Installation Guide for Optimum Residential Charging Center

This document will guide you through the process of mounting and installing your new Optimum Residential Charging Center. Please give us a call anytime if you have questions or need assistance, we will be happy to assist you.

Step One:

Please inspect your shipping container for damage! **If any damage is noticed, report it immediately to the shipping company. Then, call our Technical Support Department so we can be aware and take additional steps to assist you. Do NOT return the shipment to us.**

Next, we want to be sure all the items that you need are in the box. You should have the following items in the shipping container:

1. Optimum Residential Charging Center
2. (Optional) Wiring Kit if purchased.
3. 1- 50ft. Outdoor Rated Ethernet Cable with Outdoor connect and YELLOW boot.
4. 1-25ft. Indoor Rated Ethernet Cable with GREY boot on both ends.
5. Outdoor Power Connector for Optimum Solarius-500.
6. Wi-Fi Access Point and power connector.
7. Warranty Card and registration instructions.
8. System Fuse Kit.

Please contact your Product Engineering Team at 863-320-4939 with any questions or concerns. We are more than happy to help you along the way.

If everything above is in good order, we are ready to begin installation!

Step Two: Plan the Installation and wire routes.

Plan your installation location:

Our first step is to determine where we are going to install the Optimum Residential Charging Center.

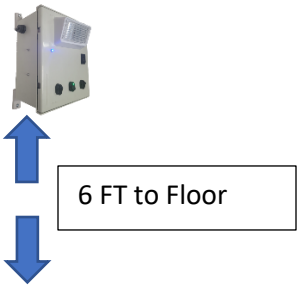
The system is designed to be easily mounted to a vertical surface, indoors or outdoors. The mounting surface needs to be capable of supporting at least 65 LBS. of weight as our system is somewhat heavy with the battery installed.

Also, plan where your interconnect wires will come down the wall location to connect to the system.

Finally, plan out where the Wi-FI Access Point will be placed so you know where to create holes for the wires to pass thru.

The Optimum Residential Charging Center is ideally mounted inside the garage, near the entrance to the main living area so it is convenient and easy to reach when the power is out.

It should be possible to reach the unit and turn on the lights without issues from an inside door, if possible, for maximum effectiveness and ease of use.



It should be mounted approximately 6 Ft high to the bottom of the unit if practical for best results.

The system is also well suited for small offices, or any other area where emergency lighting is needed during a power outage situation. The system LED indicator lights are always on and can be easily seen in the dark to assist with navigating to the unit during power outages.

The front LED light is bright and will illuminate a two-car garage area with sufficient lighting to see and be able to maneuver around with safety.

The LED down light is useful when you are connecting charging cords to phones, tablets, and rechargeable lights. It provides a soft but adequate light without shining directly into your field of view.

Mount the system using four drywall screws and drywall connectors, or drill into masonry surfaces and secure with TapCon fasteners designed for the purpose. Wood screws can be used for plywood surfaces. Be sure to level the unit properly when mounting.

We always recommend the use of stainless-steel fasteners, when possible, to avoid corrosion issues.

Step Three: Running the interconnecting wires.

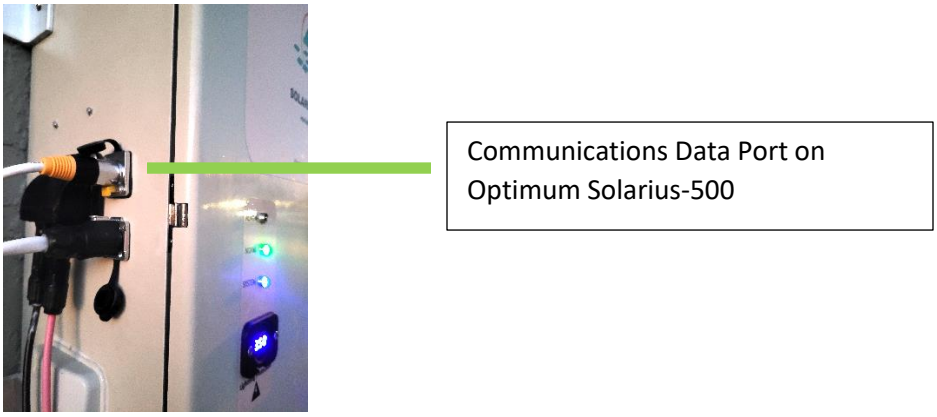
In this step you will plan the route, pull the wires through the necessary spaces, and properly mount them in their locations. This part will vary widely from site to site and depends entirely on the situation and where you are mounting the system. It is highly recommended, but not absolutely required to have a licensed electrician install the interconnecting wiring. (All wiring is low voltage, 12vdc standard circuit with no more than 3 Amps of current nominal and standard Ethernet CAT 6 cabling).

The Optimum Residential Charging Center connects directly to the Optimum Solarius-500 and is a companion product to that system. The Optimum Solarius-500 is expecting the Optimum Residential Charging Center and all necessary connections are ready for plug in use.

I. Network Data Cables:

First, locate the network port on the side of the Optimum Solarius-500. It has a mating connector for the Ethernet cable in your kit that has the YELLOW boot and a special outdoor connector pre-fitted at the other end.

Carefully insert the keyed special network connector and secure the connection to the Optimum Solarius-500 network port. (This connection is for the **WAN port** on the Optimum Residential Charging Center and brings internet data from the Optimum Solarius-500 GSM router).



Route the Yellow boot end through the necessary places to bring it to the Optimum Residential Charging Center. (If it is necessary to drill any holes for the network cable assembly, a ½" Diameter hole will pass the YELLOW boot connector).

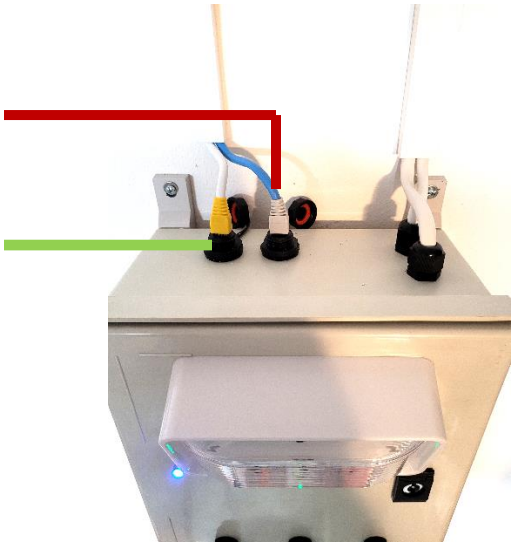
IMORTANT NOTE!

The network cable is carrying high speed data from the GSM Modem. As such, network cables must NEVER be in proximity of any electrical wires, fluorescent lights, or AC power wiring. Be sure to properly seal any holes around the cable entry will good quality silicone sealant. Use wires ties and cable straps to ensure network cables are always secure and away from all other wiring. This is a MUST.

The **YELLOW BOOT** connector will mate with the female **WAN Ethernet port** on the system located closest to the mounting surface as shown here:

LAN Port on Optimum Residential Charging Center

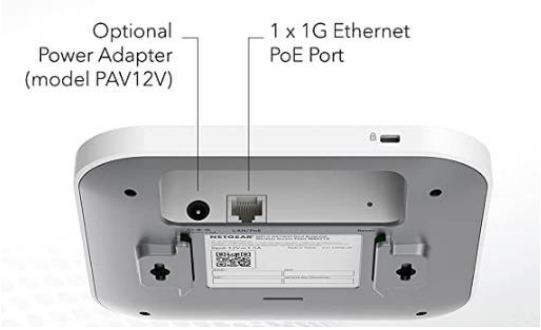
WAN Port on Optimum Residential Charging Center



Next, locate the second CAT-6 Network cable in your kit with the GREY BOOT. This cable is used to connect the included Wi-Fi Access Point to the Optimum Residential Charging Center.

Starting at the location for the Access Point physical mounting, prepare a ½" diameter hole and pass one end of the GREY BOOT cable through. Route the cable carefully as discussed above and bring it to the Optimum Residential Charging Center. Connect **GREY BOOT** connector to the female LAN comm port next to the WAN port as shown in the illustration above.

Plug in the other end of the LAN cable to the1 G Ethernet port shown here on the bottom of the Wi-Fi Access Point.



II. Power Connection Cables:

At this point we are ready to install the two power connection cables.

If you purchased the Optional Wiring Kit, you should now open the package and remove the two supplied cables with attached electrical connectors and proceed. If you did not purchase the kit, then you must first assemble the connectors in your shipment to the appropriate wire types that meet the following UL and wire standards.

The system requires that the power cables for both the outdoor connection to the Optimum Solarius-500 and the connection for the Wi-Fi access be the same type and size. Here are the specifications for the wire type to be used.

General Specification-18 Gauge Wire 2 Conductor Electrical Wire 18AWG Electrical Wire Stranded PVC Cord Oxygen-Free Copper Cable

SPEC NO.	UL2464 18AWG		
RATED TEMPERATURE	80℃	RATED VOL TACE	300V
ENVIRONMENTAL STANDARDS	ROHS	REFERENCE STANDARD	UL 758-2019

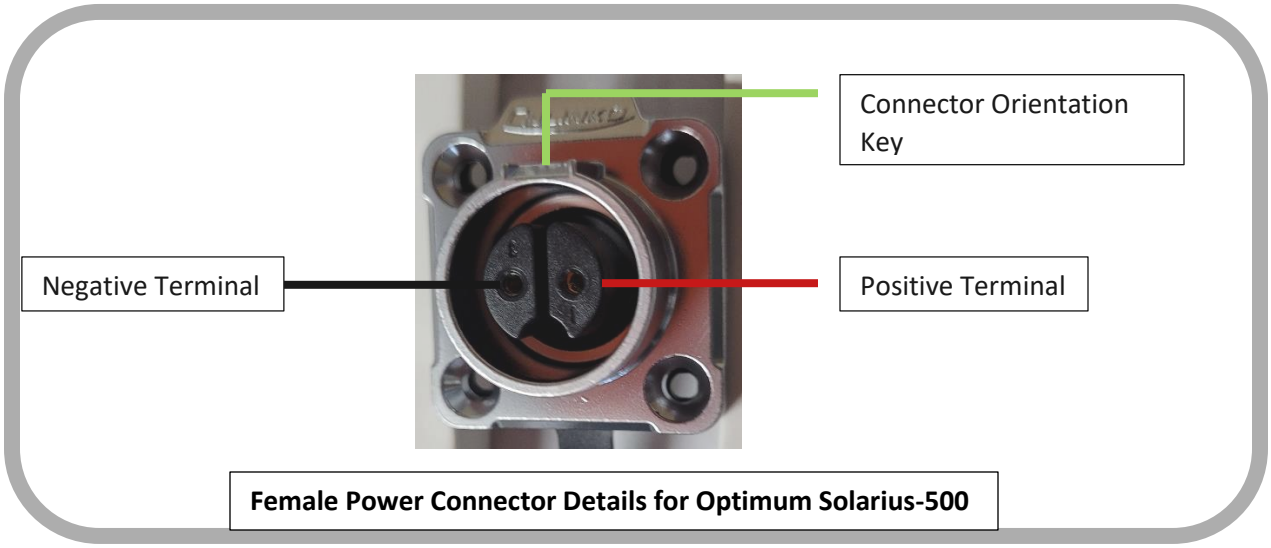
TECHNICAL PARAMETERS

Core number	AWG	(NO./mm) (±0.008)	Nom.Thick.(mm)	Core Dia.(mm)	ASSEMBLY	Nom.Thick.(mm)	JACKET Dia.(mm)
2	18	34/0.178TS	0.30	1.8±0.10	/	0.76	5.2±0.25

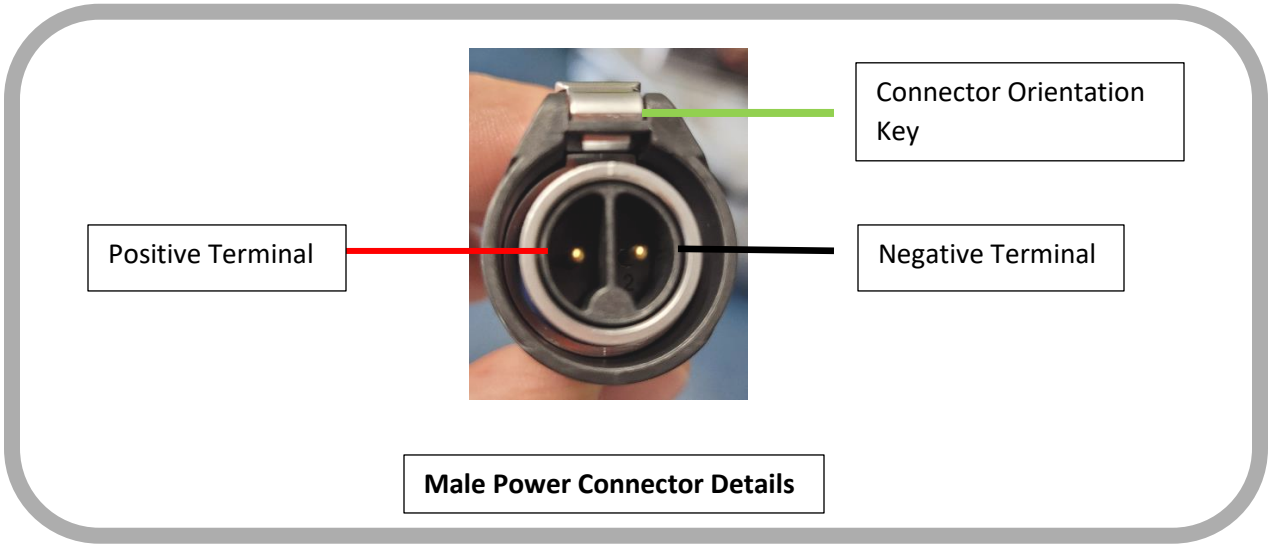
CONDUCTOR	MATERIAL	TINNED STRANDED COPPER	FILLER	MATERIAL	NOTHING
INSULATION	MATERIAL	PVC (RoHS)	JACKET	MATERIAL	PVC (RoHS)

ELECTRICAL CAPABILITY	COND. RESISTANCE (Ω/KM20℃)	23.2
	INSU. RESISTANCE (M Ω/KM20℃)	10
	DIELECTRIC TEST (AC V/min)	2000

Assemble the Male Power Connector using the proper orientation for +RED and -BLACK polarity. Be certain to follow the instructions with absolute care for proper polarity. Facing the female socket connector, the POSITIVE RED is the terminal on the RIGHT-HAND SIDE. The Male Power Connector **MUST BE SOLDERED** to make a suitable final configuration.



Female Power Connector Details for Optimum Solarius-500



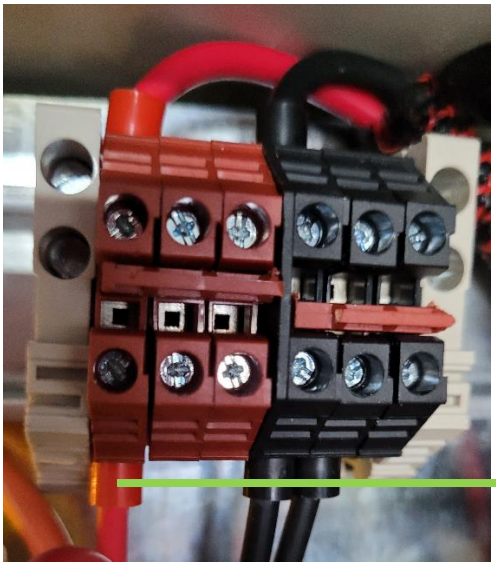
Male Power Connector Details

General Instructions Using either the Optional Wiring Kit or the user supplied connection cables assemblies:

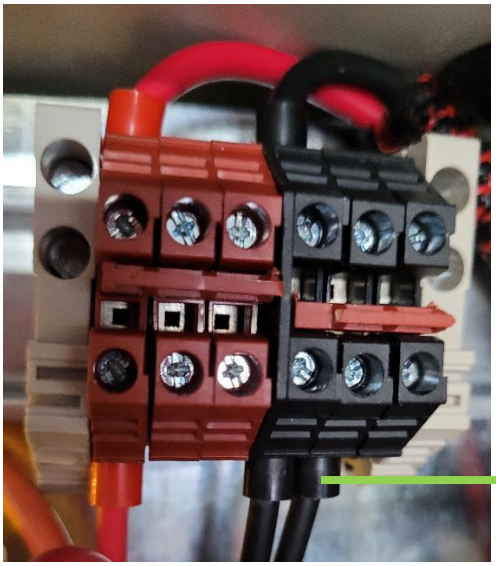
1. Begin by locating the power supply port on the Solarius Optimum-500. **DO NOT INSERT THE CONNECTOR** at this time. Make sure you have enough cable length at the location to properly plug in the connection without strain on the cable. Route the other end of the cable to the location where it will terminate and connect to the Optimum Residential Charging Center.
2. If you are preparing the cable assembly yourself, strip off 4 inches of the cover insulation on the wire pair cable. Remove the cable gland retaining nut top and pull out the rubber grommet. Slide the cable gland nut over the wire pair and past the section you stripped off the insulation jacket. Next, slide the rubber sealing washer onto the wire and push it 1.5 inches past the insulation stripped off area. Insert the Black and Red wire pair through the cable gland located on the top of the Optimum Residential Charging Center as shown. Carefully push the rubber sealing washer into the cage on top of the cable gland so it sits flush, the hand tighten the retaining nut to complete.

   It does not matter which cable gland is used for the final configuration.

Connect the RED WIRE to the terminal Strip as shown here at the top of the system:



Connect RED power wire here as shown, tighten with small Phillips screwdriver.



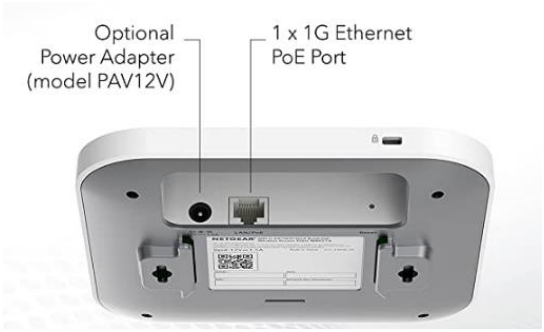
Connect BLACK power wire here as shown, tighten with small Phillips screwdriver.

Next, we will prepare the connecting wire pair for the Wi-FI Access Point.

If you purchased the Wiring Kit, this cable is assembled for you. Remove it from the shipping container and proceed with the installation instructions.

If you did not purchase the Wiring Kit, you will find a properly sized power connector that will plug into the Wi-FI access point. You must assemble the connector to the cable now as shown below:

Once assembled, plug the connector into the Wi-Fi Access Point Optional Power Adapter port on the bottom of the unit.



Route the completed Wi-Fi Access Point power cable assembly to the Optimum Residential Charging Center. Mount the Wi-Fi Access point to the desired location using the screws and bracket provided in the shipping container following the instructions provided in the box.

IMPORTANT!

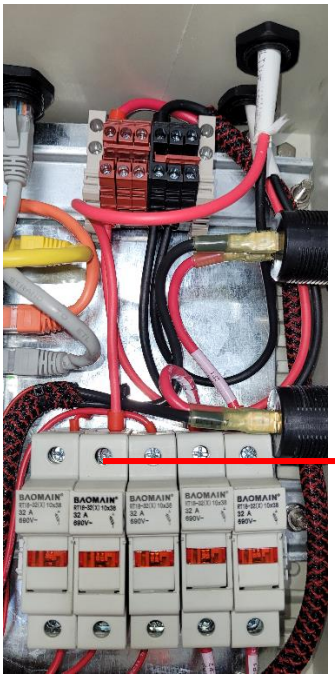
Before securing the Wi-Fi Access Point to the mounting surface, record the WAP password located on the label on the underside of the unit. You will need this information later in this manual.

Record the information here for your record keeping:

The final wiring connection process is to install the power cable to the Optimum Residential Charging Center for the Wi-Fi Access point as follows:

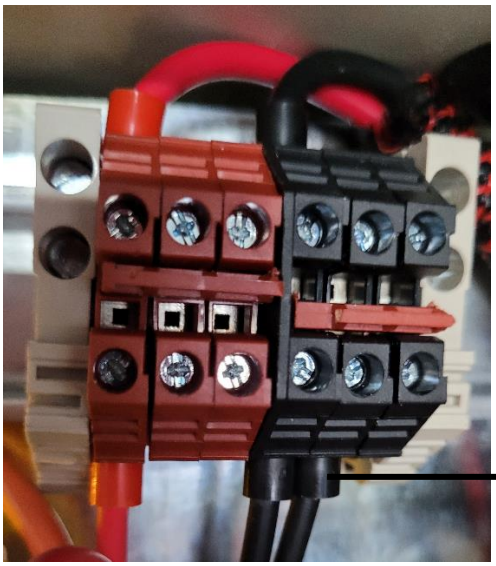
1. If you are preparing the cable assembly yourself, strip off 6 inches of the cover insulation on the wire pair cable. Remove the cable gland retaining nut top and pull out the rubber grommet. Slide the cable gland nut over the wire pair and past the section you stripped off the insulation jacket. Next, slide the rubber sealing washer onto the wire and push it 1.5 inches past the insulation stripped off area. Insert the Black and Red wire pair through the cable gland located on the top of the Optimum Residential Charging Center as shown. Carefully push the rubber sealing washer into the cage on top of the cable gland so it sits flush, the hand tighten the retaining nut to complete. It does not matter which cable gland is used.

2. Connect the +RED wire to the Fuse Holder as shown here:



Connect the + RED Power supply wire from the Wi-Fi Access Point to the SECOND FUSE HOLDER from the left-hand side in the row of holders as shown here.

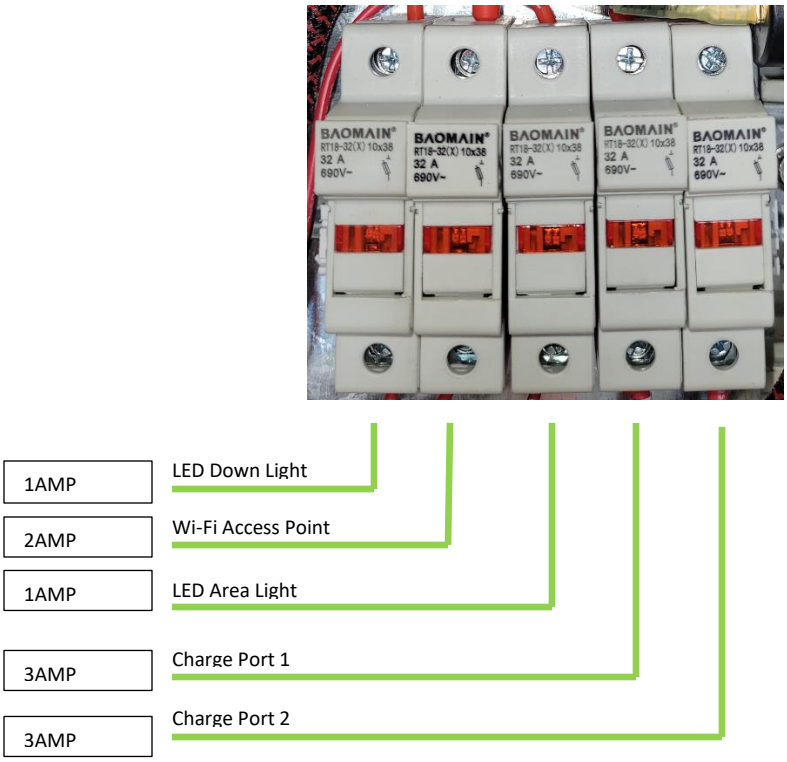
3. Connect the -BLACK wire to the Terminal Strip at the top of the system as shown here:



Connect the - BLACK Power supply wire from the Wi-Fi Access Point to the Terminal Strip as shown here. Tighten with a small Phillips screwdriver.

4. When the wiring is completed, insert a 2Amp fuse into the Fuse Holder from the included Fuse Kit and secure.

5. Now we are ready to apply power to the system from the Optimum Solarius-500 system.
   Insert fuses into the remaining Fuse Holders as shown, left to right:



6. Plug in the Power and Network LAN connectors now to the Optimum Solarius-500 Power Port.

You should now see the Blue Power Light lit up on the Optimum Residential Charging Center. Operate the three switches on the front panel and be sure the LED lights work and press the power switch on each of the Charging Ports to ensure operation.

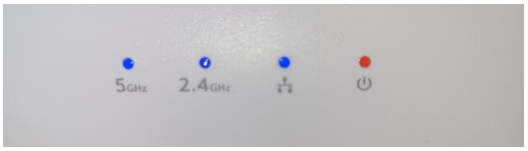
Step Four: Configuring the Wi-Fi Access Point and Network

Your Optimum Residential Charging Center will provide you with internet access via hardwire Ethernet connection or Wi-Fi when the grid power is down via the 4G GSM cellular router in the Optimum Solarius-500.

This section will guide you through the simple steps to activate and secure your new Wi-Fi network.

Step One:

When you initially power up the Wi-Fi Access Point by activating the switch on the front of the Optimum Residential Charging Center, it will boot up and the lights should begin to show activity. There should be an Orange Power light right away. The Blue Network lights will take about 3-4 minutes the first time as the device boots and discovers the new network connection.



Power Light- Solid Orange = WAP is powered on and working.

LAN Light- Solid Blue= LAN Port detects a link

Blinking Blue= LAN Port is receiving or transmitting data.

2.4GHz/5GHz Lights- Solid Blue= Radios are working without connected clients

Blinking Blue= Radios are working and transmitting/receiving data.

Configuration Steps:

The next steps will require either a cell phone with wi-fi or a wi-fi enabled device such as a laptop to complete.

Open the software on your device where you can scan and see available wi-fi networks. You will be looking for a new network called WAX214 Management Wi-Fi Network. **Note: For security reasons, this management network will self shut down after 15 minutes if you don't connect to it. Should this happen, press the reset switch located on the back of the Wi-Fi Access point to re enable it.**

Find and select your new WAX214's management SSID. The default name is printed on the device label if needed.

Enter the default password, (network key recorded earlier). Your device will now join the new network.

Set a new local device password, and set a new name for your Network that you will use going forward.

Set a new passphrase for the Wi-Fi network access. (This is the new password that allow devices to connect to the network you have created).

Click Apply to set the changes.

The Wi-Fi Access Point is now configured and enabled. Enjoy!!

Disclaimer and Warranty Information

Solar Research Tecnologies LLC makes **NO WARRANTY** concerning the accuracy or application suitability of any published information in our product documentation. We assume no responsibility or liability for Loss/Damage whether direct or indirect, consequential or incidental which may arise due to use of the published information contained within the documentation. Any Use of such information is entirely at the User's Risk.

Solar Research Technologies LLC shall not be responsible for system failures, damages, or injury as a result of improper installation of their products. Information in the publication is updated on an as needed basis. Please check our website for the latest information and product information releases.

This product is highly recommended to be installed by a licensed electrician.

5 year Product Warranty

Solar Research Technologies LLC provides a Five-year limited warranty against defects in materials and workmanship. The Warranty begins upon the initial purchase date. This must be indicated on your warranty card and upon proper registration. This Warranty applies to the original purchaser and can be transferred only if the Product remains installed in the original use location.

The warranty does not apply to any Product that has been modified or damaged by the following:

* Installation or Removal

* Alteration or Disassembly

*Normal Wear and Tear

*Accident or Abuse

*Lightning:

*Operation or installation contrary to manufacturer product instructions

*Fire, Floods and/or Acts of Nature

*Damages incurred during Shipping or Transportation

*Incidental or consequential damage caused by other connected equipment

*Any product whose serial number has been altered, tampered with, or removed

* Any other event not foreseeable by Solar Research Technologies, LLC

Liability for any defective Product, will be limited to the repair or replacement of the Product, at Solar Research Technologies LLC sole discretion.

Solar Research Technologies LLC cannot warranty or guarantee workmanship concerning installations its Products. This Warranty does not cover the costs of installation, removal, shipping, or reinstall of Products.

Return Policy - No returns will be accepted without prior authorization and must include the Return Material Authorization number. Please call us before returning any products and we will issue the RMA number for you at 863-320-4939.

Any product that is returned must be brand new, in excellent condition and packaged in the original manufacturer's carton with all corresponding hardware and documentation.

Returns must be shipped with prepaid freight and insured via the carrier of your choice to arrive back at Solar Research Technologies within 30 days of your initial delivery or pick-up.

Shipping charges cannot be refunded. **All returns are subject to a 35% restocking fee**.

No returns will be accepted beyond 30 days of original delivery.

The cost of replacing missing items (parts, manuals, etc.) will be deducted from the refund amount.