

Alpha™

Level 2 Interactive Home EV Charging Station



User Manual & Installation Guide



A L P H A™

Manual Revision 1.2

November 13, 2023

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INTRODUCTION

Product Specifications

Alpha is an interactive, touch-screen Level 2 EV Charger. The 7-inch touch-screen color display gives you direct interaction with the charger to control settings, monitor real-time charging, create a charging schedule, set maximum power, and more.

The 25ft (7.62M) output cable is compatible with all J1772 Electric Vehicles. Alpha provides up to 10 KW of power to your vehicle and can be adjusted for 16A-40A Maximum Current Output.

Model Number	A1-14-24-P A1-6-24-P
EVSE Level	Level 2
Maximum Output Rating	40Amps (9.6kW)
Alternate Adjustable Output Ratings	32A; 7.68 kW – For use with 40A Circuit Rating 24A; 5.76 kW – For use with 30A Circuit Rating 16A; 3.84 kW – For use with 20A Circuit Rating
Charge Cable Length	24ft (7.3m)
Electrical Circuit / Input Power Requirements	Circuit Requirement: Dedicated Single Phase 208-240VAC, 50/60 Hz. Branch Breaker: Double pole. Circuit Conductors: Line 1, Line 2, Earth / Ground.
Input Power Connection	Standard: Plug-in NEMA 6-50 or NEMA 14-50 Plug. Plug is removable for Hardwire Connection.
Installation Rating:	NEMA 3R, Indoor/Outdoor Rated.
Operational Ratings: Temperature:	-22°F to 122°F (-30°C to 50°C); Humidity: 95% RH noncondensing
Mounting:	Wall Mounted
Overall Dimensions	EVSE: 10.25 x 6.25 x 3.75 inches (26.0 x 16.0 x 9.3 cm)
Display and Indicators	7-inch touch screen interactive display LED Indicator Light



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Important Safety Instructions

This User Guide contains instructions and warnings that must be followed when installing and using the Alpha Electric Vehicle Supply Equipment (EVSE). Before installing or using the EVSE, read this document including any **WARNING** and **CAUTION** markers.

This document provides instructions for the charging station and should not be used for any other product. Consult with a licensed contractor, licensed electrician, or trained installation expert to ensure compliance with local building codes and safety standards.

- Read all the instructions before using this product.
- Before installation or use of this product consult with a licensed electrician to ensure compliance with local building codes and safety standards.
- Children should not use this device.
- Do not put fingers into the EV connector.
- Do not touch live electrical parts.
- Do not use this product if the flexible power cord, EV cable, or enclosure is ragged, broken, cracked, open, or shows any other indication of damage.
- Disconnect the power supply before installing, adjusting, or repairing the charging station.

General Product Care and Use Information

- The Alpha EVSE does not require regular maintenance. Inspect the unit periodically to ensure that all parts remain in good working order and no damage exists.
- Do not attempt to disassemble, repair, tamper with, or modify any components inside the device. Contact United Chargers for any repairs.

The exterior of the charging station is water-resistant (NEMA 3R Indoor/Outdoor Rated).

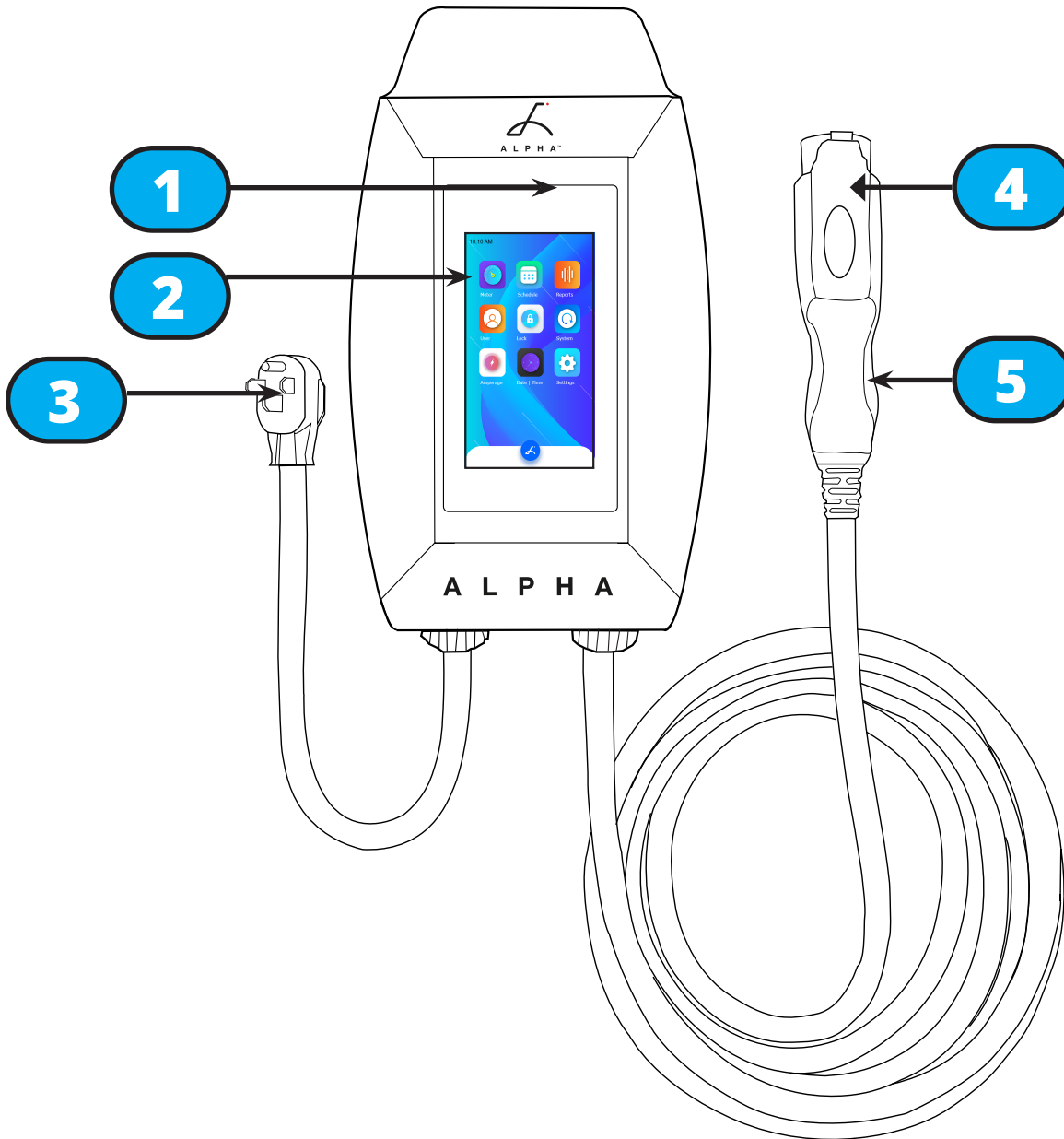
To ensure proper maintenance of the charging station, follow these guidelines:

- Periodic cleaning may be required, depending on local conditions. Only use an automotive grade soft cleaning cloth damp with soap and water to remove accumulated dirt and dust. Do not use cleaning solvents.
- Ensure the charging connector is put back in the holster and the power cable is stored on the charging station after use to avoid damage.
- When moving or lifting the unit, always grasp and carry by the charging station body. Never attempt to lift, move, or carry the unit by any of the electrical cables.



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Alpha Level 2 EV Charger Overview



1. Status Indicator Light
2. Touch Screen Interface
3. Input Plug: NEMA 14-50 or NEMA 06-50
4. Latch Release Button
5. J1772 Output Cable



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INSTALLATION

Service Wiring Requirements

Prior to mounting, consult a certified electrician about an electrical source that can support the following:

The Circuit must be a DEDICATED CIRCUIT 208-240 VAC, 50-60 Hz, Single Phase. Requirements govern that only 80% of the circuit rated load may be utilized. Use the following Maximum Amperage Settings depending on the circuit breaker rating:

Circuit Rating	Maximum Charging Station Output
50A	40A
40A	32A
30A	24A
20A	16A

- A Double Pole Circuit Breaker of the circuit rating must be used.
- The Charging Stations can connect a Standard NEMA 6-50 or 14-50 Receptacle, or the unit can be hardwired.
- A cable with a dedicated grounding conductor connected to the equipment ground terminal block must be used.

CAUTION: The service wiring in this section are specific to North America only. Before installing the Charging Station, identify the type of utility service connection onsite. If unsure about the type of connection available at the service panel, contact your utility service provider.

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



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Install Charging Station

Prior to mounting, determine the location of an acceptable mounting support:

- The charging station must be anchored into a mounting support such as a 2" x 4" stud or a solid concrete wall. **DO NOT** mount this unit directly to a stucco/drywall/wall board.
- Mount the unit between 24 inches (0.6 m) and 48 inches (1.2 m) from the ground. The NEMA outlet should be located more than 18" above the ground or as defined by applicable, local electrical safety codes and standards.

Mounting Screw Recommendations:

- For finished walls supported by wood studs, use #14 or M6 tapping screws. (Included).
- For masonry walls, use M6 mechanical screws. (Commercially available)

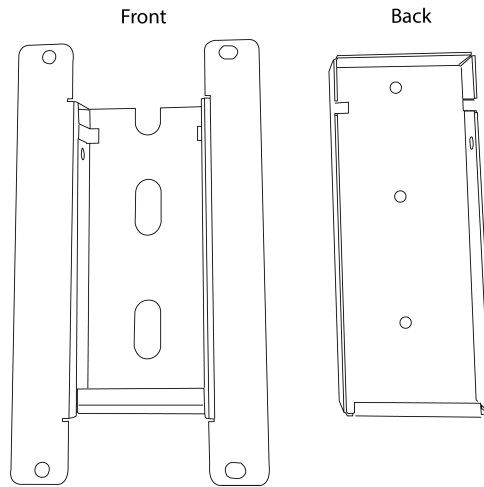
Parts and Tools required for installation:

Part	Size	Source
Mounting Bracket	255 x148 x 36 mm	Included with product
Robertson-Head Screw (x2)	#14	Included with product
Socket cap screw (x4)	5/16"	Included with product
Side Bracket		Included with product
Side Cover Screws	40mm	Included with product
Allen Key	3/16"	Commercially Available
Robertson Head Screwdriver	#14	Commercially Available

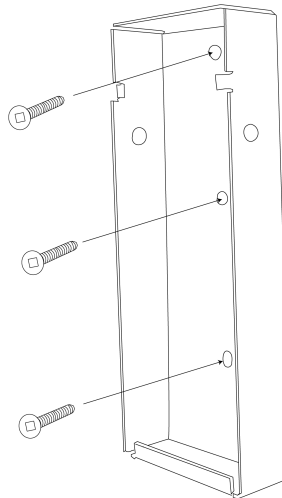


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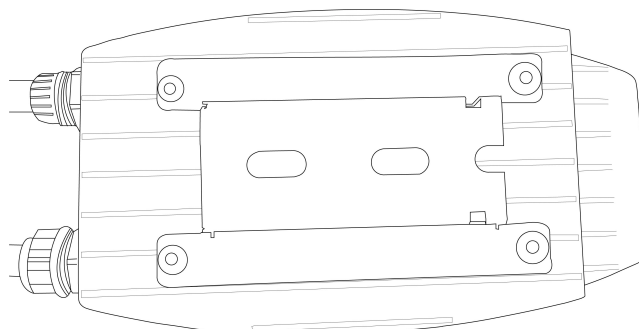
1. Separate the front and back pieces of the mounting bracket by pushing down on the notch.



2. Secure the back piece of the mounting bracket to the wall or other suitable structure using the Robertson-head screws.



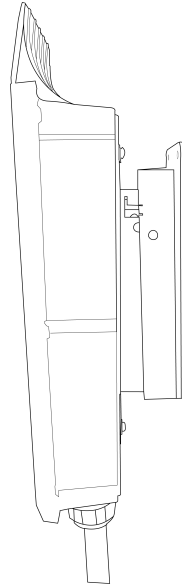
3. Attach the front piece of the mounting bracket to the back of the charging station using the Socket-cap screws and washers. Ensure the top of the mounting bracket is matched with the top of the charging station.



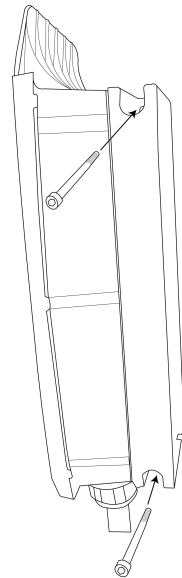


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4. Mount the charger on the wall by securing the front piece of the mounting bracket to the back piece. Align the notches and press down to secure the charger.



5. Position the Side Cover over the mounting bracket. Use the Side Cover screws to secure the two pieces together.



6. Plug in the power cord to the NEMA 14-50 or NEMA 6-50 Wall Outlet/Receptacle.



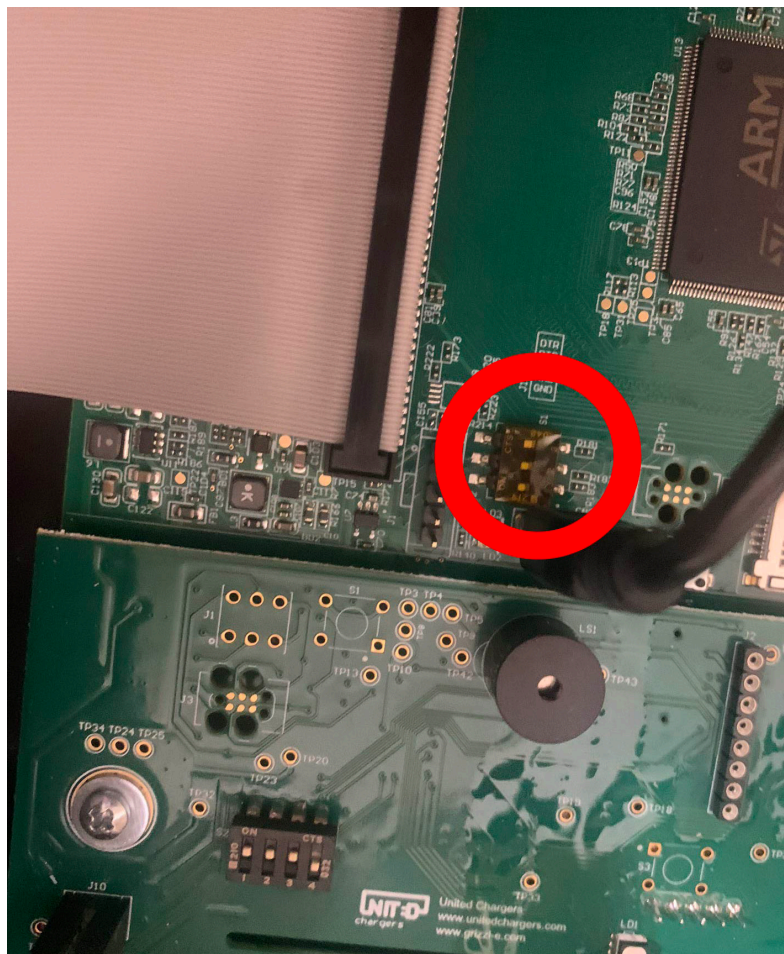
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Adjust Maximum Output Current DIP Switches

Note: Only change the Maximum Current DIP Switch settings if your local electrical code requires a physical switch for compliance. If the building code does not require a physical switch use see “Set Amperage” on page 19.

To set the Maximum Output Current through the DIP Switches:

1. Ensure the unit is unplugged. Ensure Charging Station is facing up on a flat surface. Remove the plastic protective cover.
2. Use a Phillips Head screwdriver to remove the 6 screws on the front of Alpha. Carefully place the front cover to the side without damaging the communication cable.
3. Locate the DIP Switches on the PCB. The DIP Switch is a 3-position switch on the secondary circuit board, located behind the USB cable.





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4. Remove protective cover from DIP Switches
5. Use the following combination of switch settings to adjust the maximum current:

Maximum Current Setting	Switch		
	1	2	3
40A Maximum Current (Factory Default Setting)			
32A Maximum Current			
24A Maximum Current			
16A Maximum Current			



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Optional Hardwire Connection

CAUTION: Do Not attempt to hardwire the Alpha unless you are qualified to do so. If you are not qualified, contact a licensed electrician.

1. Choose a copper wire conduit in accordance with all applicable, local, and electrical safety codes and standards.
2. Choose a terminal ring with the following characteristics:
 - Recommended Wire Strip length: 8mm (0.32")
 - Width of the terminal block opening: 10.2mm (0.41")
3. Using the appropriate tool, clamp the wire terminal to the copper wire. For non-insulated terminals, use a heat shrink tube to cover the non-insulated portion of the terminal.
4. Remove the plastic protective cover from the front of Alpha.
5. Use a Phillips Head screwdriver to remove the 6 screws on the front of alpha. Carefully place the front cover to the side without damaging the communication cable.
6. With the front cover placed to the side, use a Philips Head screwdriver to release terminal screws of the 6-50 or 14-50 Plug cable. Loosen the Strain Relief Fitting and remove the Plug. Remove the Strain Relief connector.
7. Insert the wire end passing through the conduit and insert them into the input wiring hole. (Use Red wire for L1, Black wire for L2, Green wire for G). Attach the wire terminal to the corresponding terminal block. Use the following wire and torque force when connecting to input terminal block:

Terminal	Conductor	Screw	Rating	Torque
L1	8 AWG	M4	75C copper wire	max 1.8Nm 16 LBF.IN
L2	8 AWG	M4	75C copper wire	max 1.8Nm 16 LBF.IN
G	8-10 AWG	M4	75C copper wire	max 1.8Nm 16 LBF.IN



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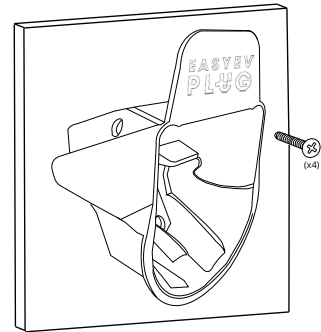
Install EasyEVPlug

The EasyEVPlug™ Holster or Tesla EasyEVPlug™ Holster is the new innovative method to protect your plug and manage your cord. It has the following features:

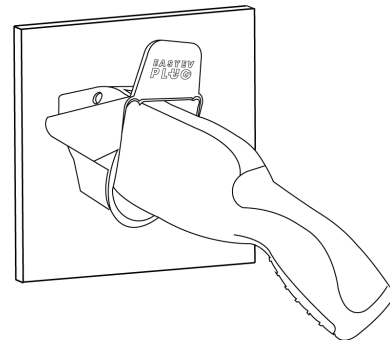
- No need to aim – flawless plug even in the dark.
- Your EV holster will always be in a convenient location.
- Saves space – special angle for less wall clearance.
- Integrated cable management – holds up to 25 feet of cable.

The EasyEvPlug holster can be installed at any location near the charging station.

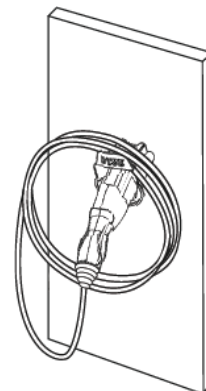
1. Hold back of holster against the mounting surface. Fasten Phillips head screws through back holes. Use anchors if attaching directly to drywall.



2. Insert charging connector into holster.



3. Wrap cable on top of EasyEvPlug.












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OPPERATION

Indicator Light

The Indicator Light is located at the top right corner of the screen. Alpha uses the following indicator lights for the charger status:

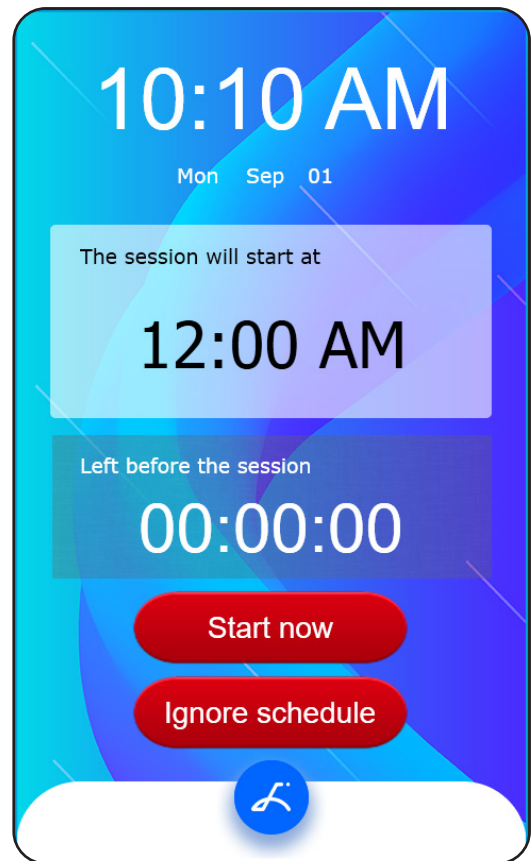
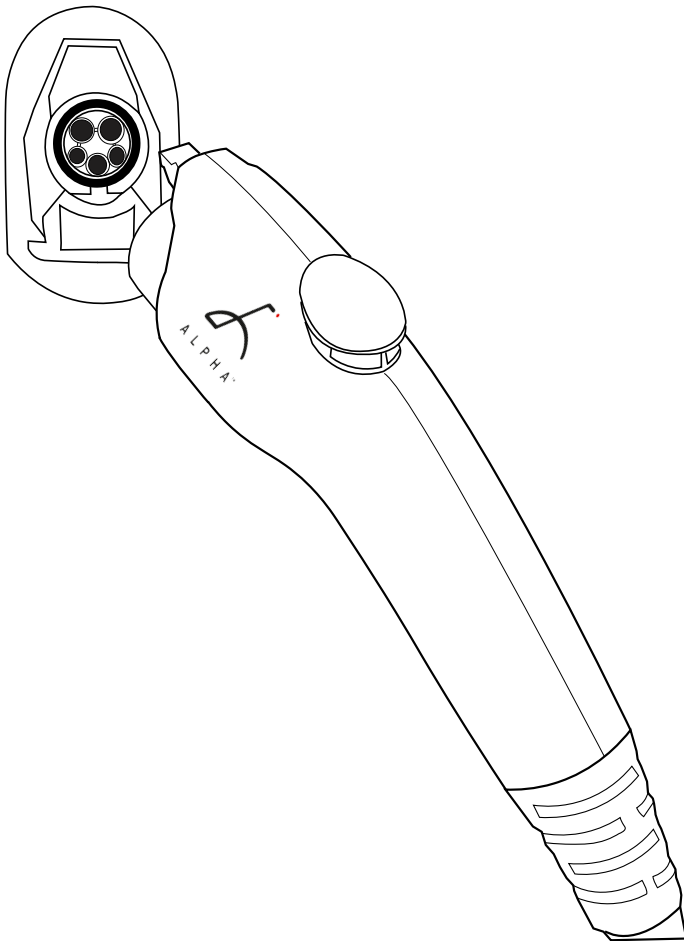
Indicator Light	Description	Definition
	Yellow Steady	Initialization
	Cyan Flashing	Update in Progress
	Blue Steady	Ready
	Blue Flashing	Vehicle Detected
	Green Flashing	Charging in Progress
	Green Steady	Charging Complete
	Red Flashing	Fault (See "Charger Fault" on page 15)



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Connect and Charge

1. Insert the J1227 charging Connector into the EV and ensure the connector is fully seated/locked in place.
2. Select the Start Now button from the charging screen.



Stop Charging

1. Press down on the latch release button. Ensure latch release button is fully compressed.
2. Remove the Charger Connector from the EV
3. Return the connector to the holster.



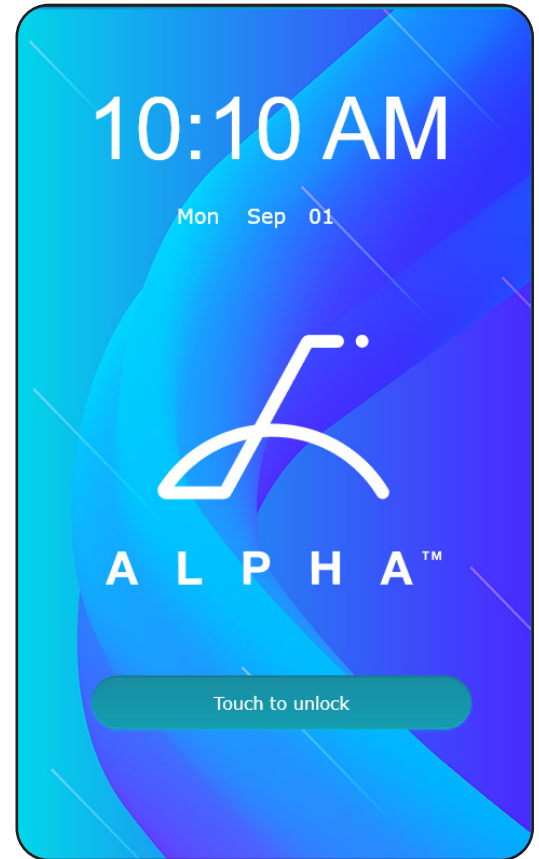
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Lock Screen

The lock screen is the first screen you will encounter.

Select the **Touch to Unlock** button to enter to the Home Screen.


If a PIN Code has been set the charger will prompt the user to enter the PIN Code. For more information on setting a PIN see “Users” on page 16.

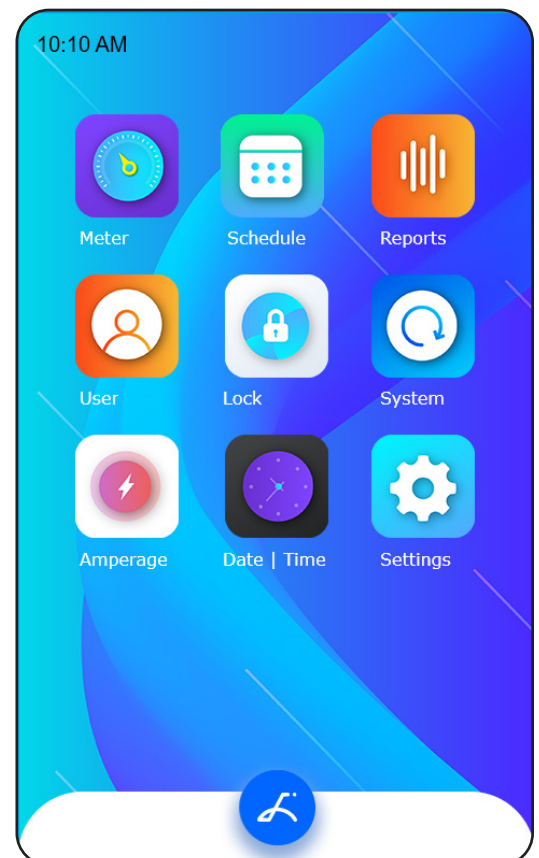


Home Screen

All functions of Alpha can be accessed through the Home Screen.

Touch an icon to access the function.

Select the **Home**  button to go back to the Home Screen at any time.





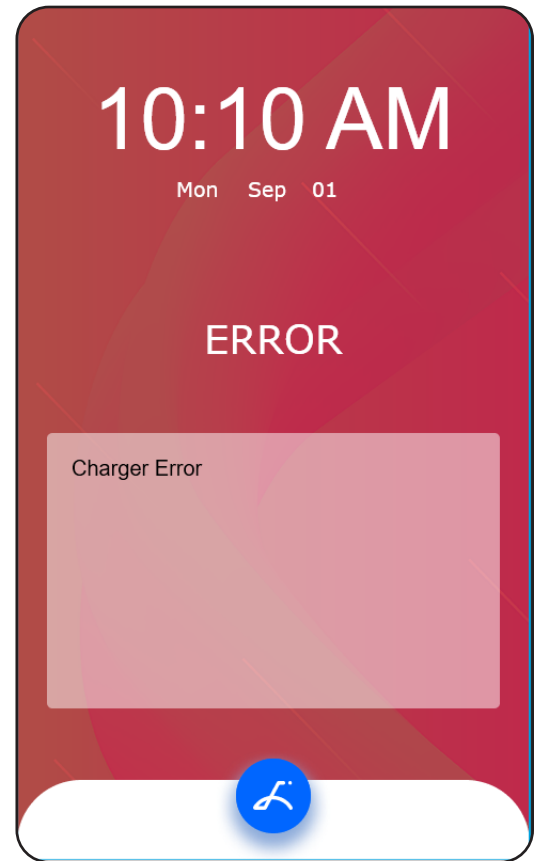
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Charger Fault

When the Charger experiences a fault the indicator light will flash red, and the error screen will display.

Reset Charger

In the instance of a fault, it is recommended that you perform a reset:

1. Unplug the charging Connector from your EV.
2. Power off the Charging Station by unplugging it or switching the upstream circuit breaker to the "OFF" position.
3. Wait 1-2 minutes and then power the charger back on.
4. Confirm the Fault light is no longer present.



Fault Codes

The indicator light will flash, and the buzzer will sound when the unit is in fault mode. The number of red flashes indicates the type of fault:

LED Indicator	# of Flashes	Error Description
Red Flashing	1	Lost ground - AC Line1
Red Flashing	2	GFCI High Leakage
Red Flashing	3	Relay is stuck
Red Flashing	4	GFCI Low Leakage
Red Flashing	5	High temperature of the module
Red Flashing	6	High temperature of the relay-
Red Flashing	7	Pilot state is Status E
Red Flashing	8	Pilot state is Status F
Red Flashing	9	Diode error
Red Flashing	10	Over Current
Red Flashing	12	Application Error

If fault remains contact United Chargers technical support. Include the fault error code and number of red flashes.

<https://autochargers.zendesk.com/hc/en-ca>



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SMART CHARGING FEATURES



Users

Only accessible by Master User

The **Users** screen allows you to set multiple profiles with PIN code access.

Master user is the default. Two additional users can be added. Master does not have any PIN code by default.

Set Users:

1. Select the **User**  icon from the main menu.
2. Enter a User ID for Master, User 1, or User 2.
3. Enter a PIN Code for Master, User 1, or User 2.
4. Select the **Home**  button to go back to the main menu. Your settings will be saved.

Lock Charger:

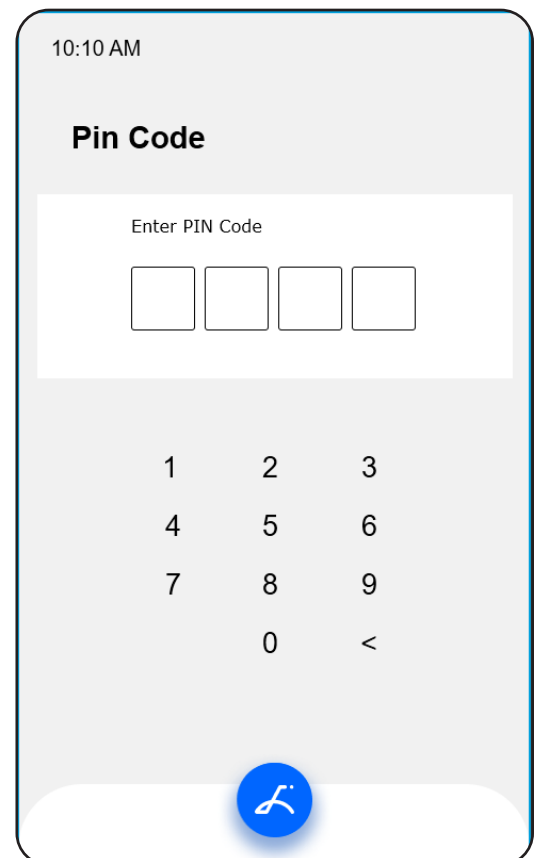
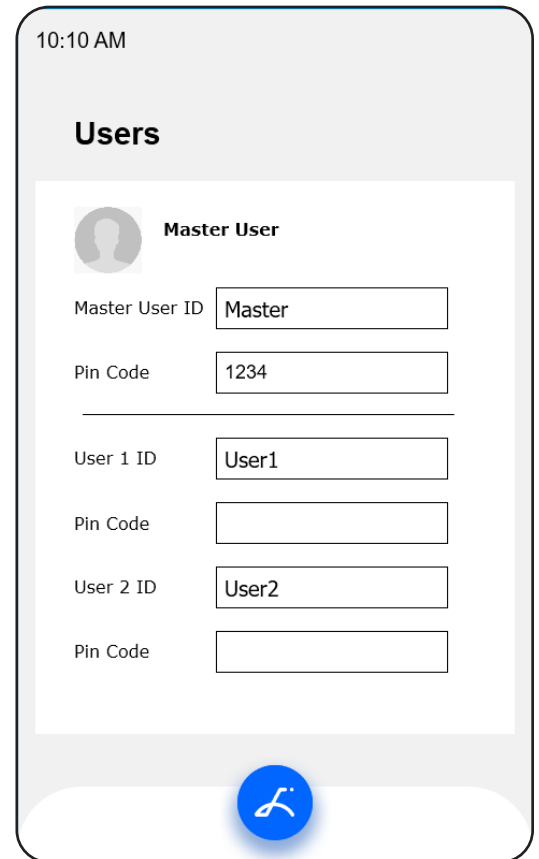
Select the **Lock**  button on the home screen.

The charger will display the lock screen. Once locked the charger will require the PIN code to access.

Login as a User:

Entered the PIN Code created for the user. The charger will login as that user.

Always make sure to Lock the charger after use.







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Charging Schedule

Only accessible by Master User.

Set Charging Schedule

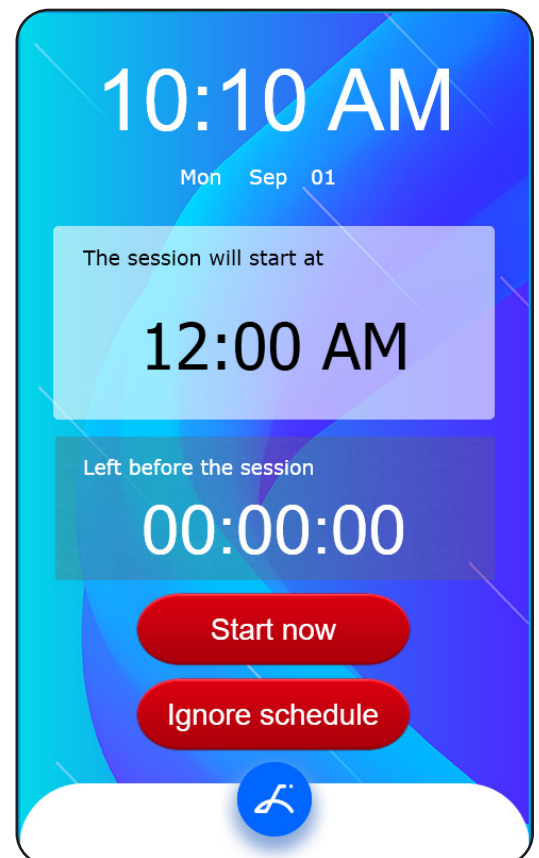
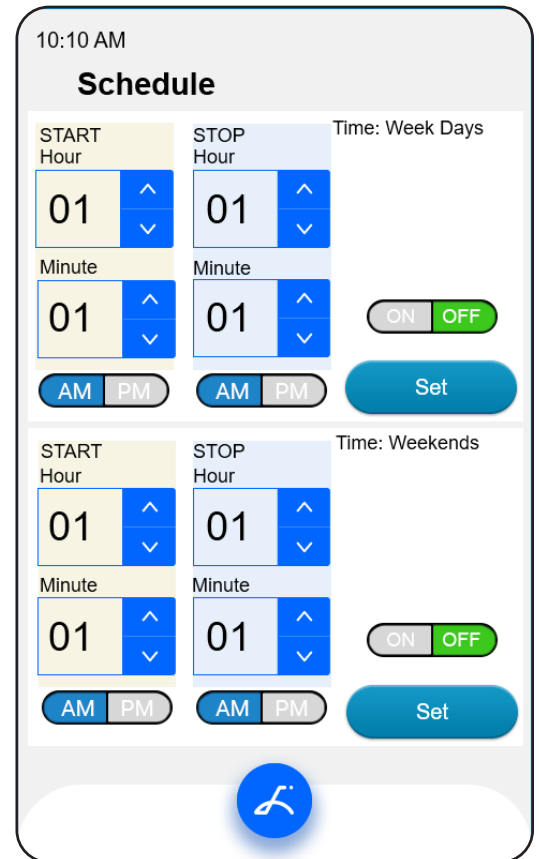
1. Select the **Schedule**  icon from the home screen.
2. Use the arrows to adjust the hour and minute of the Start Time. Select AM or PM. Charging will start at the specified time stop at the specified time.
3. Set the **On/Off** toggle to ON.
4. Press the **Set** button. Note: Set the schedule in both weekdays and weekends to use both.
5. Select the **Home**  button to go back to the main menu. Your settings will be saved.

Override Charging Schedule

1. Connect J1772 connector to the vehicle.
2. Select **Charge Now** or **Ignore Schedule** from the charging screen.

Start Now: The charging session will begin immediately and end at the scheduled time.


Ignore Schedule: The charging session will begin immediately and ignore the scheduled stop time for 1 complete charging session.



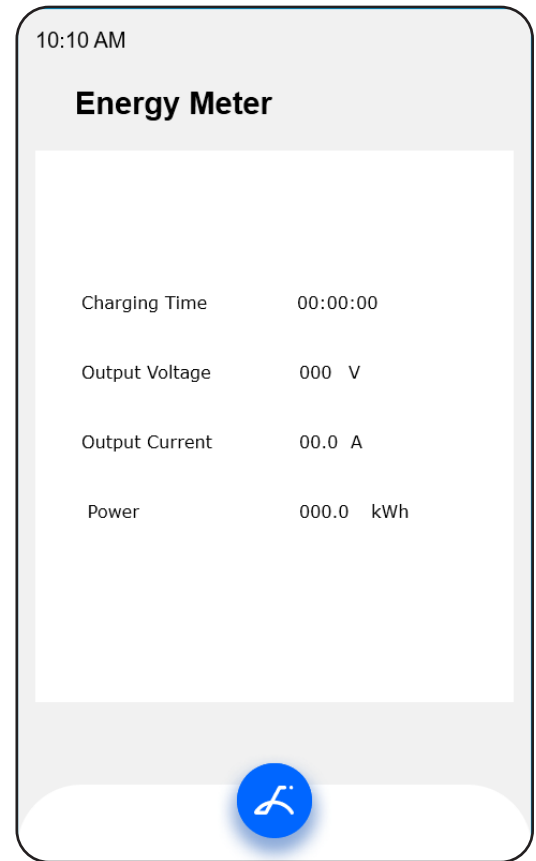


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Energy Meter

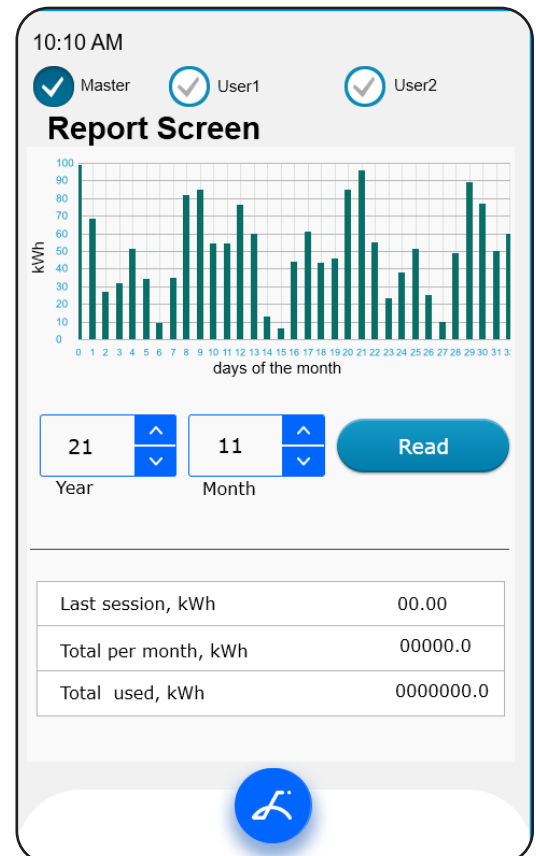
1. Select the **Energy Meter**  icon from the main menu.
2. The Energy Meter screen will display the following power consumption statistics:
 - Charging Time
 - Output Voltage
 - Output Current
 - Power

Power Consumption statistics from the last charging session. If a charging session is in progress, it will display real-time Power Consumption statistics.



Reports

1. Select the **Report**  icon from the main screen.
2. Select the user Master, User1, or User2.
3. Use the arrows to select the last two digits of the Year and Month.
4. Select the **Read** button.
5. The report screen will display the total session time and Total kWh used from that session.





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Maximum Amperage

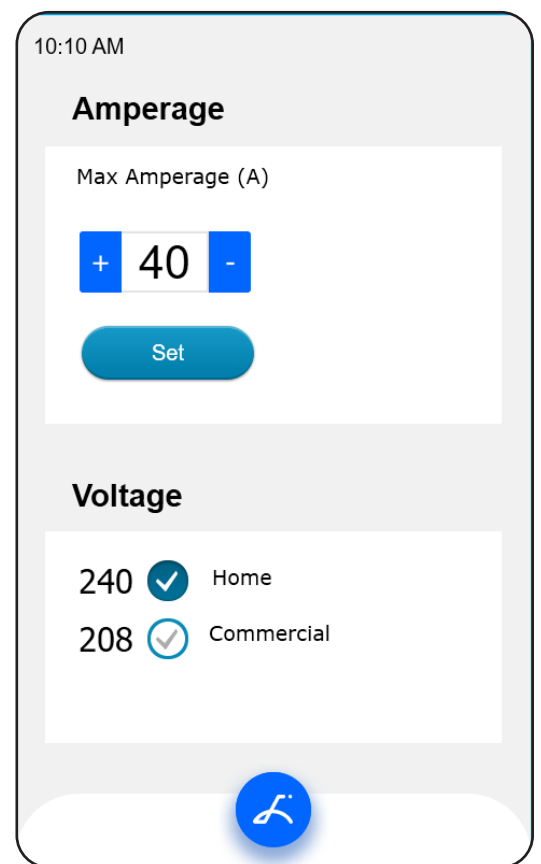
Only accessible by Master User

- Requirements govern that only 80% of the circuit rated load may be utilized, hence the higher Circuit Ratings Requirement relative to maximum Charging Station output:


Circuit Rating	Maximum Charging Station Output
50A	40A
40A	32A
30A	24A
20A	16A

Set Amperage


1. Select the **Amperage**  icon from the home screen.
2. Set the Max Amperage using the + and - buttons. Set Amperage to 40A, 32A, 24A, or 16A based on your circuit breaker rating.
3. Select the **Set** button.
4. Select the **Home**  button to go back to the main menu. Your settings will be saved.



Set Voltage

1. Select the **Amperage**  icon from the home screen.
2. Set the Voltage to either:
 - 240V - Home
 - 208V - Commercial

If you are unsure of your voltage rating, consult a licensed electrician.



3. Select the **Home**  button to go back to the main menu. Your settings will be saved.

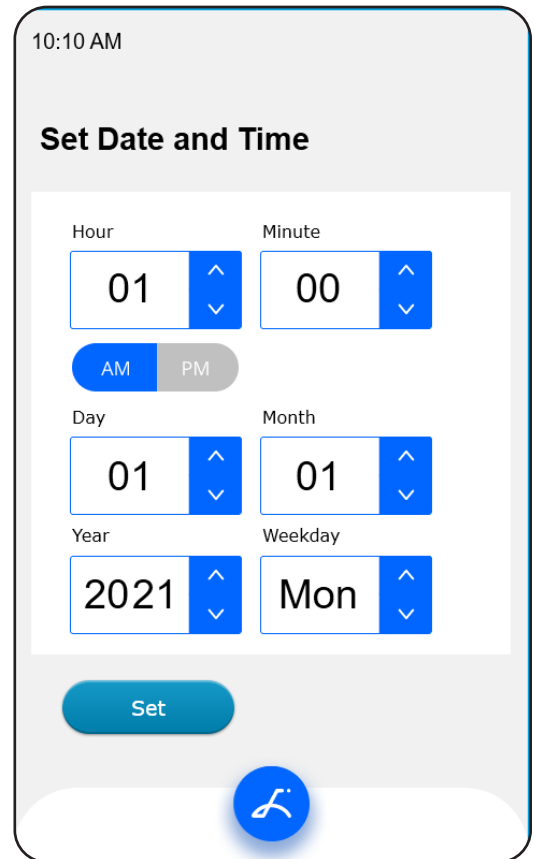


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Set Date and Time


Only accessible by Master User

1. Select the **Date | Time**  icon from the main menu.
2. Set the hour and minute to the appropriate value. Select AM or PM.
3. Set the Date, Month, Year, and Weekday to the appropriate values.
4. Select the **Set** button.
5. Select the **Home**  button to go back to the main menu. Your settings will be saved.



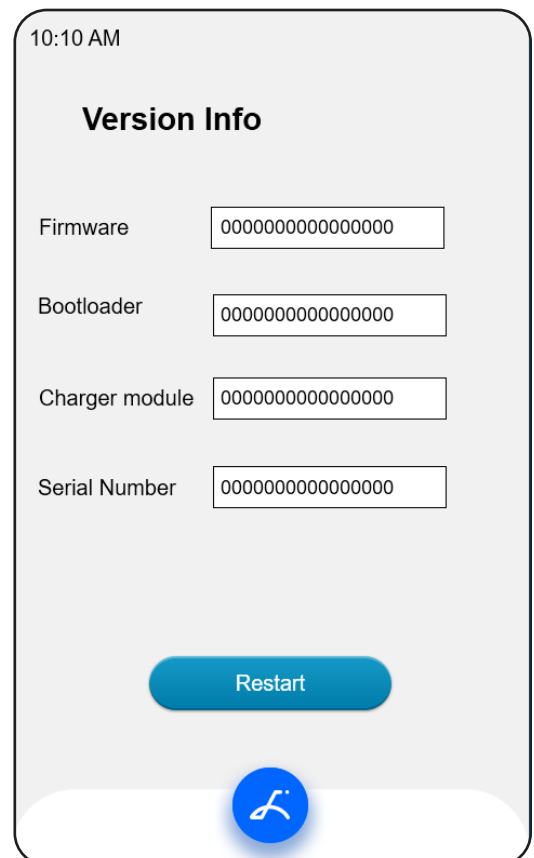
Version Info

Only accessible by Master User

1. Select the **System**  icon from the main screen.
2. View the following information:
 - Firmware Version
 - Bootloader Version
 - Charger Module Version
 - Charger Serial Number

Use this information to help with technical support claims and before performing an update.

Select the **Restart** button to reboot the charger.





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SETTINGS

Select the **Settings**  icon from the main menu.

Wi-Fi

Not in use.

OCPP Connections

Not in use.


USB Firmware Update

See “USB Software Update” on page 24

Ethernet

Not in Use

Volume

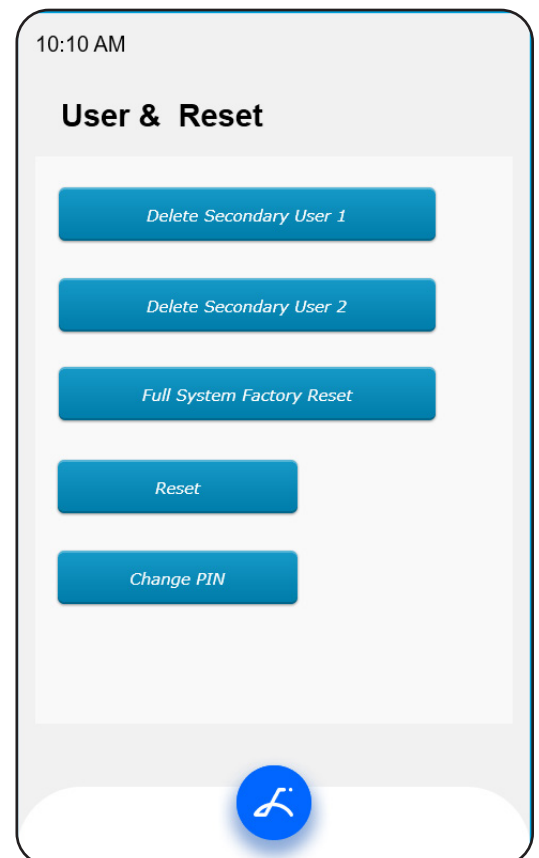
1. Select the **Volume**  **Volume** button from the Settings menu.
2. Use scroll bar to adjust volume level.

Camera

Not in use.

Delete Users & Reset

- **Delete Secondary User 1:** Not in Use
- **Delete Secondary User 2:** Not in Use
- **Full System Factory Reset:** Not in Use
- **Reset:** Not in Use
- **Change PIN:** Select to change the PIN for the Master User, User1, and User2.








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Brightness

Adjust Brightness

1. Select the **Brightness**  **Brightness** icon from the settings menu.
2. Use scroll bar to adjust brightness to the desired level.
3. Set the lock and sleep screen for 5 min, 10 min, or never. The touch screen will enter energy saving mode after the selected time has passed.
4. Select the **Home**  button to go back to the main menu. Your settings will be saved.



Warranty Info

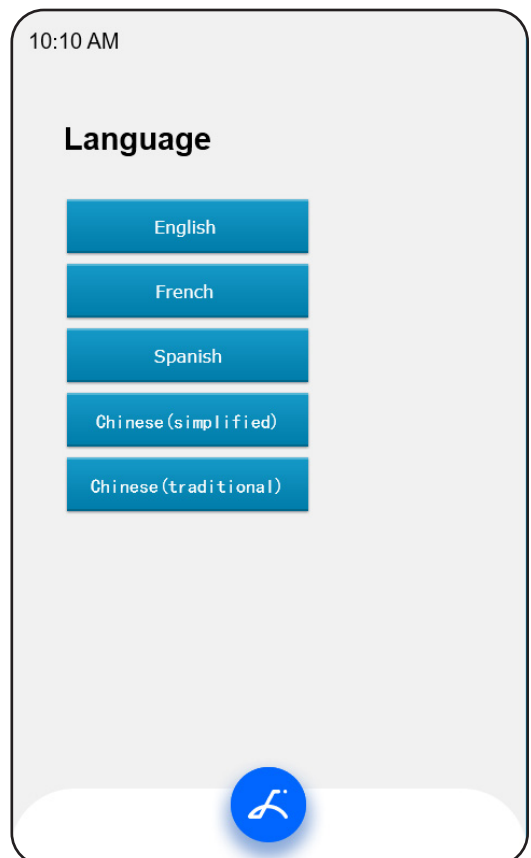
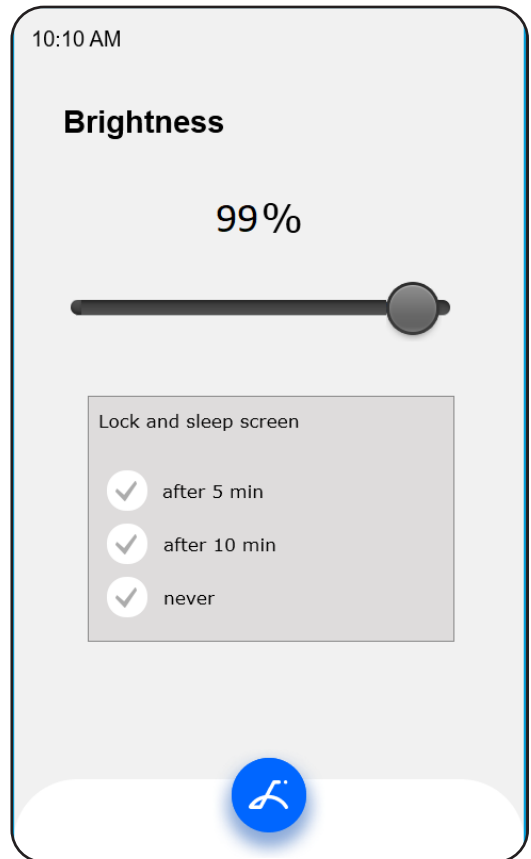
Select **Warranty Info**  **Warranty Info** from the Settings screen.

The Warranty Screen will display the total Power Consumption (kWh) and the date of the first activation.

For more information on the Warranty Terms and conditions see “Warranty” on page 25.

Language

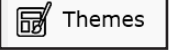

1. Select the **Language**  **Language** from the settings menu.
2. Choose one of the following Languages:
 - English
 - French
 - Spanish
 - Chinese (simplified)
 - Chinese (traditional)
3. Select the **Home**  button to go back to the main menu. Your settings will be saved.





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Themes

1. Select the **Themes**  icon from the settings menu.
2. Select one of the available themes.
3. Select the **Home**  button to go back to the main menu. Your settings will be saved.






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USB SOFTWARE UPDATE

1. Download the updates files and save the files onto your USB drive.
2. Power off the Alpha Charger by unplugging it or by switching the upstream circuit breaker to the “OFF” position.
3. Insert the USB drive into the charger slot.
4. Turn the Alpha back on by plugging it back in or switching the upstream circuit breaker ON. A startup screen will give you 30 seconds to insert USB drive.



5. Wait for the update to complete. Do not unplug Alpha while updating. When the update is complete Alpha will reboot.
6. When Alpha has finished rebooting remove the USB drive.
7. Select the **System**  button from the main menu to ensure the Firmware version matches the latest on the Software Updates page.



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WARRANTY

Warranty Terms and Conditions

Alpha comes with a 1-year distributed power full replacement warranty. This warranty is extended by United Chargers Inc. to original purchasers of Alpha EV Charging Station.


United Chargers warrants that this product is free from defects in materials and workmanship for 1 Year from the date of purchase. No agent, employee, or representative of United Chargers has any authority to affirm, represent or warrant anything concerning Alpha™ EV Charging Stations, except for the affirmation and representation which is specifically included within this warranty.

This warranty will not apply if the product has been misused, abused, or altered. Warranty for the cable does not include normal tear and wear. Plugs that have been exposed to snow or water for a prolonged period of time are not covered by this warranty. The warranty will apply only if the product is defective. United Chargers assumes no liability for any dismantling, removal, installation, re-installation, or labor costs or any consequential damages associated with this warranty. United Chargers is not responsible or liable for any costs associated with faulty installations. United Chargers shall make the final decision, in fairness to all concerned, as to the legitimacy of any such claim on this warranty.

Upon discovery of any defective Alpha™, please contact our Customer Service Department for further instructions as to how to repair or replace the defective unit or submit a support ticket.

Check Warranty Info

To check the current warranty status of the charger:

1. Select the **Settings**  icon from the home screen
2. Select **Warranty Info** from the Settings screen.
3. The Warranty Screen will display the total Power Consumption (kWh) and date of first activation.

For customer service inquiries or technical support please contact our Customer Service Department or submit a Technical Support Form at alphaevcharger.com.

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