not Supplied)



Push Wire Connector  
(Example. Not Supplied)



Mounted Push Wire Connector  
(Example. Not Supplied)




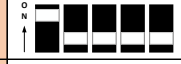


Multitap Connector  
(Example. Not Supplied)

**18. Set DIP Switches** (applies only when a surge current device is connected to Secondary output).

*Functional Note: DIP switch settings are only applicable to the Secondary output terminals of the **simpleSwitch™**, and only need to be revised from the default setting if there is a surge current (motor load) appliance being connected to the Secondary output.*

DIP switch settings may need to be revised based on the electrical device being connected to the **Secondary** output terminals of the **simpleSwitch**:

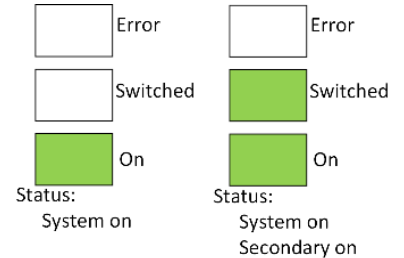
- a. Electrical device **without a surge current on Secondary** (e.g. EV Charger):
  - DIP switches should be left in default position “0” for applications without a surge current (motor load).
  
- b. Electrical device **with a surge current on Secondary** output (e.g. Air Conditioner, other electrical devices with a surge current, typically containing a motor):
  - DIP switches may or may not need to be adjusted depending on the level of surge current. Perform the following steps sequentially:
  - First, power up the electrical device containing a surge current (e.g. A/C) with the DIP switches set in the default position “0”.
    - If the error light does not turn on, leave the DIP switch in the default setting (position 0).
    - If the Simple Switch error light turns on, that means that the motor load (surge current) duration is longer than the default setting, and a time delay needs to be set according to the duration of the surge current (typically several seconds, see next step).
  - If error light was illuminated, the suggestion is to start at a 4-second delay (position 2), and restart/retest the device (e.g. A/C).
  - If the **simpleSwitch240™** switches off the Secondary during the start of the AC motor (Power Surge) then set the delay to 8-seconds (position 3).
  - If **simpleSwitch240™** still switches off the Secondary device during the start of the AC motor (Power Surge) then the device being connected to the **simpleSwitch240™** may not be suitable for the **simpleSwitch240™**. Please contact technical support at (206) 494-3260 Ex 701.
  - Set the dip switches according to the table below to set the time delay:

Position	Delay (sec)	Trip off Current	sw1	sw2	sw3	sw4	sw5	DIP Switch Position
0	1	1.5	Down	Down	Down	Down	Down	
1	2	1.5	Up	Down	Down	Down	Down	
2	4	1.5	Down	Up	Down	Down	Down	
3	8	1.5	Up	Up	Down	Down	Down	



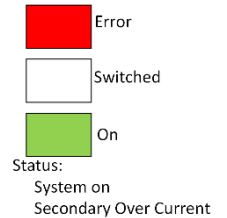
- 19. Finish installation of any modified or new junction boxes and outlets.
- 20. Turn the main panel on.
- 21. Turn off calls for power from connected devices/appliances and turn on the designated breaker.

- a. Ensure calls for power are turned off from electrical devices connected to the **simpleSwitch 240™** (e.g., turn off call for A/C, turn off manual burners on range, turn off manual heater dials).
- b. Turn on designated breaker. The power on indicator LED will light Green.
- c. Approximately 2 seconds later the Secondary will switch on.



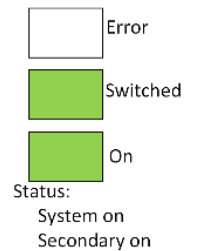
**22. Electric Vehicle (EV) Charger.**

- a. Set the car charger device **PRIOR** to plugging charger into the car (as damage to **simpleSwitch 240™** may result if the car charger device is not properly set).
- b. Follow instructions from the EV charger supplier to ensure the **CHARGER DEVICE (NOT THE CAR) is set to a maximum charge rate of 32 Amps.** Higher amperage chargers may be connected to **simpleSwitch 240™** but **must: be set to a maximum 32 Amp charge rate on the Wall Charger itself (not the vehicle),** and other electrical connections sized according to standards and codes.
- c. If an Overcurrent Condition exists, the Secondary will switch off and the error status LED will light RED. The system will retry in 5 minutes.
- d. Express Disclaimer: in no case shall the manufacturer of the **simpleSwitch 240™** or its distributors or resellers, be responsible for improper installation or failure or damage to an electrical device connected to the **simpleSwitch 240™** or the **simpleSwitch 240™** device itself or other property, due to these instructions not being strictly followed. An installer, service provider, and homeowner should only follow these written instructions.
- e. In the event clarification is required, setup appointment with **simpleSwitch** technical support prior to completing installation, and prior to activating car charging.



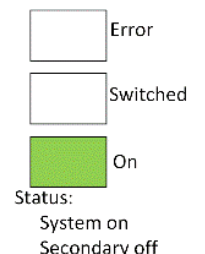
**23. Check all internal simpleSwitch 240™ connections for power with a multi meter.**

- a. Note Status LEDs
- b. 208-240 volts at the AC IN connection.
- c. 208-240 volts at the LINE and AC OUT connection.
- d. 208-240 volts at the AC OUT SW connection.



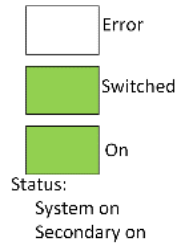
**24. Turn on Priority appliance and check these internal simpleSwitch 240™ connections with a multimeter.**

- a. Note Status LEDs
- b. 208-240 volts at LINE.
- c. 0 volts at the **AC OUT SW** (Secondary appliance).
- d. 208-240 volts at **AC OUT** (Priority appliance).



**25. Turn off Priority appliance and check these internal simpleSwitch 240™ connections with a multimeter after the 5 minute wait period.**

- a. Note Status LEDs
- b. 208-240 volts at LINE.
- c. 208-240 volts at **AC OUT SW** (Secondary appliance).
- d. 208-240 volts at **AC OUT** (Priority appliance).



**26. Note on Delay.**

- When the Priority appliance is turned on, the Secondary appliance is turned off.
- When the Priority appliance is turned off, there will be a **DELAY of 5 minutes** before power is restored to the Secondary appliance (AC OUT SW). *The reason for this delay is to ensure the Priority source is not being used (e.g. some appliance cycles' are close to 5 minutes in length).*

**27. Install all covers.**