

PowerUp

user guide

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## CONVENTIONS

### General Conventions

The following conventions are used in this manual:



#### **Note:**

Indicates additional information that is relevant to the current process or procedure.



#### **WARNING!**

Warning information appears before the text it references to emphasize that the content may prevent damage to the device or equipment.



#### **CAUTION!**

CAUTIONS APPEAR BEFORE THE TEXT IT REFERENCES. CAUTIONS APPEAR IN CAPITAL LETTERS TO EMPHASIZE THAT THE MESSAGE CONTAINS VITAL HEALTH AND SAFETY INFORMATION.

## INFORMATION

### Copyright

The ownership and all intellectual property rights of this Installation and Operation Manual (this “Manual”), including but not limited to the content, data and figures contained herein are vested by General Motors (“GM”). The Manual can only be applied to operation or use of the product. Any disposition, duplication, dissemination, reproduction, modification, translation, extraction or any other usage to the Manual is prohibited without obtaining GM’s prior written permission. As the product will be developed and improved continuously, GM may modify or update the Manual from time to time without any notice. GM will do its best efforts to keep the Manual updated and maintain the accuracy of the Manual. GM disclaims any kinds or forms of warranty, guarantee or undertaking, either expressly or implicitly, including but not limited to the completeness, accuracy, non-infringement, merchantability or fitness for particular purpose or usage.

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## Intended Use

The device is developed, manufactured, tested and documented according to the safety standards. If you comply with the instructions and safety instructions described for its intended use, the product normally will not pose any danger in terms of property damage or to the health of people. The instructions contained in this manual shall be followed. Otherwise, sources of danger may be produced or safety equipment may be rendered inoperable.

This device may only be used to charge Battery Electric Vehicles or Plug-in Hybrid Electric Vehicles: In addition, the following conditions apply for intended use:

- The device is exclusively for stationary installation.
- The device is designed for installation on a wall or pedestal.
- The device can be used for indoors and outdoors.

The following uses are considered as not intended:

- The device is not for charging electric vehicles that require ventilation for charging.
- The device is not for use with plugs and/or sockets.

## IMPORTANT SAFETY INSTRUCTIONS

### SAVE THESE INSTRUCTIONS

## SAFETY AND COMPLIANCE

Before installing, commissioning, and operating of the PowerUp charger, review this manual carefully and consult with licensed contractors, licensed electricians and installation experts to ensure compliance with local building practices, climate conditions, safety standards, and state and local codes. GM is not responsible for damage caused by failure to follow the safety instructions and work instructions in this manual.

## Danger (Risk of Fire or Electric Shock)

Dangerous voltages and currents can occur during operation of the PowerUp charger. Before carrying out any work on the PowerUp charger, take the following protective measures:

- Disconnect all electrical power prior to installing the PowerUp charger. Failure to do so may result in electric shock, physical injury or damage to the electrical system and charging unit.
- Do not remove circuit protective devices or any other component until all electrical power is disconnected.

- Secure the working area against access by unauthorized persons.
- The PowerUp charger 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 PowerUp charger.
- Use a measuring instrument to check that there is no voltage.
- Use appropriate protection when connecting to the main power distribution cable.
- Do not use the device to charge or supply other devices.
- Do not touch the contact pins of the charging plug when operating.
- Do not use non-GM approved adapters, conversion adapters or cord extension sets with the PowerUp charger.
- Do not use this PowerUp charger if the flexible power cord or charging cable is frayed, the insulation is broken, or the device shows signs of damage.

## Warning

When using electric products, basic precautions should always be followed, including the following. This manual contains important instructions that shall be followed during installation, operation and maintenance of the unit.

- Read all the instructions before using this product.
- This device should be supervised when used around children.
- Do not put fingers into the electric vehicle connector.
- Damaged cables may only be replaced by electricians.
- Do not use this PowerUp charger if the enclosure or the vehicle connector is broken, cracked, open, or shows any signs of damage.
- Only pull the charging cable out of the charging socket by the charging coupler.

## Grounding Instructions

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.

## Caution

- People can trip over cables lying around.
- To reduce the risk of fire, connect only to a circuit provided with 48 amperes maximum branch circuit overcurrent protection in accordance with the 60 amperes.
- Always hang the charging cable in the holder supplied with the PowerUp charger after use.
- All terminal screws must be tightened to the specified torque using a device suitable for the defined torque range.
- Any repair work as well as the replacement of components on the PowerUp charger may only be carried out by a qualified technician. Otherwise, the warranty will become void.
- Damaged or illegible safety labels must be replaced.
- The PowerUp charger can only be installed by licensed contractors, or licensed electricians in accordance with all applicable state, local and national electrical codes and standards.
- Seal all external connectors adequately to ensure an ingress protection rating of IP6K6K.
- Warning notices, warning symbols and other markings attached to the PowerUp charger must not be removed.

## Moving and Storage

- When carrying and moving this product, do not lift or carry by the charging cord.

## Operator's Duty of Supervision

- As the operator of the PowerUp charger, you are responsible for the safety of the users and its proper use.
- As the operator of the PowerUp charger, you are responsible for the safety of particularly vulnerable persons, especially children. Ensure that such persons maintain a sufficient safety distance from the PowerUp charger and the charging cable.
- Consider the emergency routes at the installation site.
- Do not install the device in areas with explosive gases or vapors.

# Federal Communications Commission (FCC) Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/ TV technician for help.

## **CAUTION:**

Any changes or modifications not expressly approved by the party responsible for compliance could void your authority to operate the equipment.

## **RF EXPOSURE STATEMENT**

The equipment must not be co-located or operating in conjunction with any other antenna or transmitter. The equipment complies with FCC RF exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance 20cms between the radiator and your body or nearby persons.

## Industry Canada (IC) Statement

This device complies with Industry Canada license-exempt RSS(s). Operation is subject to the following three conditions:

1. This device may not cause interference.
2. This device must accept any interference, including interference that may cause undesired operation of the device.
3. The PowerUp charger does not support operation in the band 5150 – 5250 MHz to reduce the potential for harmful interference to co-channel mobile satellite systems.

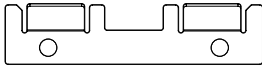
### **RF EXPOSURE STATEMENT**

The equipment complies with IC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance 20cms between the radiator and your body or nearby persons.



## BEFORE INSTALLATION

### Accessory Kit



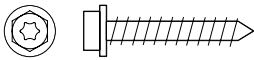
Mounting bracket



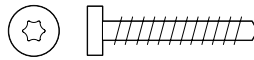
Mounting template  
(Cardboard)



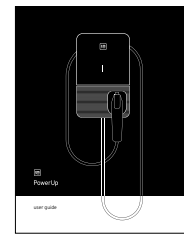
Quick installation guide



Concrete screws x 3  
(1/4" T25 Torx)



Wood screws x 3  
(5.5 mm T25 Torx)



User manual  
(Digital only)

### Recommended Tools

The following tools are recommended for the PowerUp charger installation:

- Electric screwdriver
- Power drill
- T20 Torx driver bit
- T25 Torx driver bit
- Hex driver bit
- Phillips head driver bit
- Step drill bit, i.e. 1-1/8"
- 6mm drill bit
- Vacuum
- Rectangular file
- Torque wrench
- Level
- Tape
- Marker

## Installer-supplied Components

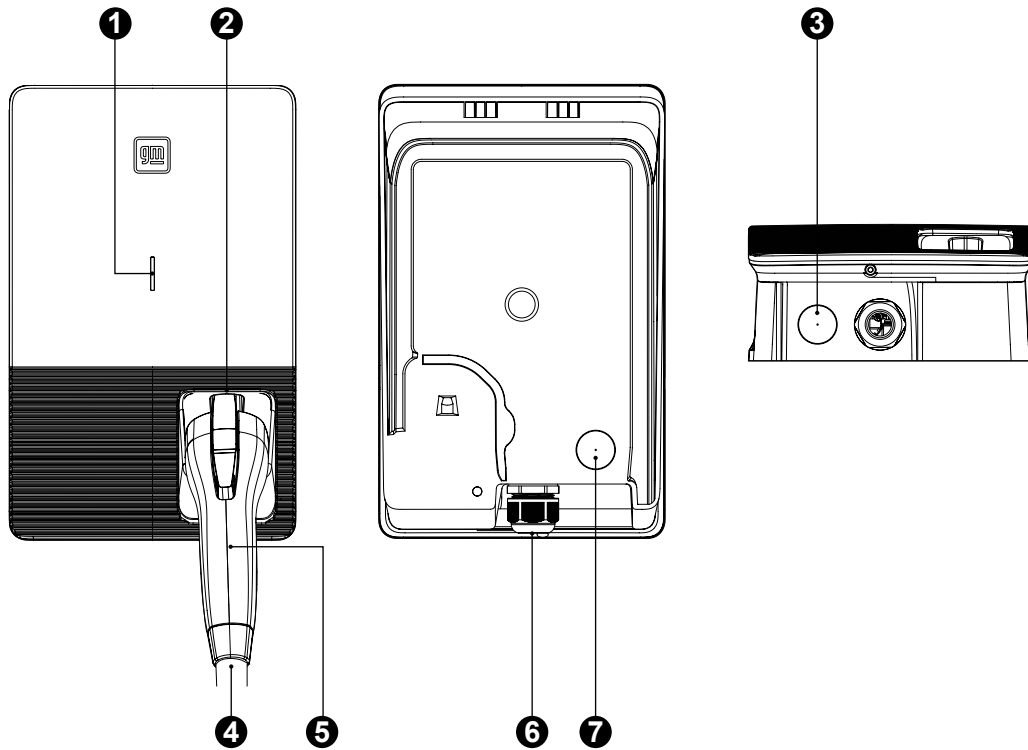
The installers should prepare the following parts for the PowerUp charger installation:

1. Conduit of appropriate size for input power wires to ensure water resistance.
2. Conduit fitting(s) for input power wires to ensure water resistance.
3. Upstream breakers:

To reduce the risk of fire, only connect to a circuit with 60 amperes maximum branch circuit overcurrent protection in accordance with the National Electrical Code, ANSI/NFPA 70, and the Canadian Electrical Code, Part 1, C22.1.

Model	Circuit Breaker Specifications
EIAW-U11K	60A max., 208/240V min., 2 poles

## THE POWERUP CHARGER



No.	Item
1	LED Indicator
2	Plug Holder
3	Drilling Mark for Bottom Wire Routing
4	Charging Cable
5	Charging Coupler
6	Charging Cable Gland
7	Drilling Mark for Rear Wire Routing

## LED Indicator Definitions

LED Behavior	Definition	
WHITE	Blinking	The wall charger is in the initialization process
	Solid	Ready to charge (not connected to EV)
GREEN	Blinking	Charging in progress
	Solid	<ul style="list-style-type: none"> <li>Charge complete (connected to EV)</li> <li>Charging is delayed (vehicle is not requesting power)</li> </ul>
YELLOW	Blinking	Updating Firmware
RED	Blinking	Charger error (recoverable)
	Solid	Charger or max. current setting error
WHITE + GREEN + RED	Solid	Installation not complete (DIP switches not set)

# INSTALLING THE POWERUP CHARGER

Before you start, please read the following instructions:

## Selecting the Installation Site

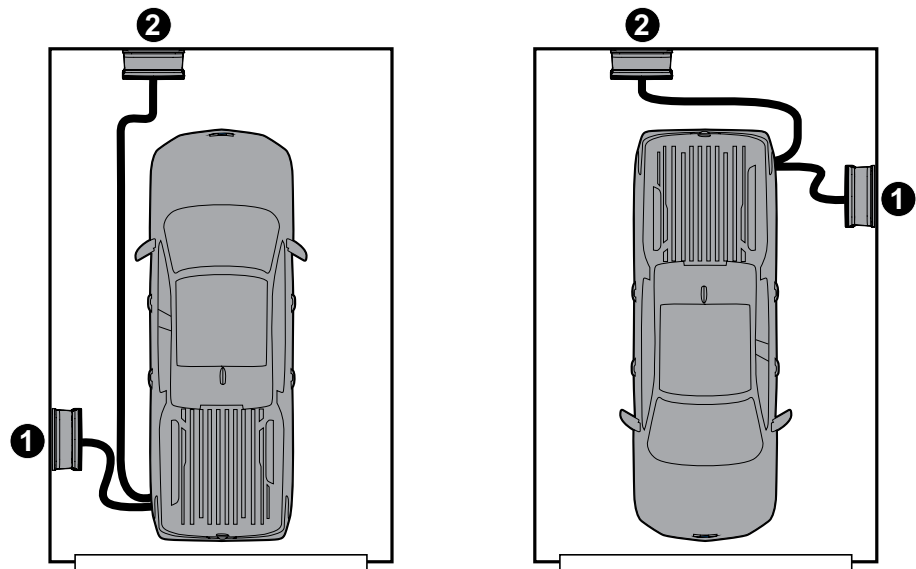
The PowerUp charger can be installed in both indoor and outdoor environments. It is necessary to consider the installation conditions and protection at the site:

- Follow local electrical regulation and installation standards.
- Consider the emergency routes at the installation site.
- Do not install the device in areas with explosive gases or vapors.
- It is recommended to install the PowerUp charger in a location that avoids direct sunlight.
- Install the PowerUp charger on a non-flammable support that is suitable to handle the weight of the unit.
- Ensure the ambient temperature of the location is between -40°F and 122°F (-40°C – 50°C).

## Recommended Installation Positions

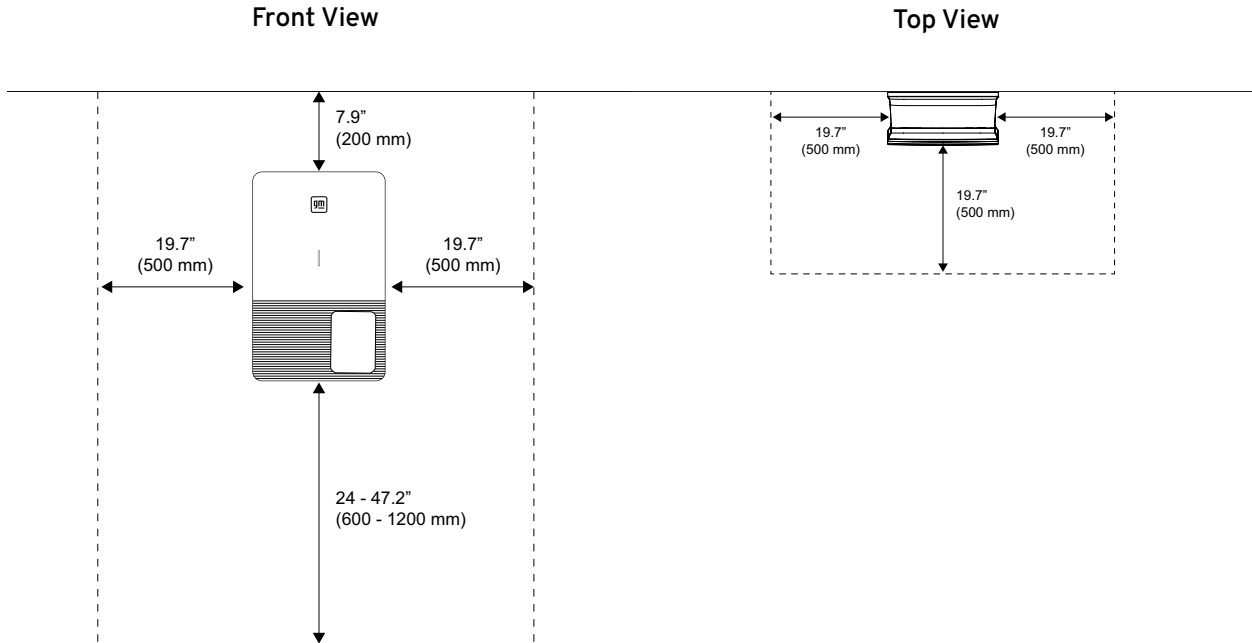
When considering installation positions, make sure the PowerUp charger can be easily connected with the PowerUp charger and have enough space for maintenance.

1. Recommended position
2. Alternative position



## Recommended Installation Space

Installers should follow applicable accessibility requirements when selecting the mounting position. The PowerUp charger should be mounted at a height between 600 mm (24 inches) and 1.2 m (47.2 inches) above ground.

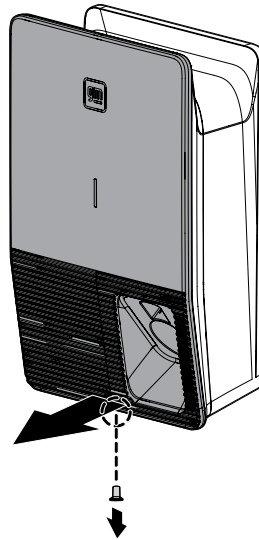


## Preparation

After removing the PowerUp charger and the accessories kit from the packaging, you must first create an opening to allow you to route the AC power wires into the system:

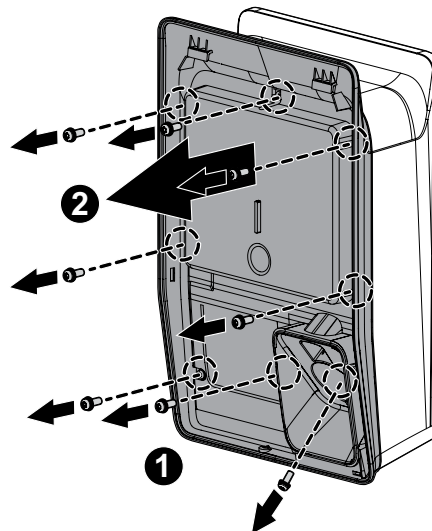
### 1. Remove the cosmetic cover.

- a. Remove the single T20 Torx screw from the bottom.
- b. Pry open the bottom of the cosmetic cover.
- c. Remove the cosmetic cover from the unit.

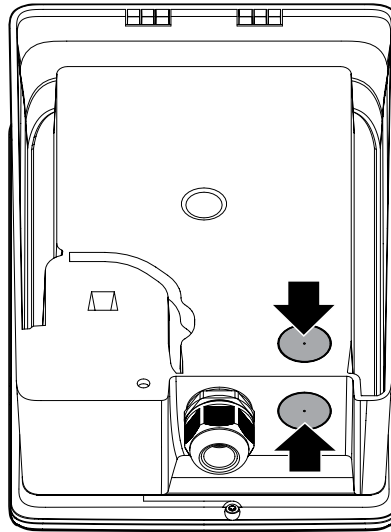


### 2. Remove the middle cover.

- a. Remove the eight T20 Torx screws from the sides of the middle cover and the center of the plug holder.
- b. Remove the middle cover from the unit.



3. Routing the AC power wires is possible through the bottom or rear of the enclosure. Using the power drill and 1-1/8" step drill bit, drill an opening for the wires from the *outside of the unit* based on how the power wires need to be fed into the unit (i.e., the bottom or rear).

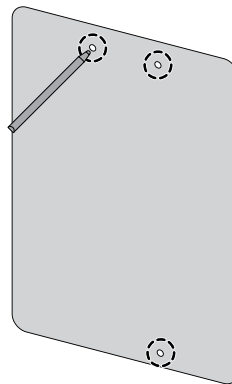


4. Use the vacuum to clean up any debris left from the drilling process.

## Wall Mounting

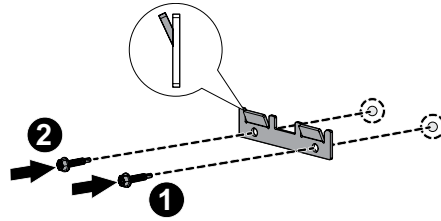
The unit must be mounted on one of the following types of (solid) walls only:

- **Non-cracked concrete or solid brick:** Use the three 1/4" concrete anchor screws provided to secure the PowerUp charger unit onto the wall.
  - **Solid wood or drywall and solid wood (wall stud):** Use the three 5.5 mm wood screws provided to secure the PowerUp charger unit onto the wall.
1. Use the template and level to mark out the position of the three screws that will be used to secure the wall mounting bracket and unit to the wall.



2. Use the power drill to drill the three pilot holes marked in the previous step.

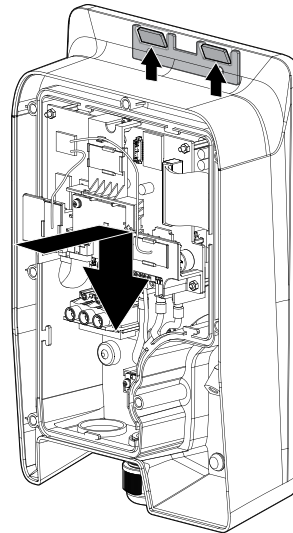
3. Use two of the wall screws to mount the bracket onto the wall so that the hooks on the bracket protrude outwards.



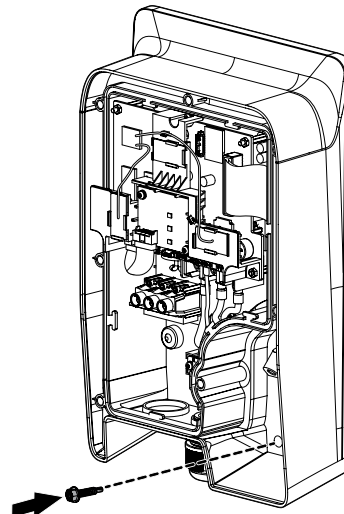
**Note:**

A single wall screw installed on the right side of the mount is required, but installing both screws is recommended.

4. Place the unit on the bracket by aligning the slots on the rear of the chassis to the corresponding hooks on the bracket.



5. Use the remaining screw to secure the unit to the wall.





Once you have mounted the unit onto the wall you can proceed with connecting the power wires.

## Making the Connections



### CAUTION!

BEFORE CONNECTING THE AC POWER WIRES TO THE UNIT, ENSURE THAT UPSTREAM BREAKER HAS BEEN USED TO DE-ENERGIZE THE CIRCUIT.

1. Strip the wires at a length of 10 – 11mm.
2. Thread the AC power wires through the conduit and conduit fitting. Ensure 6 inches of free wire
3. Install the conduit assembly onto the unit.



### Note:

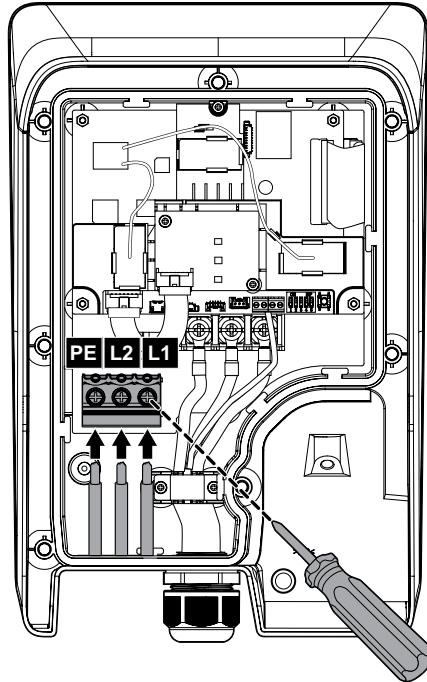
For the torque to use when installing the conduit assembly, please refer to the recommended values listed in the specifications.

4. Connect the AC power wires.
  - a. Insert the corresponding wires into the input terminals marked “PE”, “L2”, and “L1”.
  - b. Torque each terminal with a Phillips-head screwdriver (**torque: 19 ± 2 in-lbs / 2.2 ± 0.2 Nm**).



### Note:

Use 90°C copper conductors only for the AC power wires.

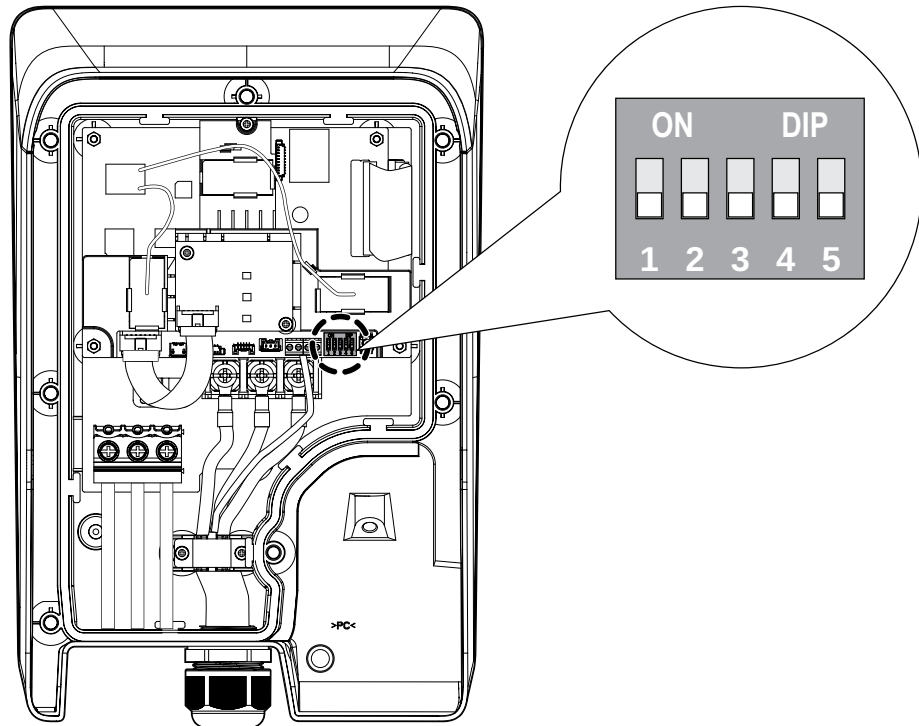


Location	Wire Gauge	Torque
L1 / L2	6AWG max	19 ± 2 in-lbs (2.2 ± 0.2 Nm)
PE	6-10AWG	19 ± 2 in-lbs (2.2 ± 0.2 Nm)

Once you have connected the power wires you can proceed with configuring the DIP switches.

## CONFIGURING THE DIP SWITCHES

The factory default output is 0A for the PowerUp charger. Use the DIP switches to configure the maximum output current ratings.



The following settings can be configured with the DIP switches:

### Maximum Current Settings

Pins 3 to 5 configure the maximum output current ratings.

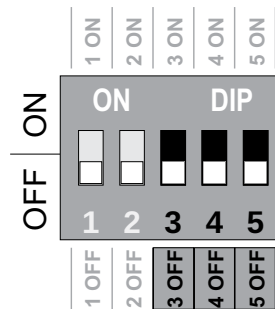
DIP Switch Setting	Configuration	PowerUp AC Amperage	OCPD Breaker Size
00000		0	N/A

DIP Switch Setting	Configuration	PowerUp AC Amperage	OCPD Breaker Size
00100	<p>DIP Switch Configuration for 00100: 5 switches. Positions 1, 2, 4, and 5 are OFF. Positions 3 and 4 are ON.</p>	20	25
00010	<p>DIP Switch Configuration for 00010: 5 switches. Positions 1, 2, 3, and 5 are OFF. Position 4 is ON.</p>	24	30
00110	<p>DIP Switch Configuration for 00110: 5 switches. Positions 1, 2, and 5 are OFF. Positions 3 and 4 are ON.</p>	28	35
00001	<p>DIP Switch Configuration for 00001: 5 switches. Positions 1, 2, 4, and 5 are OFF. Position 3 is ON.</p>	32	40
00101	<p>DIP Switch Configuration for 00101: 5 switches. Positions 1, 2, 4, and 5 are OFF. Position 3 is ON.</p>	36	45

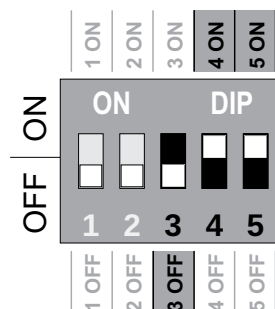
DIP Switch Setting	Configuration	PowerUp AC Amperage	OCPD Breaker Size
00011		40	50
00111		48	60

Refer to the following steps to setup the DIP switches during the initial installation.

1. Open the middle cover and locate the DIP switch. The default setting should be 00000.



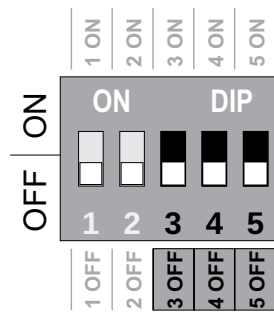
2. Change the DIP switch to the desired output current based on pin configuration table (the example below is for a 40A output current).



3. Place the middle and cosmetic cover back onto the PowerUp charger. See "Completing the Installation" on page 23.
4. Turn on the breaker to power on the PowerUp charger. When the LED is solid. The installer can use the commissioning app to confirm whether the DIP switch setting has been completed.

Refer to the following steps if the output current has already been set using the DIP switches and you want to change the output current.

1. Turn off the breaker to ensure that the customer does not open the cover with the power on.
2. Open the cosmetic and middle cover.
3. Change the DIP switch to the original factory settings (i.e., 00000).

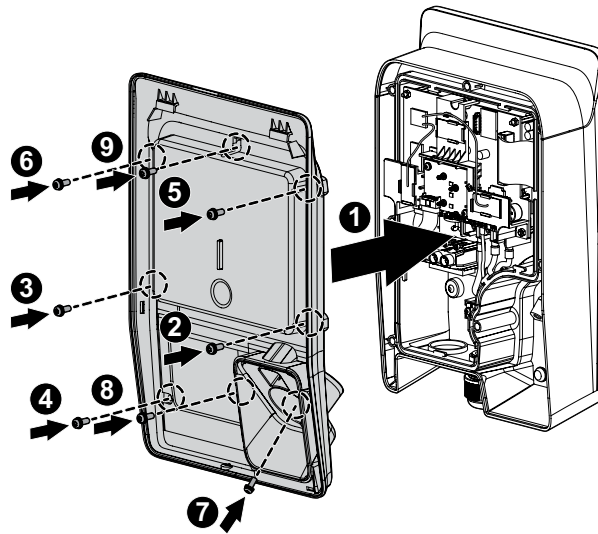


4. Reinstall the middle cover, then power on the PowerUp charger until the LED lights up solid red, white, and green (all on).
5. Turn off the breaker to power off the PowerUp charger.
6. Refer to the steps in the previous section (DIP switch configuration for initial installation).

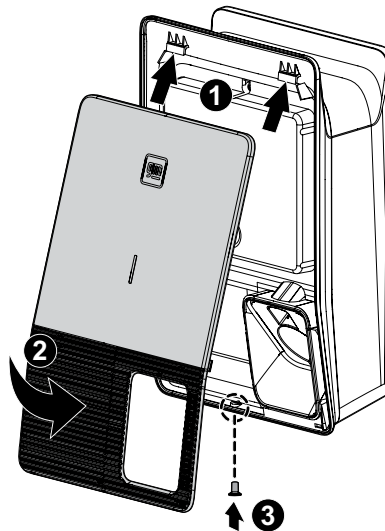
## Completing the Installation

Once you have finished configuring the DIP switches, double-check that all the prior instructions have been followed correctly, and then proceed with the steps below to complete the installation:

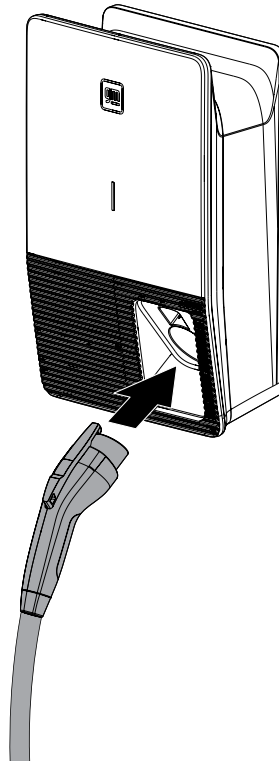
1. Put the middle cover back and fasten the eight screws securely (torque:  $10.5 \pm 0.9$  in-lbs /  $1.2 \pm 0.1$  Nm).



2. Install the cosmetic cover onto the system so that the hooks on the top side are inserted into the corresponding notches on the system first, then push the cover into place, and fasten the single screw securely (torque:  $10.5 \pm 0.9$  in-lbs /  $1.2 \pm 0.1$  Nm).



3. Place the charging cable and coupler onto the plug holder properly.



4. Power the unit by switching on the breaker, then verify that the LED lights up solid white indicating that the PowerUp installation is complete.



**Note:**

- If the LED displays a red, white, and green solid pattern, it indicates the DIP switch setting is not complete.

5. To complete the PowerUp charger setup, follow the steps below to connect your charger to Wi-Fi and the app on your mobile device.

## Wi-Fi and Mobile App Setup

If you haven't already, download your vehicle's mobile app (myChevrolet, my Buick, myGMC, or myCadillac) and log in to the system using your vehicle account credentials.

1. On your home screen tap Add Product.
2. Choose Charger from the list of products.
3. Select Your Charger Model ("PowerUp 2") from the list of chargers.
4. The app will then take you through the setup steps to successfully connect your charger to your local Wi-Fi router.

For any issues with charger setup please call our Support Center at 1-833-64POWER.



## MAINTENANCE

### Annual Requirements

1. Conduct a visual inspection of the charging cable and ensure that cable does not show any visual damage or deformation.
2. Conduct a visual inspection of the charging coupler and ensure that coupler does not show any visual damage, arcing or rust.



#### **WARNING!**

To avoid danger of electrical shock or injury, turn off power at the panel board or load center before working on the equipment or removing any component. Do not remove circuit protective devices or any other component until the power is turned off.

Disconnect electrical power to the EV charging solution before any maintenance work to ensure that it is separated from the supply of AC mains. Failure to do so may cause physical injury or damage to the electrical system and charging unit.



#### **Note:**

- Touching the circuit before the main breaker and auxiliary breaker are switched off may be hazardous. The switching device and other apparatus can only be inspected visually.
- Maintenance of the EV charging solution shall be conducted only by a qualified technician.
- After opening the front door, turn off the main breaker and auxiliary breaker before any maintenance work.

### Cleaning

Regular cleaning of PowerUp Charger is recommended. During charger stand-by state, use a soft lightly-dampened cloth with clear water to remove any dirt, ensure that no water enters the charging coupler.

### Disposal

The PowerUp charger is an electronic device and must be disposed of separately from normal house wastes. It should be disposed of in compliance with local waste disposal and recycling regulations.

## SPECIFICATIONS

Item	Description
Model Name	PowerUp
Model Number	EIAW-U11KSSU7E01
AC Input	208/240Vac, 60Hz 48A max.
AC Output	11.5kW max; 48A max.
Charging Outlet	SAEJ1772/Type1
Operating Temperature	-40 - 122°F (-40 - 50°C)
Storage Temperature	-40 - 185°F (-40 - 85°C)
Humidity	< 95%, non-condensing
Altitude	Up to 4,000m
Enclosure	IK08, NEMA 4X, indoor/outdoor installation
Cabling	25', J1772
Dimension (W x H x D)	8.11 x 13.15 x 3.86 in. (206 x 334 x 98 mm.)
Weight	13.23 lbs. (6 kg.)
Certificates	UL 2594
	UL 2231
	UL 1998
	Energy Star Rated
EMC	FCC Part 15, Class B
Network Interface with Backend	WiFi6

## TROUBLESHOOTING

- Contact customer support if the PowerUp charger appears to malfunction or if the LED indicators display an error.
- Please refer to "LED Indicator Definitions" on page 11 for LED indicator definitions.
- DO NOT open the PowerUp charger, touch or remove the circuit protective devices or any other component.

Scenario	Suggested Action
Indicator does not light	<ol style="list-style-type: none"> <li>1. Make sure the power input is connected correctly and the power is within the operating range of the unit.</li> <li>2. Power cycle the PowerUp charger.</li> <li>3. If the problem persists, contact customer support.</li> </ol>
Indicator blinks red	<ol style="list-style-type: none"> <li>1. Use the mobile app to view the error code from the charger.</li> <li>2. Go to the "Error Codes" on page 28 and try the suggested action. If the error code is not in the table or the problem persists, continue onto the next step.</li> <li>3. Unplug the charging coupler.</li> <li>4. Power cycle the PowerUp charger.</li> <li>5. If the problem persists, contact customer support.</li> </ol>
Indicator illuminates solid red	<ol style="list-style-type: none"> <li>1. Possible critical error (e.g., hardware fault).</li> <li>2. Unplug the charging coupler.</li> <li>3. Power cycle the PowerUp charger.</li> <li>4. If the problem persists, contact customer support.</li> </ol>
Indicator does not flash green after plugging the charging coupler to the EV	<ol style="list-style-type: none"> <li>1. Check if the charging coupler is fully inserted into the EV.</li> <li>2. Check if the battery on the EV is full.</li> <li>3. If the problem persists, contact customer support.</li> </ol>
All indicators (white + green + red) are solidly illuminated	Installation is not complete, contact the installer to complete the installation process.

## ERROR CODES

Error Code	Name / Description	Suggested Action
081	OVP (Over Voltage Protection)	The PowerUp charger will auto-recover once the voltage is normal. If it doesn't, restart the PowerUp charger or contact customer support.
083	UVP (Under Voltage Protection)	
082	OCP (Over Current Protection)	Unplug the charging coupler and plug it in again. If the same error code occurs, seek support from the supplier of the EV.
085	RCD	Unplug the charging coupler and restart the PowerUp charger. If the same error code occurs, contact customer support.
086	RCD self-test fail	Restart the PowerUp charger. If the same error code occurs, contact customer support.
087	Welding Fault	Restart the PowerUp charger. If the same error code occurs, contact customer support.
088	GMI (Ground Monitor Interrupter)	The PowerUp charger will auto-recover. Check the ground system and wait 10 seconds for recovery. Ensure an electrician is on hand in case you need to open the PowerUp charger system.
091, 100	Pilot Error	Unplug the charging coupler, the PowerUp charger will auto recover. If the same error code occurs, contact customer support.
084, 090, 092, 098	OTP (Over Temperature Protection)	Wait for the PowerUp charger to recover and check if any heat source is around the PowerUp charger. If yes, try to remove the heat source.
093, 094, 099	NTC Error	Restart the PowerUp charger. If the same error code occurs, contact customer support.
096	Meter communication failed	Restart the PowerUp charger. If the same error code occurs, contact customer support.
097	Driving Fault	Unplug the charging coupler and restart the PowerUp charger. If the same error code occurs, contact customer support.
106	DIP switch setting failed	Refer to "Configuring the DIP Switches" on page 19.
110	Internal communication failed	Restart the PowerUp charger. If the same error code occurs, contact customer support.



PowerUp