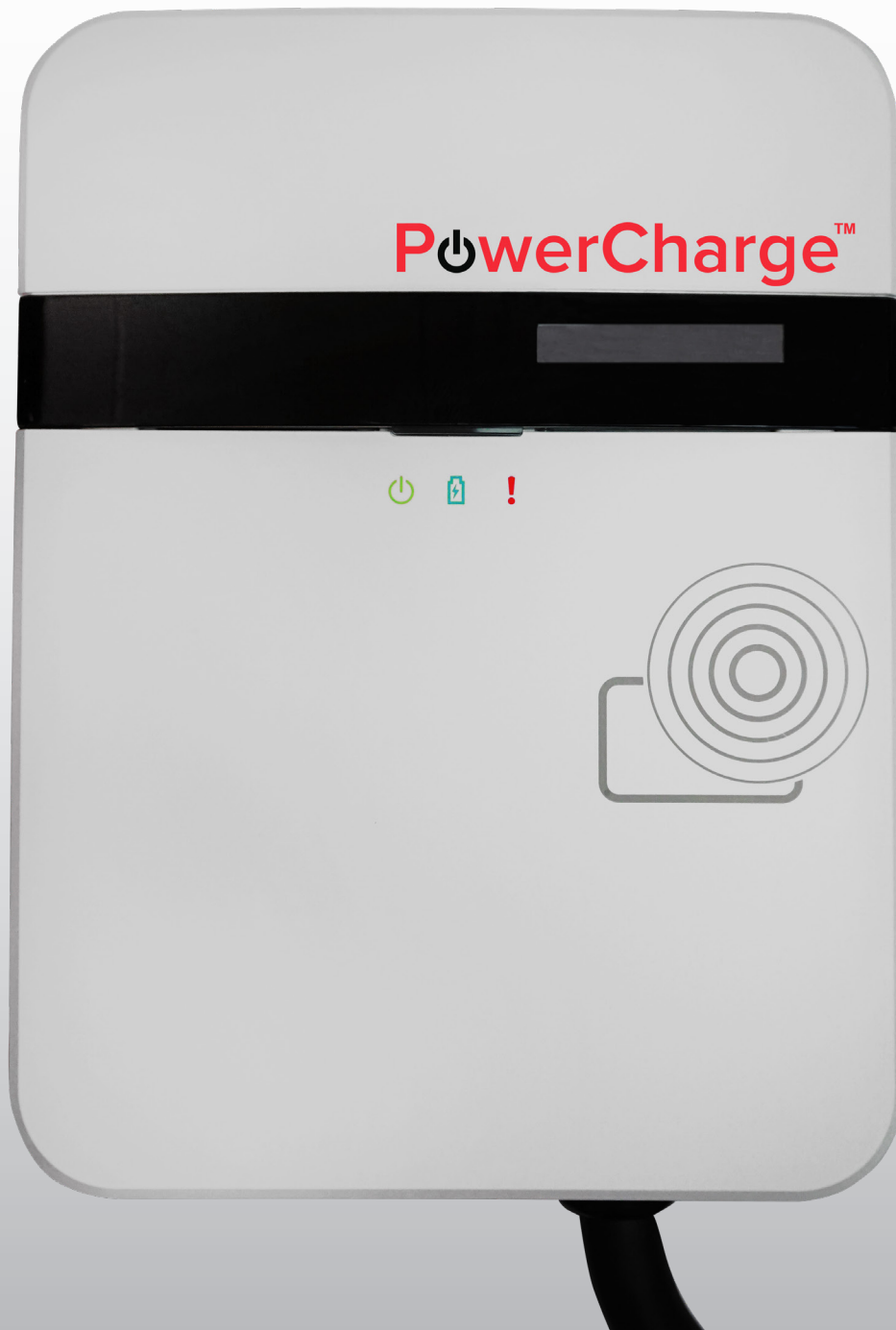


PowerCharge™



USER MANUAL

POWERCHARGE™ ENERGY SERIES 80 AMP EV CHARGING STATION

POWERCHARGEV.COM

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IMPORTANT SAFETY INSTRUCTIONS

This document contains instructions and warnings that must be followed when installing and using the Electric Vehicle Supply Equipment (EVSE).

Before installing or using the EVSE, read this entire document as well as **WARNING** and **CAUTION** markings in this document.

The information provided in this manual in no way exempts the user of responsibility to follow all applicable codes or safety standards.

This document provides instructions for the Electric Vehicle Supply Equipment (EVSE) and should not be used for any other product.

Safety Instructions

The symbols used have the following meaning:



WARNING

Risk of personal injury



WARNING

Risk of electrical shock



WARNING

Risk of fire or explosion



CAUTION

Risk of damage to the equipment

Repair and Maintenance Clause

Only licensed electricians can repair or maintain this equipment. It is forbidden for general users to repair or maintain it.

Turn off input power before repair or maintenance on this equipment.

General Care

The exterior of the charge point is designed to be waterproof and dust proof. To ensure proper maintenance of the charging station, follow these guidelines:

- Despite the water resistance of the enclosure, when cleaning it is preferred to not direct streams of water at the unit. Clean with a soft, damp cloth.
- Make sure the charging plug is put back in the holster after charging to avoid damage.
- Ensure the power cable is stored on the charge point after use to avoid damage.
- If the power cable or the charging plug is damaged, please contact Customer Support.

Customer Support

Contact PowerCharge™ for technical support.
PowerChargeEV.com | (585) 533-4085

Federal Communication Commission Interference Statement

This equipment complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This equipment may not cause harmful interference, and (2) this equipment must accept any interference received, including interference that may cause undesired operation.

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.

Changes or modifications not covered in this Guide must be approved in writing by the manufacturer's Regulatory Engineering Department. Changes or modifications made without written approval may void the user's authority to operate this equipment.

Industry Canada statement:

This equipment complies with ISED's license-exempt RSSs. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this equipment must accept any interference received, including interference that may cause undesired operation.

Le présent appareil est conforme aux CNR d'ISED applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes: (1) le dispositif ne doit pas produire de brouillage préjudiciable, et (2) ce dispositif doit accepter tout brouillage reçu, y compris un brouillage susceptible de provoquer un fonctionnement indésirable.

Radiation Exposure Statement:

This equipment complies with ISED radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with greater than 20cm (approx. 8") between the radiator & your body.

Déclaration d'exposition aux radiations:

Cet équipement est conforme aux limites d'exposition aux rayonnements ISED établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé à plus de 20 cm entre le radiateur et votre corps.

**WARNING: RISK OF PERSONAL INJURY**

This equipment is intended only for charging vehicles that do not require ventilation during charging. Please refer to your vehicle's owner's manual to determine ventilation requirements.

**WARNING: RISK OF PERSONAL INJURY**

Do not use extender cables to increase the length of the charging cable. Maximum length is limited to 25 feet by the National Fire Protection Agency.

**WARNING: RISK OF PERSONAL INJURY**

Do not drag this equipment by input power cord.

**WARNING: RISK OF ELECTRICAL SHOCK**

Basic precautions should always be followed when using electrical products, including the following:

- Read all the instructions before using this equipment.
- This equipment should be supervised when used around children.
- Do not put fingers into the EV connector.
- Do not use this equipment if the flexible power cord or EV cable is frayed, has broken insulation, or any other signs of damage.
- Do not use this equipment if the enclosure or the EV connector is broken, cracked, open, or shows any other indication of damage.

**WARNING: RISK OF ELECTRIC SHOCK**

Improper connection of the equipment grounding conductor can 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.

**WARNING: RISK OF ELECTRIC SHOCK**

Do not touch live electrical parts. Incorrect connections may cause electric shock.

**WARNING: RISK OF ELECTRIC SHOCK**

Do not remove cover or attempt to open the enclosure. No user serviceable parts inside. Refer servicing to qualified service personnel.

**WARNING: RISK OF FIRE OR EXPLOSION**

To reduce the risk of fire, replace only with same type and rating of fuse.

**WARNING: RISK OF FIRE OR EXPLOSION**

This equipment has internal arcing or sparking parts which should not be exposed to flammable vapors. It should not be located in a recessed area or below floor level. Automatic reset feature provided.

**WARNING: RISK OF FIRE OR EXPLOSION**

Do not use this device with an extension cord.

**CAUTION: RISK OF DAMAGE TO THE EQUIPMENT**

Do not operate this equipment in temperatures outside its operating range of -31°F to +131°F (-35°C to +55°C).

**CAUTION: RISK OF DAMAGE TO THE EQUIPMENT**

Store this equipment in a clean dry place in temperatures between -40°F to +176°F (-40°C and +80°C).

**CAUTION: RISK OF DAMAGE TO THE EQUIPMENT**

Do not exceed maximum 150V to ground.

SAVE THESE INSTRUCTIONS

1 INTRODUCTION

This user manual applies to “80A Level 2 AC Charger for Plug-in Electric Vehicles (PEVs) and Battery Electric Vehicles (BEVs)”.

The Level 2 Electric Vehicle Supply Equipment (EVSE) with 80A capabilities will be used in North America. It can provide a shorter charging time than the 32A & 40A EVSE.

Any unauthorized modifications will void the manufacturer’s warranty!

1.1 Product View

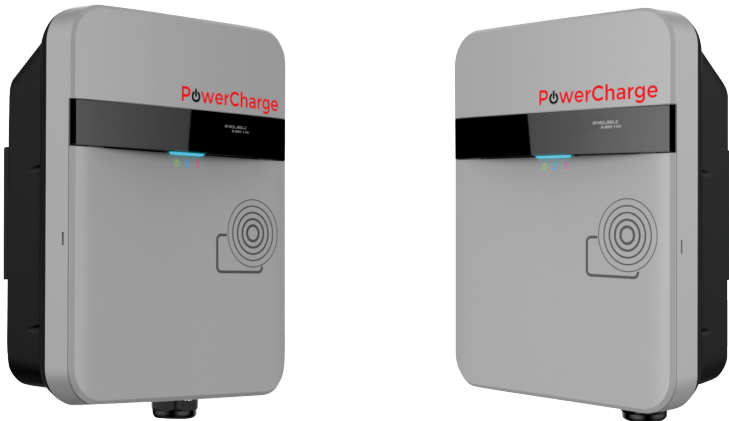


Figure 1-1
Left and Right Angle. Front

1.2 Box Contents

Inside the box, you will find the following accessories:

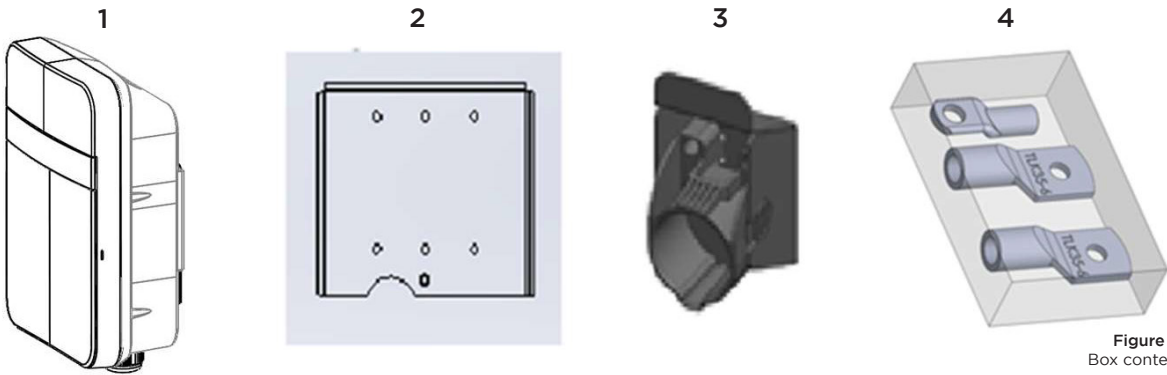


Figure 1-2
Box contents

ITEM	DESCRIPTION	QTY	NOTES
1	Basic Charger-80A or Platinum Networked-80A	1	
2	Mounting Bracket	1	Attached to the back of the charging unit
3	Holster Assembly	1	With Hook x1, Holster x1 & M4xL15 tapping screw x2
4	Accessories Bag	1	#2 AWG Ring terminal lug x 2 #8 AWG Ring terminal lug M6 machine screw x1

Table 1-3
Accessories in box

2 TECHNICAL SPECIFICATIONS

2.1 Product Specifications

APPLICATION	RESIDENTIAL (Open Access)	COMMERCIAL (RFID Access Control)	COMMERCIAL (Networked)
Voltage (Vac)	208/240VAC (-20% ~ + 15%), Single Phase		
Frequency (Hz)	60Hz		
Current (Rms)	Max. 80 A		
Charging Connector	SAE J1772 Type 1		
Indications	<ul style="list-style-type: none">• Green Steady: Ready• Green Flashing (Fast): Authorized, wait for EV Connect• Green Flashing (Slow): Suspend (Occupying)• Blue Flashing (Slow): Charging• Red Steady: Unrecoverable Fault• Red Flashing (Slow): Recoverable Fault• Yellow Flashing (Slow): Booting / Firmware Upgrading / Out of Service Remark• Fast Flash: On Time 300ms, Off Time 200ms, 2Hz• Slow Flash: On Time 1200ms, Off Time 800ms, 0.5Hz		
Wi-Fi	N/A	802.11 b/g/n	
Ethernet	N/A	YES	
BLE	YES	N/A	
Cellular	N/A		M2M connection (LTE CAT.M1 / CAT.NB IoT)
RFID	N/A		ISO 14443 A/B, ISO 15693, NEMA interoperability protocol
Display	N/A	116(L)*8.5(W)*37(H)mm, 5.57mm CHARACTER HEIGHT, 5*8 DOT MATRIX, OLED 20x2	
Data Protocol	N/A		OCPP 1.6
Operation Temp.	-31°F to 131°F (-35°C ~ 55°C)		
Storage Temp.	-40°F to 176°F (-40°F ~ 80°F)		
Mounting Type	Wall mount / Pedestal mount (optional)		
Wiring Type	Hard-wired		
Enclosure Level	NEMA 3R		
Impact Resistance	IK10		
Dimension (H x W x D)	14.1"x10.6"x5.5"		
Web Portal Management	N/A	YES	
Console Management	YES		
Certification	UL 1998/2231/2594 FCC Part 15B		
	FCC Part 15.247 (Bluetooth 2.4GHz)	FCC Part 15.225 (RFID 13.56MHz) FCC Part 15.247 (WLAN 2.4GHz) Energy Star	
	N/A		FCC Part 22/24/27

Table 2-1
Product specifications chart

3 PRE-INSTALLATION

3.1 Pre-installation Safety Check

Check for transport damages.

The charging station must be installed only by a licensed electrician in accordance with the provisions of the local electrical industry construction and should comply with national electrical codes and standards.

Before installing the charging station, make sure you have read all of these instructions in this manual and fully understand its contents.

Before connecting the product to the power supply, check that the power supply voltage and current rating corresponds with the power supply details shown on the product rating label.

Appropriate protection is required when connecting to a main switchboard. The tools and parts used as outlined in the section “Tools & parts required for installation”.



CAUTION

Disconnect the power supply before installing or repairing the charging station. Failure to do so may result in physical injury or damage to the power supply system and the charging station.



CAUTION

Avoid touching or pressing the OLED screen all times, as this may result in damage to the OLED screen.



DANGER

Keep any packing materials away from children – these materials are a potential source of danger, e.g. suffocation.



CAUTION

Cord extension sets are not allowed to be used.

3.2 Grounding Instructions

The charging station must be grounded through a permanent wiring system or an equipment grounding conductor. Use a wire with a dedicated grounding wire, a ring terminal, and connect to the equipment ground terminal block for grounding.

3.3 Unboxing the charging station

Open the carton and remove the EPE Foam. Take out the charging unit and then remove the mounting bracket before installing it.

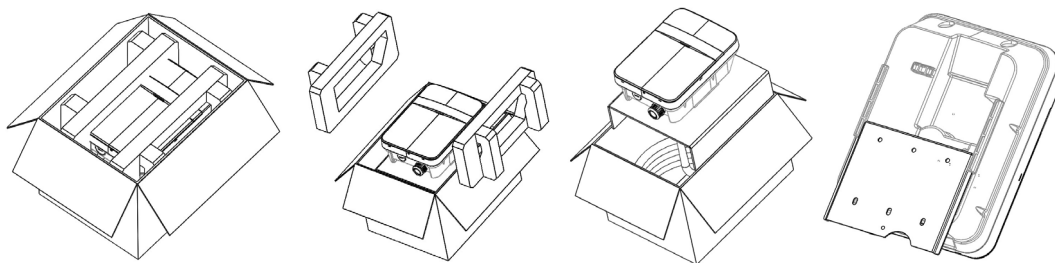


Figure 1-6
Open box, remove EPE foam, take out charging unit,
remove the mounting bracket

3.4 Tools & Parts Required for Installation

TOOL	QTY	SIZE	SUPPLIER	NOTES
Mounting Bracket	1	222x173x9 mm	All Product Models	Fasten charging station to the wall
Holster Assembly	1	58x58x70 mm	Model Accessories	Hold EV charging plug
Screws	4	Tapping: #12	Commercially Available	Fasten Mounting Bracket & Hook
		Mechanical: M6	Commercially Available	
	1	Mechanical: M6	Model Accessories	Fasten Charging Station & Mounting Bracket
Wire, Copper	3	2 AWG	Commercially Available	
Heat Shrink Tube	3	For 2 AWG wire Color: Red, Black, Green.	Model Accessories	Protect wires & terminals
Terminal	3	For 2 AWG wire	Model Accessories	Connect input wires to the terminal block
Conduit	1	1 inch	Commercially Available	Protect power cable
Philips Screwdriver	1	PH3	Commercially Available	
Torx Screwdriver	1	T20	Commercially Available	
Hexagon Socket	1	5/16	Commercially Available	Tighten #12 Tapping screws
Torque Wrench	1	40 kgf-cm min	Commercially Available	

Table 3-3
Table of tools & parts required

4 INSTALLATION STEPS

4.1 Disassemble top cover

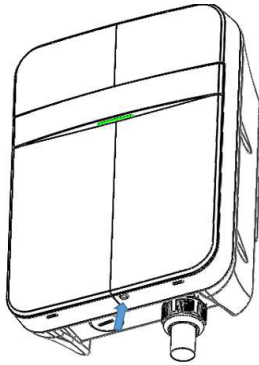


Figure 4-1
Loosen (1) M4 Screw

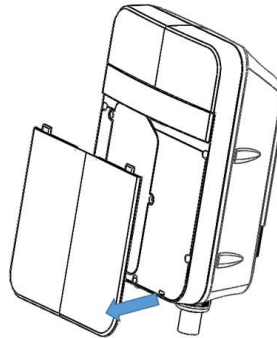


Figure 4-2
Use flat tip screwdriver to push snap then open front cover plate

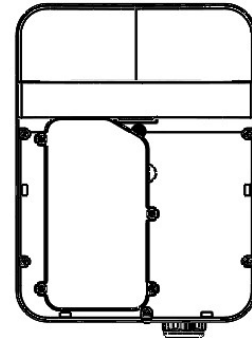


Figure 4-3
Loosen (5) M4 screws then open install cover

4.2 Find SIM card socket.

(Networked Charger only)

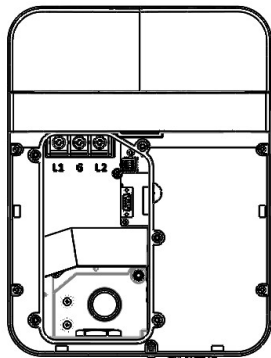


Figure 4-4
Position of SIM card socket

4.3 Insert SIM card.

Unlock the SIM Card socket

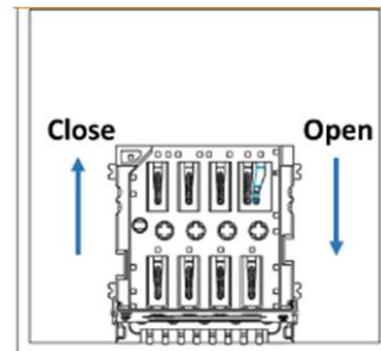


Figure 4-5
SIM card socket and cover
Open/Close direction

4.4 Open the socket then install SIM card

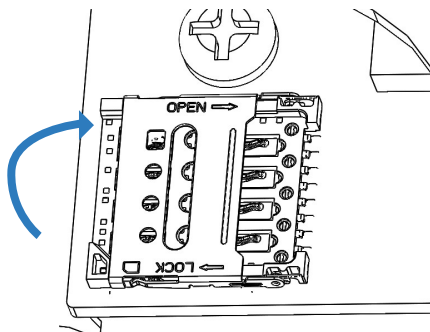


Figure 4-6
Open the socket cover

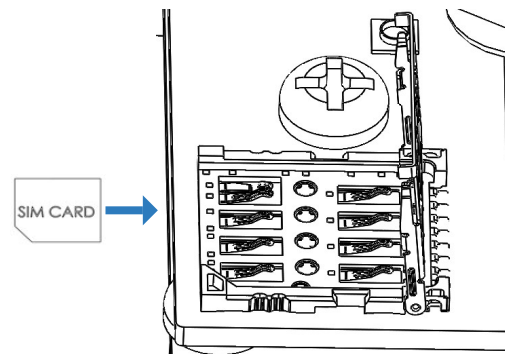


Figure 4-7
Input the SIM Card

4.5 Secure the main body mounting bracket to the wall* with appropriate screws.

Follow applicable accessibility requirements for the mounting position. The unit shall be stored or located at a sufficient height. For indoor site, it is not lower than 18" (450 mm) and not higher than 48" (1.2m). For outdoor site, it is not lower than 24" (600 mm) and not higher than 48" (1.2m). Refer to Article 625, NEC.

The mounting bracket has ten screw holes. If only two screws be used to fasten the mounting bracket, the screws should pass through the middle two screw holes of the mounting bracket. The other screw holes are reserved for the user.

***If mounting to a pedestal, follow pedestal installation manual.**

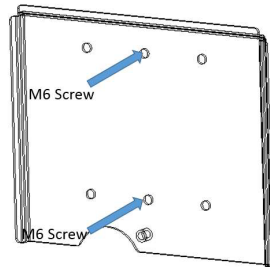


Figure 4-8
Fasten mounting bracket

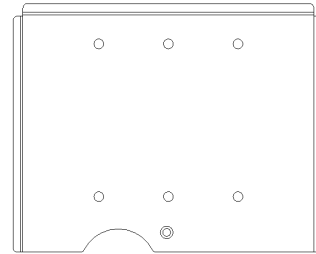


Figure 4-9
Screw holes of mounting bracket

Screw sizing suggestion:

- For masonry walls, use M6 mechanical screws.
- For finished walls supported by wood studs, use #12 tapping screws.
- See torque chart below (be sure to use torque appropriate for desired mounting surface)

SCREW	TORQUE	
M6	21.7 lb-in min	25 kgf.cm min
#12	21.7 lb-in min	25 kgf.cm min

4.6 Fasten charging station onto mounting bracket.

Put the charging station on the mounting bracket.

Fasten charge point on mounting bracket by tightening M6 screw. See torque chart.

SCREW	TORQUE	
M6	25.6 lb/in	30 kgf.cm

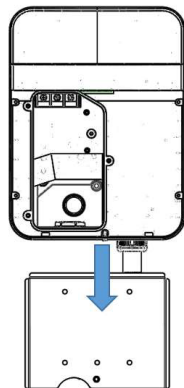


Figure 4.10
Charging station and mounting bracket

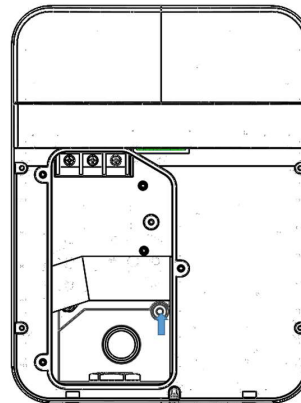


Figure 4.11
Tighten M6 screw

5 INPUT POWER CORD INSTALLATION

5.1 Choose the appropriate conduit in accordance with all applicable state, local, and national electrical codes & standards.

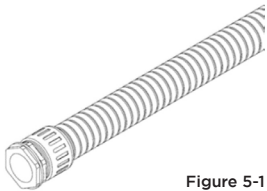


Figure 5-1
Conduit

5.2 Clamp copper terminal to connect copper wire.

The clamp point is covered by heat shrink tube for protection. Refer to the following wire specification below. Use conductor type other than RHH, RHW and RHW-2 with outer covering.

MODEL	TERMINAL	CONDUCTOR	RATING
PowerCharge™ Energy Series 80 AMP	L1, L2	2 AWG	90C copper wire
	G	8 AWG	



Figure 5-2
Copper terminal, heat shrink tube, and copper wire.

5.3 Electrical wiring to the charging station.

Fold the wire end to pass through the conduit and insert them into the input hole (choose input direction 1 or 2 and open cap).

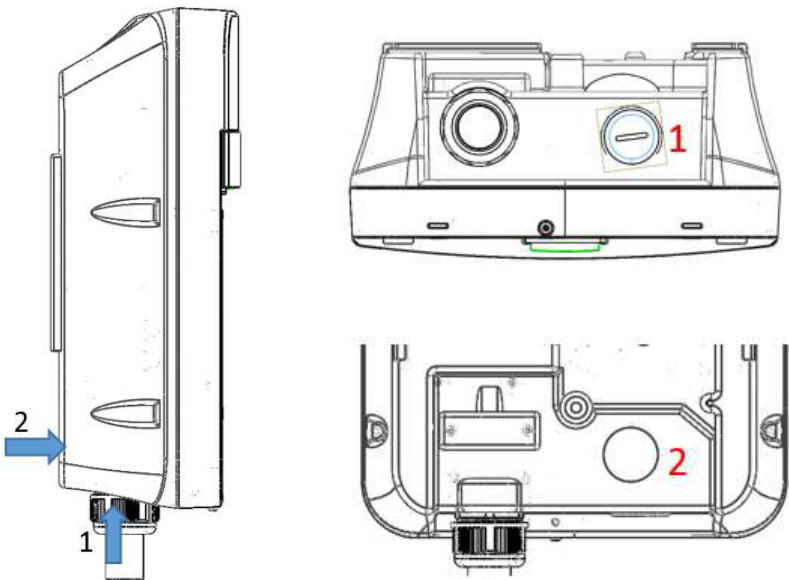


Figure 5-3
Cable input position

5.4 Electrical wiring to the charging station.

Fasten the copper wire on the corresponding terminal block. The wiring instruction is printed in front of the terminal block (L1/L2/G).

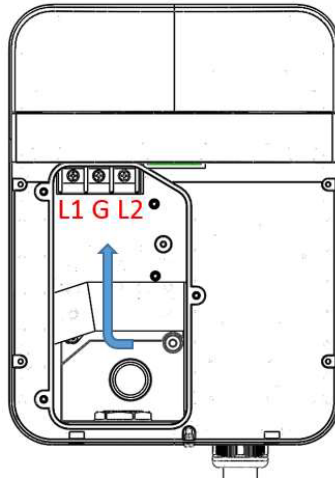


Figure 5-4
Input wiring position

Use the following torque to connect the wire terminal to the terminal block.

SCREW	TORQUE	
M6	25.6 lb/in	30 kgf.cm



CAUTION

To reduce the risk of fire, connect only to a circuit provided with 100 amperes maximum branch circuit overcurrent protection in accordance with the National Electrical Code, ANSI/NFPA 70, and the Canadian Electrical Code, Part I, C22.2.



CAUTION

If this unit is installed outdoors, the outlet must be rated for outdoor installation. The outlet must be installed properly to maintain the proper NEMA rating of the enclosure.

5.5 Lock the conduit on the enclosure

Please refer to the torque chart.

SCREW	TORQUE	
1"	30.36 lb-in	35 kgf.cm

5.5 Reassemble instant cover and front cover

Fasten M4 screw & refer to torque chart.

SCREW	TORQUE	
M4	12 lb-in	15 kgf.cm

6 INSTALLING THE HOLSTER

6.1 Separate the holster from the hook.

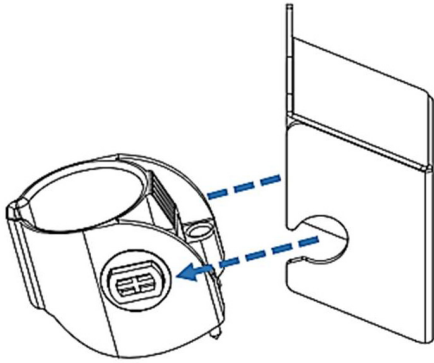


Figure 6-1
Separate the holster

6.2 Fasten the hook on the wall with appropriate screws.

For finished walls supported by wood studs, use (2) screws (#12 tapping or M6). The recommend torque is 21.7 lb-in (25 kgf.cm).

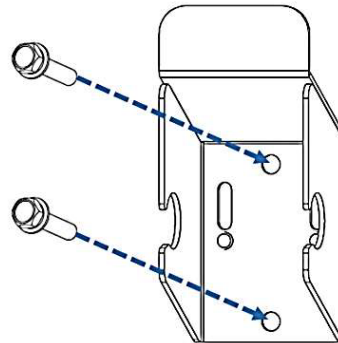


Figure 6-2
Secure the hook

6.3 Turn the holster face up and combine with the hook.

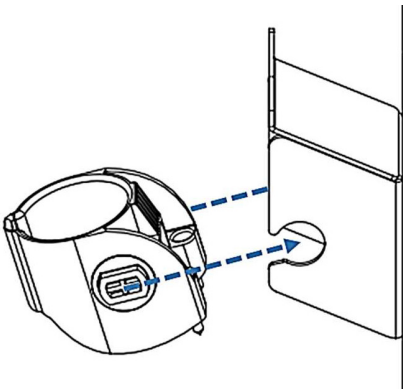


Figure 6-3
Secure the holster

6.4 Rotate the holster down.

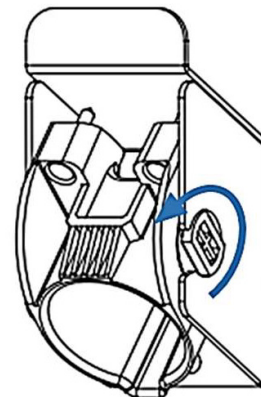


Figure 6-4
Rotate the holster

6.5 Maintain holster position and tighten screws.

The recommend torque is 5.2 lb-in (6 kgf.cm).

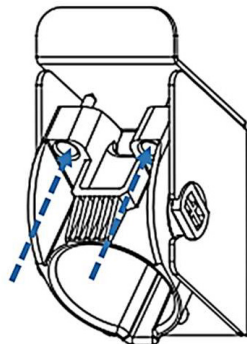


Figure 6-5
Tighten screws

6.6 Place EV charging plug on the holster.

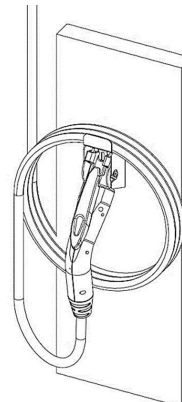










Figure 6-6
Place EV charging plug

7 OPERATIONS

7.1 Charging Status Indicators

LED INDICATOR	DESCRIPTION	DEFINITION
	Not illuminated	Power Off
	Steady Green	Ready
	Flashing Green	Flashing green (Fast): Authorized, wait for EV connection Flashing green (Slow): Suspend (Occupying)
	Flashing Blue	Flashing blue (Slow): Charging
	Steady Red	Unrecoverable Fault
	Flashing Red	Recoverable Fault
	Steady Purple	Reserved (from OCPP Service)
	Flashing Yellow	Booting / Firmware Upgrading / Out of Service

8 CHARGING YOUR ELECTRIC VEHICLE

8.1 Plug and Charge (Open Access)

1. Insert the charging plug into the EV
2. Charging session started



Figure 8-1
Connect the charging plug to the EV

8.2 RFID Card (Networked Version Only)

1. Insert the charging plug into the EV
2. Swipe card
3. Waiting for authorization
4. Charging session begins

8.3 Stop charging

1. Unplug any time (disconnect the charging plug from EV to stop charging session)
2. Session ended, return the connector to the holster

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