



Power Max 2 Charging Station

en Installation and Operating Instructions

Contents English.4

Table of Contents

| | | |
|----------|--|-----------|
| 1 | Introduction | 5 |
| 1.1 | Applications | 5 |
| 2 | Important Safety Warnings and Instructions | 5 |
| 3 | About the Charger | 5 |
| 4 | Installation | 6 |
| 4.1 | Important SAFETY WARNINGS and Instructions | 6 |
| 4.2 | Grounding Instructions | 6 |
| 4.3 | Recommended Tools | 6 |
| 4.4 | Installing the Power Max 2 Charging Station | 6 |
| 5 | Specifications | 8 |
| 6 | Operating Instructions | 9 |
| 6.1 | Instruction Pertaining to the Risk of Electric Shock | 9 |
| 6.2 | Power On/Off Switch | 9 |
| 6.3 | Status Indicator | 9 |
| 6.4 | Charging an Electric Vehicle | 9 |
| 7 | Additional Information | 10 |
| 7.1 | Network Setting (EL-51866-4025P only) | 10 |
| 7.2 | Log File Download and Firmware Upgrade by USB | 10 |
| 7.3 | Auto Restart | 10 |
| 7.4 | Power Outage Recovery | 10 |
| 7.5 | Remote Control (EL-51866-4025P only) | 10 |
| 8 | Troubleshooting | 10 |
| 9 | Important Notices | 11 |
| 9.1 | Limited Warranty | 11 |
| 9.2 | Disclaimer | 11 |
| 9.3 | Limitation of Liability | 11 |
| 9.4 | Copyrights, Trademarks | 11 |

1 Introduction

The Power Max 2 Charging Station is designed for the North American market to charge plug-in electric vehicles (PHEV) and battery electric vehicles (BEV).

This document provides instructions for the Power Max 2 Charging Station and is not for use for any other product. Before installation or use of this product, you should review this manual carefully and consult with a licensed contractor, licensed electrician, or trained installation expert to ensure compliance with building codes and safety standards.

1.1 Applications

- ▶ Residential
- ▶ Private and public parking facilities
- ▶ Fleet
- ▶ Shopping malls and retailers
- ▶ Workplace

Please read and follow these safety warnings and operating instructions carefully before operating the Power Max 2 Charging Station. Failure to follow these instructions may result in serious injury or property damage.

2 Important Safety Warnings and Instructions

IMPORTANT SAFETY INSTRUCTIONS. SAVE THESE INSTRUCTIONS.



WARNING!

Disconnect electrical power before installing the Power Max 2 Charging Station. Failure to do so may cause physical injury or damage to the electrical system and charging unit.

- ▶ Read all the instructions before using this product.
- ▶ Children should be supervised when this product is used around children.
- ▶ Do not put fingers into the EV connector.
- ▶ Do not use this product if the flexible power cord or EV cable are frayed, have broken insulation, or display any other signs of damage.
- ▶ Do not use this product if the enclosure or the EV connector is broken, cracked, open, or show any other signs of damage.
- ▶ A device employing pressure terminal connectors for field wiring connections shall be provided with instructions specifying a range of values or a nominal value of tightening torque to be applied to the clamping screws of the terminal connectors.



CAUTION

To reduce the risk of fire in hard-wired units, connect the unit only to a circuit provided with maximum branch circuit overcurrent protection as show below in accordance with the National Electrical Code, ANSI/NFPA 70.

| Model | Current Rating |
|---------------|----------------|
| EL-51866-40XX | 50 A |
| EL-51866-30XX | 40 A |



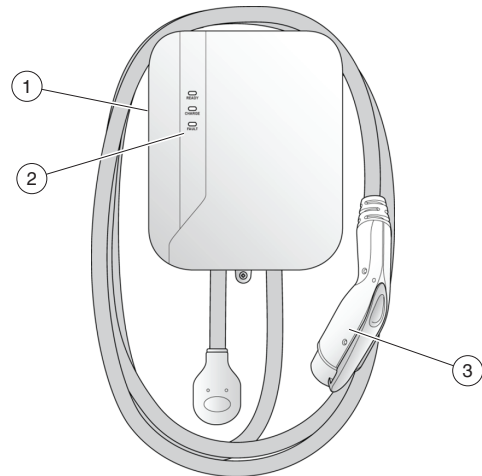
CAUTION

To reduce the risk of fire in cord-connected units, connect only to a circuit provided with maximum branch circuit overcurrent protection as shown below in accordance with the National Electrical Code, ANSI/NFPA 70.

| Model | Current Rating |
|---------------|----------------|
| EL-51866-40XX | 50 A |
| EL-51866-30XX | 50 A |

- ▶ The Power Max 2 Charging Station shall be installed only by a licensed contractor, and/or a licensed electrician in accordance with all applicable state, local and national electrical codes and standards.
- ▶ Before installing the Power Max 2 Charging Station, review this manual carefully and consult with a licensed contractor, licensed electrician and trained installation expert to ensure compliance with local building practices, climate conditions, safety standards, and state and local codes.
- ▶ Use appropriate protection when connecting to the main power distribution cable.

3 About the Charger



1. **On/Off switch**
2. **Status indicator**
 - ▶ Ready
 - ▶ Charge
 - ▶ Fault
3. **Charging plug**
 - ▶ SAE J1772 compliant

4 Installation

4.1 Important SAFETY WARNINGS and Instructions

IMPORTANT SAFETY INSTRUCTIONS. SAVE THESE INSTRUCTIONS.



WARNING

Danger of electrical shock or injury. Turn off power at the panel board or load center before working inside the equipment or removing any component. Do not remove circuit protective devices or any other component until the power is turned off.

The Power Max 2 Charging Station shall be installed only by a licensed contractor, and/or a licensed electrician in accordance with all applicable state, local and national electrical codes and standards.

Before installing the Power Max 2 Charging Station, review this manual carefully and consult with a licensed contractor, licensed electrician, and trained installation expert to ensure compliance with local building practices, climate conditions, safety standards, and state and local codes.

Use appropriate protection when connecting to the main power distribution cable.

4.2 Grounding Instructions

The Power Max 2 Charging Station 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.

4.3 Recommended Tools

The following tools are recommended for the Power Max 2 Charging Station installation:

- ▶ Vendor supplied accessories and components:
 - Mounting bracket
 - Mounting template
 - Cable hanger bracket (optional)
 - Torx T30 bolts (x2) for securing the Power Max 2 Charging Station to the mounting bracket
 - 1/4-in. expansion bolts (x3)
 - No. 8 wood screws (x3)
 - Terminal crimps (x3)
- ▶ Installer-supplied components:
 - Conduit of appropriate trade size for power wire
 - NEMA 6-50R receptacle
- ▶ Recommended tools:
 - Torx T30 screwdriver
 - Torx T20 screwdriver
 - Phillips #2 screwdriver
 - Flathead slotted #5 screwdriver
 - Terminal crimper

4.4 Installing the Power Max 2 Charging Station

1. See Figure 4-1. Use the supplied template to locate the mounting bracket above the electrical receptacle.

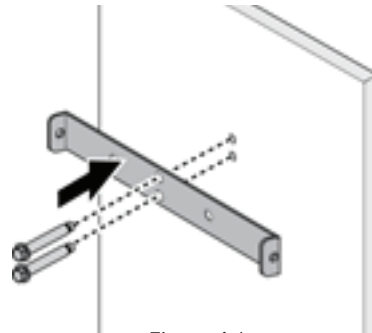


Figure 4-1.

Note: Follow applicable accessibility requirements for the mounting position. The unit shall be mounted at a sufficient height from grade such that the height of the storage means is located between 600 mm (24 in.) and 1.2 m (4 ft) from grade per NEC Article 625.

2. Secure the mounting bracket and the optional cable hanger bracket to the wall with appropriate bolts as follows:
 - For masonry walls use 1/4-in. expansion bolts and torque to 78 lb•in (8.8 N•m).
 - For finished walls supported by wood studs use #8 wood screws of 2 in. or above screw length and torque to 26 lb•in (3 N•m).
3. See Figure 4-2. Align the screw holes of the mounting bracket with the Power Max 2 Charging Station. Install and secure the Power Max 2 Charging Station on the mounting bracket with the two (2) Torx T30 screws supplied. Torque to 13 lb•in (1.5 N•m).

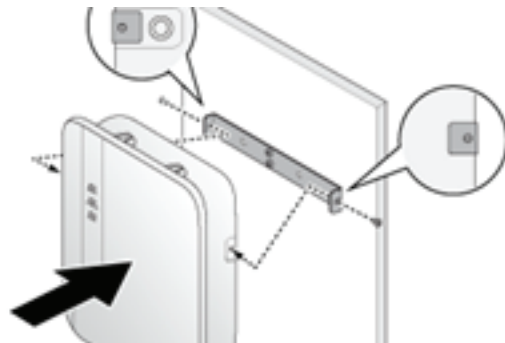


Figure 4-2.

4. See Figure 4-3. Secure mounting tab to wall.

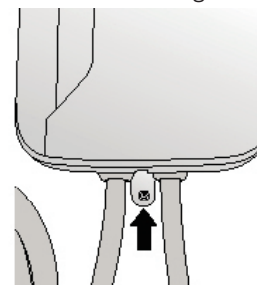


Figure 4-3.

5. If installed above a receptacle, the installation is complete. For hardwired installation, continue to Step 6.

6. See Figure 4-4. Remove the screw located at the bottom of the front cover.

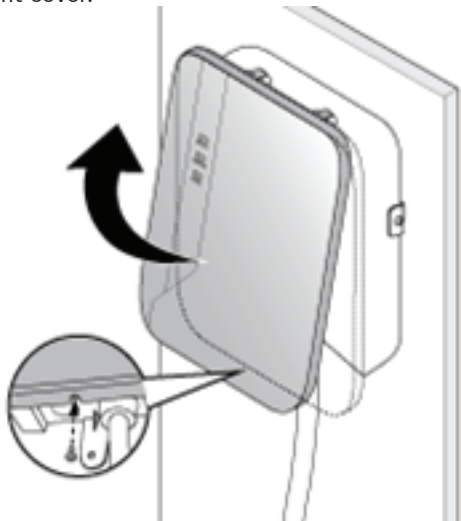


Figure 4-4.

7. See Figure 4-5. Hold the front cover. Flip upward and then shift leftward to separate the front cover from the charger.

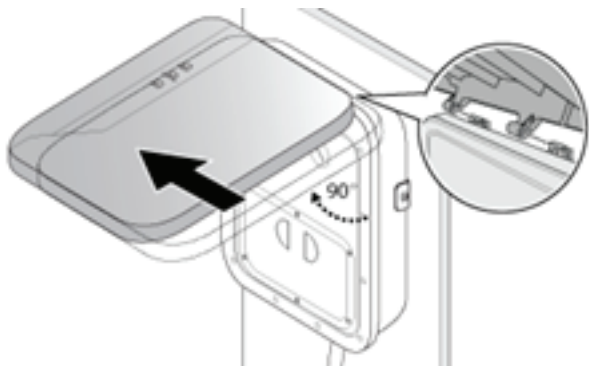


Figure 4-5.

8. Remove the compartment cover.
9. See Figure 4-6. Use appropriate copper wire with listed pressure terminal connectors, such as ring and fork types, on the end of the conductor before attachment to the terminal blocks. Keep enough length of wire to facilitate installation. Connect each terminal to the correct terminal input block connector in the compartment and torque to 19 lb•in (2.2 N•m).

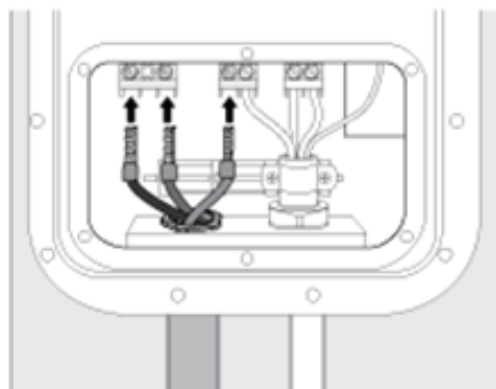


Figure 4-6.

Note: Choose appropriate conduit in accordance with all applicable state, local, and national electrical codes and standards.

10. See Figure 4-7. Replace the compartment cover and torque to 8.7 lb•in (1.0 N•m).

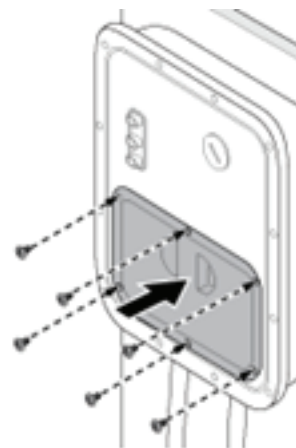


Figure 4-7.

11. Replace the front cover by aligning the hinge on the top. Secure the front cover by the bottom screw, torque to 10.4 lb•in (1.2 N•m).
12. See Figure 4-8. Place the charger cable properly.

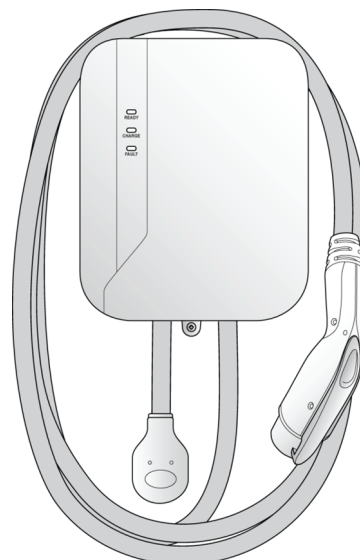


Figure 4-8.

| Model | Copper Wire Type |
|---------------|---------------------------|
| EL-51866-40XX | No. 6 AWG, 90 °C |
| EL-51866-30XX | No. 8 AWG, 75 °C or 90 °C |

5 Specifications

| Model | EL51866-30XX | EL51866-40XX |
|-------------------------------------|--|---|
| Charging Interface | SAE J1772 compliant plug | |
| Input Rating | 208-240 Vac, single-phase, 30 A max, 60 Hz | 208-240 Vac, single-phase, 40 A max, 60 Hz |
| Wiring for Hard-wired Models | L1, L2, and Ground, hard-wired with terminal block; bottom-fed | |
| Wall Plug for Cord-connected Models | NEMA 6-50P | |
| Output Rating | 208-240 Vac, single phase, 30 A max., 60 Hz, 7.2 kW | 208-240 Vac, single phase, 40 A max., 60 Hz, 9.6 kW |
| Standby Power | <5W | |
| Metering | Embedded non-revenue grade meter with 1% accuracy | |
| Internal Residual Current Detection | 20 mA CCID per UL 2231 | |
| Upstream Breaker | 2-pole 40 A breaker on dedicated circuit, non-GFCI type (if hard-wired) | 2-pole 50 A breaker on dedicated circuit, non-GFCI type |
| Electrical Protection | Over current, short circuit, over voltage, under voltage, ground fault, surge protection, over temperature | |
| Status Indicators | AC present, charging, fault | |
| Buttons/Switches | Charger on/off, stop charging | |
| Option: Network Interface | WLAN | |
| Operating Temperature | -22°F to +122°F (-30°C to +50°C) | |
| Humidity | 95% related humidity, non-condensing | |
| Charging Cable Length | 18 ft (5.5 m) or 25 ft (7.6 m) straight cable | |
| Ingress Protection | Type 3R | |
| Cooling | Natural cooling | |
| Dimension (W×H×D) | 12.6×10.3×4.5 in. (320×260×115 mm), excluding charging cable, mounting plate, and cable holder | |
| Net Weight | 5 lb (2 kg) excluding charging connector and cable | |
| Certificate | UL, cUL | |

6 Operating Instructions







6.1 Instruction Pertaining to the Risk of Electric Shock

- ▶ Read all the instructions before using this product.
- ▶ Children should be supervised when this product is used around children.
- ▶ Do not put fingers into the EV connector.
- ▶ Do not use this product if the flexible power cord or EV cable are frayed, have broken insulation, or displays any other signs of damage.
- ▶ Do not use this product if the enclosure or the EV connector is broken, cracked, open, or show any other signs of damage.







6.2 Power On/Off Switch
















There is an on/off switch located on the side of Power Max 2 Charging Station. If the Power Max 2 Charging Station is expected not to be used for a long period of time, turn off the Power Max 2 Charging Station. Turn on the Power Max 2 Charging Station before use. This will prevent any standby power from being used.










6.3 Status Indicator

| Power | Charging | Fault |
|---|---|---|
|  |  |  |
| When the charger is not energized, all indicator lights are off. Turn on the branch circuit breaker (hard-wired models) or plug in the wall plug (cord-and-plug models) to energize the charger. | | |
|  |  |  |
| When the charger is turned on, all indicator lights are on. This is when the charger undergoes initial configuration and self-test. During firmware upgrade. All status indicators are on at the same time. When upgrade is done, the charger is returned to idle state and only Power status indicator is on. | | |

When the self-test is complete, power indicator illuminates in green. Charging plug is not yet inserted. Charger is in idle state.

| | | |
|---|---|---|
|  |  |  |
| Charger is in idle state but network is not connected. (WLAN model only) | | |
|  |  |  |
| Charging plug is correctly inserted but charging is not in progress. | | |

| Power | Charging | Fault |
|--|---|---|
|  |  |  |
| EV charging in progress. | | |
|  |  |  |
| Charger is recovering from a minor fault such as OVP, UVP, OTP, or OCP. Wait until the Fault indicator turns off to resume charging. | | |
|  |  |  |
| Charger malfunction. Stop using immediately. Turn off the upstream breaker. | | |
|  |  |  |
| Missing ground at line side. | | |
|  |  |  |
| USB log file download or system configuration. Alternating slow flashing of power and charging to indicate the USB operation is in progress. When USB operation is done, power and charging are on at the same time for 2 seconds. Then the charger is returned to idle state and only power status indicator is on. | | |

| Symbol | Definition |
|--|---|
|   | Light on |
|   | Slow flashing (period = 2000 ms, duty cycle = 50%) |
|   | Fast flashing (period = 800 ms, duty cycle = 50%) |
|   | Stealth flashing (period = 5000 ms; duty cycle = 10%) |
|  | Light off |

6.4 Charging an Electric Vehicle

1. Turn on the Power Max 2 Charging Station power switch. All status indicators are ON during system self-test. When self-test is complete, the Power indicator illuminates in green, meaning the Power Max 2 Charging Station is ready for charging.
2. Insert the charging plug into the inlet on EV. Ensure the EV is ready for charging.
3. Charging starts automatically after the charging plug is inserted properly.
4. To stop charging before charging is complete, disconnect the charging plug from the EV. To restart charging, you have to disconnect and reconnect the charging plug with the EV.
5. When charging is complete, disconnect charging plug from the EV.

7 Additional Information

7.1 Network Setting (EL-51866-4025P only)

For models equipped with WLAN functionality, it is critical to configure WLAN parameters in accordance to local settings. Consult network administrator to get WLAN SSID and password. Use the supplied software tool to compose the WLAN configuration file and save to a USB flash drive. Insert the USB flash drive to the USB port during charger installation. Refer to the instructions of the supplied software tool for more details.

7.2 Log File Download and Firmware Upgrade by USB

When a USB flash drive is inserted to the USB port of the charger, system log file is downloaded automatically to the flash drive. Submit system log file to technical support when requested.

Latest update of system firmware is made available on a designated website. Download and store the firmware package on the USB flash drive and follow the instructions to conduct firmware upgrade.

7.3 Auto Restart

When a charging session is interrupted due to a temporary error condition, the Power Max 2 Charging Station will automatically retry and restart charging when the cause of the temporary error condition returns to normal. Status indicator remains flashing in red until the error condition is resolved.

Temporary error conditions include: Over Current, Over Voltage, Under Voltage, Over Temperature.

For Over Current condition, there are two automatic retries allowed for each charging session.

When a charging session is interrupted due to a CCID trip, the Power Max 2 Charging Station will retry after 15 minutes, for up to 4 times.

7.4 Power Outage Recovery

When power resumes after an outage, the Power Max 2 Charging Station restarts automatically with delay ranging from 5 to 100 seconds. The delay is designed to avoid impacting the utility grid when multiple chargers in the same area attempt to resume charging simultaneously. There is no need to authenticate the user again.

7.5 Remote Control (EL-51866-4025P only)

For models equipped with WLAN functionality, charging capability of a Power Max 2 Charging Station can be configured remotely by the back-end management system.

8 Troubleshooting

| Situation | Action |
|--|--|
| Power indicator does not illuminate | <ol style="list-style-type: none"> 1. Make sure the AC power input is connected correctly and the AC power is within operating range of the unit 2. Power cycle the Power Max 2 Charging Station 3. If the problem persists, contact Customer Support |
| Charging indicator does not illuminate | <ol style="list-style-type: none"> 1. Make sure the charging plug is inserted firmly in the EV charging inlet 2. If the Power Max 2 Charging Station is connected to a back-end management system, check network connectivity and make sure the Power Max 2 Charging Station is not under a remote control scheme 3. If the Charging indicator does not illuminate after 10 seconds, power cycle the Power Max 2 Charging Station and plug in the charging plug 4. If the situation persists, contact Customer Support |
| Fault indicator flashes red while charging | <ol style="list-style-type: none"> 1. There is a temporary error 2. Wait until the temporary error is resolved and the Power Max 2 Charging Station returns to normal condition. It usually takes less than 10 seconds. 3. If the Power Max 2 Charging Station is connected to a back-end management system, check network connectivity 4. If the status indicator doesn't return to green, power cycle the Power Max 2 Charging Station 5. If the situation persists, contact Customer Support |
| Fault indicator is solid red | <ol style="list-style-type: none"> 1. There is a critical error (CCID trip or Relay failure) 2. Unplug the charging connector 3. Power cycle the Power Max 2 Charging Station 4. If the situation persists, contact Customer support |

9 Warranty

9.1 Limited Warranty

THIS LIMITED WARRANTY IS EXPRESSLY LIMITED TO THE ORIGINAL PURCHASER ("PURCHASER") OF THE BOSCH POWER MAX 2 LEVEL 2 CHARGING STATION ("CHARGING STATION").

IMPORTANT: It is the Purchaser's obligation to register the Charging Station with Bosch and failure to do so may delay warranty support. To register a Charging Station online, go to BoschEVSolutions.com or call 1-877-805-3873 for assistance.

Bosch Automotive Service Solutions Inc. ("Bosch") warrants to the Purchaser that the Charging Station will be free from defects in materials and workmanship for a period of three years from the date of purchase ("Warranty Period"). This warranty is valid for purchasers located in the U.S.A. and Canada only.

ALL WARRANTY CLAIMS MUST BE MADE WITHIN THE WARRANTY PERIOD AND PROOF OF PURCHASE ACCEPTABLE TO BOSCH MUST BE SUPPLIED.

The sole and exclusive remedy for any Charging Station found to be defective is repair or replacement, at the option of Bosch. The warranty covers both parts and factory labor necessary to repair the Charging Station, but does not include any on-site labor costs related to uninstalling or reinstalling the repaired or replacement Charging Station. This warranty does not cover cosmetic damage such as scratches and dents, or normal aging. Repair parts and replacement Charging Stations may be either new or reconditioned at Bosch's discretion. Any replacement Charging Stations so furnished will be warranted for the remainder of the original Warranty Period. Should Bosch be unable to repair or replace the Charging Station with a comparable Bosch product of Bosch's choice, Bosch will refund the purchase price of the Charging Station to you.

This warranty does not cover the cost of freight to return the Charging Station to Bosch. This warranty does include freight to ship repair parts and or a replacement Charging Station to the Purchaser, using a shipping carrier of Bosch's choice.

This warranty covers only those defects that arise as a result of normal use of the Charging Station and does not cover Charging Stations subject to improper installation, improper connections with peripherals, external electrical faults, accident, disaster, misuse, abuse, neglect, improper maintenance and care, modification, disassembly, operation outside of the Charging Station specifications or in a manner inconsistent with instructions regarding use. This warranty does not apply if the Charging Station's original identification markings (for example, serial numbers and trademarks) have been defaced, altered or removed. The Charging Station is not certified for plugin applications and any modification to create a plugin application will void this warranty.

The existence of a defect shall be determined by Bosch in accordance with procedures established by Bosch. No one is authorized to make any statement or representation altering the terms of this warranty.

This warranty gives the Purchaser specific legal rights. The Purchaser may also have other rights which vary from state to state. To the extent that this warranty is inconsistent with applicable law, this warranty will be deemed modified to be consistent with such local law.

9.2 Disclaimer

TO THE EXTENT PERMITTED BY APPLICABLE LAW AND EXCEPT AS EXPRESSLY PROVIDED IN THE LIMITED WARRANTY, BOSCH MAKES NO WARRANTY WITH RESPECT TO THE CHARGING STATION, WHETHER EXPRESS, IMPLIED, STATUTORY OR OTHERWISE. BOSCH EXPRESSLY DISCLAIMS ALL OTHER WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT OF THIRD PARTY RIGHTS, MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. BOSCH DOES NOT WARRANT UNINTERRUPTED OR ERROR FREE OPERATION OF THE CHARGING STATION.

9.3 Limitation of Liability

TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, IN NO EVENT SHALL BOSCH, ITS AFFILIATES OR ITS SUPPLIERS BE LIABLE FOR ANY, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, WHETHER BASED ON CONTRACT, TORT, OR ANY OTHER LEGAL THEORY EVEN IF BOSCH AND ITS SUPPLIERS HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

Some states do not allow the exclusion or limitation of incidental or consequential damages for some products, so the limitations or exclusions contained herein may not apply.

9.4 To Obtain Warranty Service

To obtain warranty service during the Warranty Period, the Purchaser may contact Bosch Technical Support Services (TSS) at 1-877-805-3873 or email to oetech@service-solutions.com for assistance. A Bosch TSS agent will troubleshoot the Charging Station and determine if it has a defect, and if it is covered under this warranty.

In connection with a warranty inquiry, you will be asked for each of the following:

1. Your name and address;
2. A detailed description of the problem you are experiencing with the Charging Station;
3. The model number and serial number of the Charging Station;
4. Proof of purchase; and
5. Return Shipping information.

If Bosch confirms a defect covered under this warranty, you will:

- Obtain a Return Goods Authorization Number (RGA#) number from Bosch;

- Directed to ship the Charging Station, at your expense, in accordance with the instructions provided by Bosch, in either its original package or packaging providing the Charging Station with a degree of protection equivalent to that of the original packaging, to Bosch at the address so instructed at that time.
- You agree to obtain adequate insurance to cover loss or damage to the Charging Station during shipment and you understand prior to receipt by Bosch, you assume risk of any loss or damage to the Charging Station.
- If the Charging Station is covered under this warranty, Bosch will either repair or replace the defective Charging Station at no charge to you and ship the repaired or replaced Charging Station back to you at Bosch's expense, using a carrier of Bosch's choice.
- Any Charging Station that is found by Bosch to be out-of-warranty or otherwise ineligible for warranty service will be repaired or replaced upon your approval and payment of Bosch's standard charges.
- Bosch is not responsible for any unauthorized shipments to Bosch, and under no obligation to return the Charging Station, at its expense. If you do not contact Bosch within five (5) business days of its delivery, Bosch will dispose of the shipment in a manner of its choice without any liability to you. Any damage incurred returning an unauthorized shipment back to you is not Bosch's responsibility.

This warranty is not transferable to subsequent owners of the Charging Station. No attempt to alter, modify, or amend this warranty shall be effective unless authorized in writing by an officer of Bosch. This warranty shall be governed by and construed in accordance with the laws of the State of Michigan U.S.A., exclusive of its conflict of laws principles. The U.N. Convention on Contracts for the International Sale of Goods shall not apply. Bosch reserves the right to amend this warranty policy as required.

9.5 Copyrights, Trademarks

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