



**EPEQ® Electrified Power Equipment®
Solar Assist™ System
Manual P/N: 090243_r0**



**INSTALLATION MANUAL AND SERVICE PARTS LIST
KEEP THE MANUAL WITH THE VEHICLE**

NOTE: Read this manual before installing, operating or servicing this equipment. Failure to comply with the operation and maintenance instructions in this manual will VOID THE EQUIPMENT WARRANTY.

This publication contains the latest information available at the time of preparation. Every effort has been made to ensure accuracy. Vanair®, a Lincoln Electric Company reserves the right to make design change modifications or improvements without prior notification.

Making unauthorized modification to the system components WILL VOID THE WARRANTY! Always contact Vanair® before making any changes to the EPEQ® Solar Assist™ system.

EPEQ® ELECTRIFIED POWER
EQUIPMENT®

EXCLUDES
ELEMENT® BATTERY



VANAIR® VANTAGE WARRANTY

This limited warranty supersedes all previous Vanair® warranties and is exclusive with no other guarantees or warranties expressed or implied.

LIMITED WARRANTY—Subject to the expressed terms and conditions set forth below, Vanair®, a Lincoln Electric Company ("Vanair"), of Michigan City, Indiana (USA), warrants to the original retail purchaser of new Vanair® equipment that such equipment is free from defects in materials and workmanship when shipped by Vanair®.

For warranty claims received by Vanair® within the applicable warranty periods described below, Vanair® will repair or replace any warranted equipment, parts or components that fail due to defects in material or workmanship or refund the purchase price for the equipment, at Vanair's discretion. Vanair® is not responsible for time or labor to gain access to the machine to perform work. **WARRANTY WILL BE VOID IF GENUINE VANAIR® PARTS AND FLUIDS ARE NOT USED.**

Vanair® must be notified in writing within thirty (30) days of any such defect or failure. **All warranty or returns must be pre-authorized in writing prior to performing warranty work.** Call Vanair® for process and forms. Vanair® will provide instructions on the warranty claim procedures to be followed.

Warranty will commence upon receipt of the Warranty Registration Card. If the Warranty Registration Card is not received within six (6) months of shipment from Vanair®, the warranty commencement date shall be thirty (30) days from the date of shipment from Vanair®. Records of warranty adherence are the responsibility of the end user.

1. Inverters: 1 Year Parts / 1 Year Labor
2. Converters: 1 Year Parts / 1 Year Labor
3. Chargers: 1 Year Parts / 1 Year Labor
4. Electric Motors: 1 Year Parts / 1 Year Labor
5. Alternators: 1 Year Parts / 1 Year Labor
6. Compressor Air End:
 - Rotary Screw: Lifetime with Vanair® Authorized Service Kits and Lubricants : 3 Years Labor
 - Reciprocating: 3 Years Parts / 1 Year Labor
7. Hydraulic Pumps/Motors: 2 Years Parts / 1 Year Labor
8. EPEQ® Solar Assist™:
 - Solar Panel: 5 Year Parts / 1 Year Labor
 - Charge Controller: 2 Years Parts / 1 Year Labor
 - Installation Kit: 1 Year Parts / 1 Year Labor
9. 1 Year Parts / 1 Year Labor on the following:
 - All electronics and controls including, but not limited to:
 - (i) I/O Boards
 - (ii) Modules
 - (iii) Panel Boxes
 - (iv) Instrumentation
 - (v) Clutches
 - (vi) Solenoids
 - (vii) Running Gear/Trailers
 - (viii) Cooler Cores and Fans

This Limited Warranty shall not apply to:

1. Consumable components, such as: shaft seals, valves, belts, filters, capacitors, contactors, relays, brushes, wire or parts that fail due to normal wear and use.
2. Items furnished by Vanair®, but manufactured by others, such as engines and trade accessories (these items are covered by the manufacturer's warranty, if any).
3. Equipment that has been modified by any party other than Vanair® or equipment which has not been used and maintained in accordance with Vanair's specifications.

4. Equipment which has been improperly installed and/or improperly operated, based upon Vanair's specifications for the equipment or industry standards.

5. Equipment installed by non-authorized or third party personnel. Vanair® products are intended for purchase and use by commercial/industrial users and persons trained and experienced in the use and maintenance of industrial equipment.

In the event of a warranty claim covered by this Limited Warranty, the exclusive remedies shall be, at Vanair's sole discretion: (i) repair; or (ii) replacement; (iii) where authorized in writing by Vanair® in appropriate cases, the reasonable cost of repair or replacement at an authorized Vanair® service facility; or (iv) payment of (or credit for) the purchase price (less reasonable depreciation based upon actual use) upon return of the equipment at the warranty claimant's risk and expense. Vanair® will pay standard ground freight for any warranty item shipped to and from Vanair® or (Vanair® designated facility) within the first year of the applicable warranty period. Any additional expedited freight cost is the responsibility of the purchaser.

TO THE GREAT EXTENT PERMITTED BY APPLICABLE LAW, THE REMEDIES PROVIDED HEREIN ARE THE SOLE AND EXCLUSIVE REMEDIES APPLICABLE TO THE VANAIR® EQUIPMENT. IN NO EVENT SHALL VANAIR® BECOME LIABLE FOR DIRECT, INDIRECT, SPECIAL, PUNITIVE, INCIDENTAL OR CONSEQUENTIAL DAMAGES (INCLUDING LOSS OF PROFIT OR LOST BUSINESS OPPORTUNITY), WHETHER BASED ON CONTRACT, TORT OR ANY OTHER LEGAL THEORY. IN NO EVENT SHALL VANAIR® BECOME OBLIGATED TO PAY MORE ON ANY WARRANTY CLAIM THAN THE PURCHASE PRICE ACTUALLY PAID BY THE ORIGINAL RETAIL PURCHASER.

THIS LIMITED WARRANTY IS MADE IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND/OR FITNESS FOR A PARTICULAR PURPOSE, OR ANY OTHER WARRANTY OR GUARANTY ARISING BY OPERATION OF LAW. ANY WARRANTY NOT EXPRESSLY PROVIDED HEREIN, IMPLIED WARRANTY, GUARANTY AND ANY REPRESENTATION REGARDING THE PERFORMANCE OF THE EQUIPMENT, AND ANY REMEDY FOR BREACH OF CONTRACT, IN TORT, OR ANY OTHER LEGAL THEORY WHICH, BUT FOR THIS PROVISION, MIGHT ARISE BY IMPLICATION, OPERATION OF LAW, CUSTOM OF TRADE, OR COURSE OF DEALING ARE EXCLUDED AND DISCLAIMED BY VANAIR®.

Some states in the United States of America do not allow limitations of how long an implied warranty lasts, or the exclusion of incidental, indirect, special or consequential damages, and as such, the above limitations and exclusions may not apply to you. This warranty provides specific legal rights. Other rights may be available to you, but may vary from state to state.

In Canada, legislation in some provinces provides for certain additional warranties or remedies other than as stated herein, and to the extent that they may not be saved, the limitations and exclusions set out forth above may not apply. This Limited Warranty provides specific legal rights, and other rights may be available, but may vary from province to province.

**ALL WARRANTY OR
RETURNS MUST BE
PRE-AUTHORIZED PRIOR
TO PERFORMING
ANY WARRANTY WORK.**

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EFFECTIVE: JULY 1, 2026

VANAIR®
A Lincoln Electric Company

Warranty Claims Procedure

Warrantied Vanair® Parts

Owners of Vanair® equipment must follow this process for repair or replacement of warrantied items. Do not return items without prior authorization from the Vanair® Warranty Administrator.

PROCEDURE: Customers needing assistance in troubleshooting a system and/or returning parts, please follow the steps below.

1. Locate the machine's serial number(s).
2. Make a list of the symptoms/condition/malfunctions noticed along with any applicable temperature and pressure readings, and also the number of operational hours if available.
3. Note that the above information is required on the Return Material Authorization Form; necessary for warranty processing if the warranty claim is deemed valid by the service case review.
4. Contact the Vanair® Service Department by phone (1-844-VANSERV or 1-219-879-5100) to speak with a Service Technician.
5. Vanair® Service will troubleshoot the problem based on the information provided by the customer, and attempt to return the unit to service as quickly as possible.
6. If the unit cannot be returned to service, and Vanair® determines this matter is a warranty issue, the Service Technician will provide a case number for the unit. The Warranty Department will then assign an RMA (Return Material Authorization) number that will provide for the return of the item to Vanair® for analysis and a final determination as to the item's warranty status.

7. Warranty Claims are solicited via a case number provided by the Vanair® Service Department. Blank Warranty Claim forms can be found on the Vanair® website under the Resources section.

All of the field information including the case number, serial number and description of the work performed is required.

IMPORTANT NOTES:

If the part is not returned by the customer to the Vanair® Service Department within 30 days, the RMA becomes void and any claims will be denied.

All labor claims or invoices must be approved by the Vanair® Warranty Administrator prior to starting repair work along with the cost of the repair. All paper work associated with the returned item and warranty repair cost must reference the RMA number issued against the part, and be forwarded to Vanair® within 30 days of the completion of work.

The RMA number must appear on the outside of the package where it can be seen before being returned.

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SECTION 1: Safety

1.1 GENERAL INFORMATION

The products provided by Vanair® are designed and manufactured for safe operation and maintenance, but ultimately, it is the responsibility of the operators and maintenance personnel to use this equipment safely. Part of that responsibility is to read and be familiar with the contents of this manual before operating or performing maintenance actions.

1.2 SUMMARY OF DANGERS, WARNINGS, CAUTIONS, AND NOTES

These notifications are placed throughout the manual in the sections where they apply. This subsection is a general summary of their contents.

1.2.1. DANGERS

DANGER

Indicates someone will be seriously injured or killed if this safety information is not followed.

1. **DO NOT** use the EPEQ® Solar Assist™ system in areas that are wet, cluttered, or have poor visibility. Operating machinery under these conditions greatly increases the risk of accidents and injuries.
2. Keep tools or other conductive objects away from live electrical parts.

1.2.2. WARNINGS

WARNING

Identifies actions or conditions which, if not avoided, could cause death or severe bodily injury.

1. **DO NOT** operate system if damaged during shipping, handling, or use. Damage may result in bursting and cause injury or property damage.
2. **DO NOT** perform any modifications to this equipment without prior factory approval.
3. **DO NOT** attempt to service the equipment while it is operating.

4. **DO NOT** operate the system if there is a known unsafe condition. Disable the equipment by disconnecting it from its power source.
Install a lock-out tag to identify the equipment as inoperable to others until it can be repaired or replaced.
5. **DO NOT** operate the system with any safety systems disabled, bypassed, or rendered inoperative.
6. **DO NOT** operate this equipment while you are under the influence of alcohol, drugs, or medications that may have any affect on your physical capabilities or judgment.
7. **DO NOT** operate the equipment while you are feeling ill.
8. **DO NOT** touch electrical wires or components while the machine is operating. They can be sources of electric shock. To reduce this risk, only allow qualified service personnel to do electrical installation or repair work. **ALWAYS** disconnect power from machine prior to accessing or exposing electrical components or equipment.

1.2.3. CAUTIONS

CAUTION

Identifies actions or conditions which may cause minor or moderate injury or damage to the equipment.

1. Be aware that certain parts may remain hot for a period of time even when the machine is not running.
2. All electrical connections should be made by a qualified electrician.
3. **DO NOT COVER OR PARTIALLY COVER THE CELLS ON THE PANEL.** Partial shading of the solar panel may affect panel output.

1.2.4. NOTICES

NOTICE

Emphasizes important information that may be helpful, crucial, or required by the user to operate the equipment properly.

1.3 IMPORTANT SAFETY INSTRUCTIONS

1. Improper operation or maintenance of this equipment could result in personal injury and/or property damage.
2. Please read and understand all warnings and operating instructions.

1.4 THINGS TO KNOW

Only those familiar with this information regarding the safe operation should use this system.

1. Read the manual carefully. Become familiar with the safety precautions and the controls for the correct use of this system.
Review the maintenance methods for this system (See **Section 4: Maintenance**).
 - Keep your work area clean.
 - Floors should be kept free from slippery conditions such as dust and wax.
2. Keep work area well lit.
3. Protect material lines from damage, cuts, and punctures. Keep all wires away from sharp objects, chemical spills, oil, solvents, and wet floors.

1.5 BEFORE EACH USE

1.5.1. INSPECT YOUR WORK AREA

1. Keep work area clean. Cluttered work areas contribute to accidents.
2. Keep the floor clean. Dust, oil, wax, and other debris can be a hazard and cause the floor to become slippery.
3. Only work under dry weather conditions and always keep the modules and tools dry during installation.

1.6 ELECTRICAL CONNECTION SAFETY PRECAUTIONS

1. Follow all applicable electrical and safety codes, as well as the National Electric Code (NEC) and the Occupational Safety and Health Act (OSHA).
2. Wiring and fuses should follow the same electrical codes and current capacity and be properly grounded.
3. Protect wiring from sharp edges and objects.

1.7 PROTECT EYES, HANDS, FACE, AND EARS.

1. Wear safety glasses (meeting ANSI Z87.1 or Canada CSA Z94.3-99) and use hearing protection when operating this unit.
2. Wear shoes to prevent shock hazards.
3. Don't operate the machine wearing loose jewelry or clothing (i.g. loose sleeves, scarves, ties, necklaces or bracelets). Tie long hair back to avoid entanglement with moving and rotating parts.

SECTION 2: Specifications

2.1 PRODUCT MODEL NUMBER AND DESCRIPTION

289473-SOLAR, 55W KIT

289474-SOLAR, 110W KIT

2.2 BILL OF MATERIAL

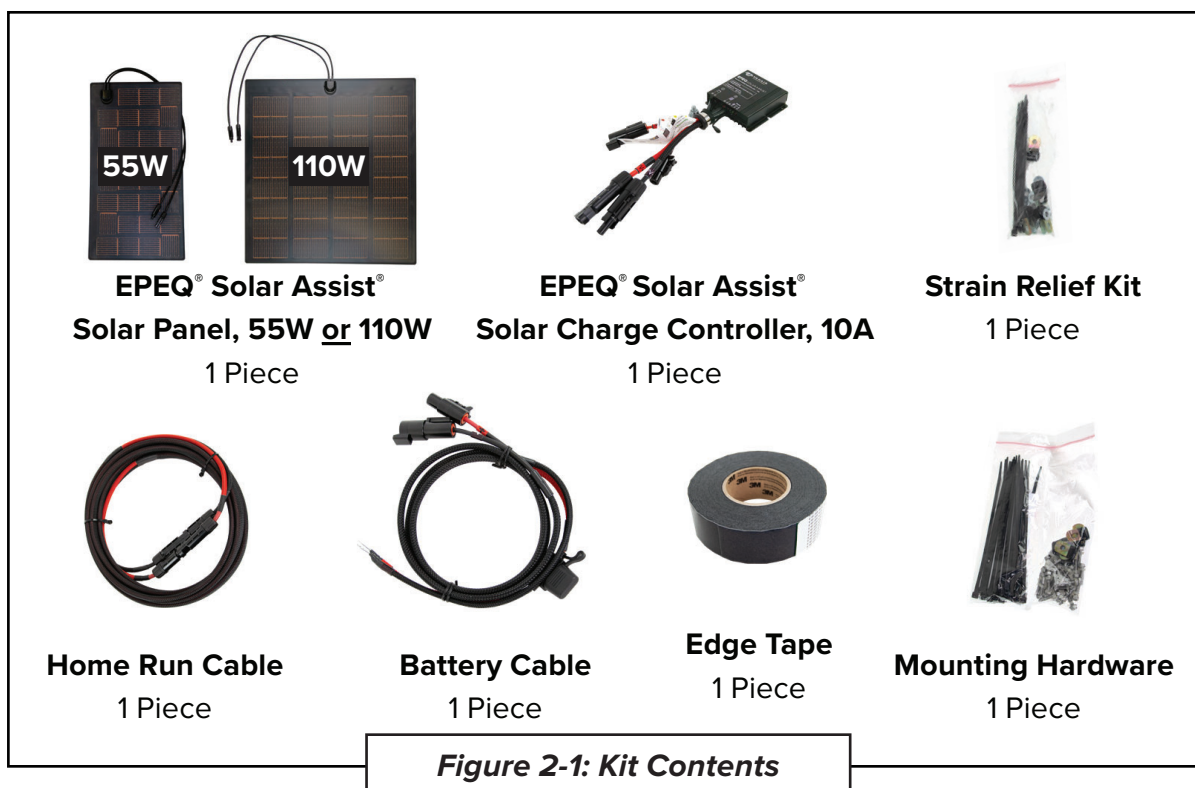
Table 2-A: Bill of Material

Component	#	Unit
Solar Panel (55W or 110W)	1	pc
Mounting Hardware Kit, Screw, Cable Clamp, Warning Label, Wire Tie	1	pc
Edge Tape	1	pc
Charge Controller Assembly		
Vanair® Optimized Charge Controller	1	pc
Battery Cable	5	ft
Home Run Cable with MC4 Connectors		
Home Run Cable (with 55W Kit)	10	ft
Home Run Cable (with 110W Kit)	20	ft

2.3 EPEQ® SOLAR ASSIST™ SYSTEM SPECIFICATIONS

Table 2-B: Technical Specifications

Electrical Characteristics (STC)	55W Panel	110W Panel
Rated Power (P_{Max})	55W	110W
Open Circuit Voltage (V_{oc})	21.4V	22.0V
Short Circuit Current (I_{sc})	3.0A	6.1A
Voltage at P_{Max} (V_{Max})	18.2V	18.7V
Current at P_{Max} (I_{Max})	2.9A	5.9A
Cabling	3ft abrasion-protected cables with MC4 connectors	
Panel Dimensions (L x W x H)	30 x 16 x 1/8in (770 x 418 x 4mm)	34 X 31 X 1/8in (853 X 786 X 4mm)
Panel Weight	~3lb (1.4kg)	~6.5lb (3kg)



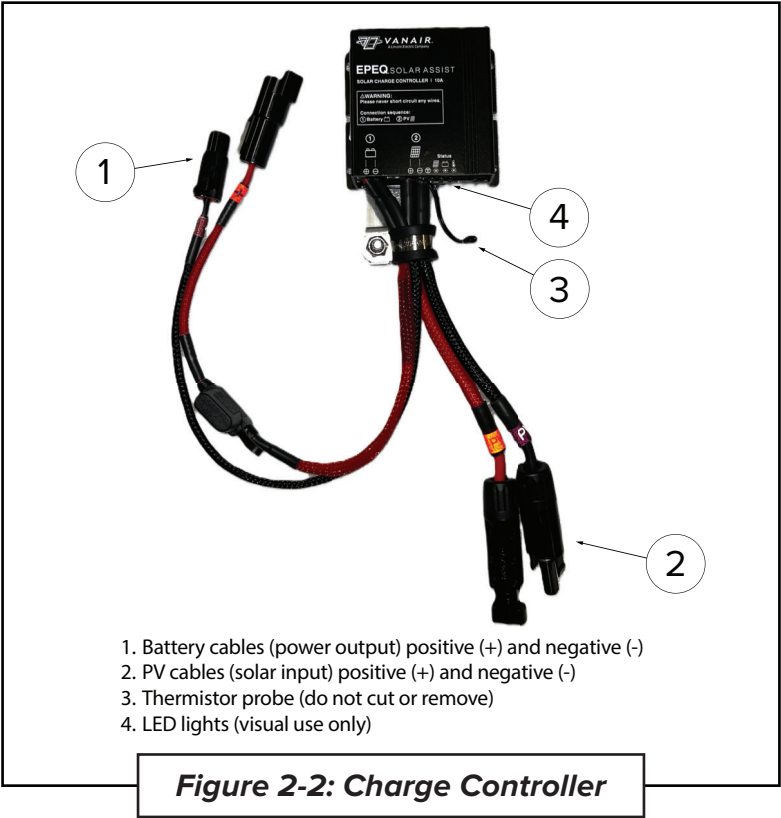


Table 2-C: Charge Controller Technical Specifications

Characteristic	Specification	Characteristic	Specification
Electrical		Mechanical	
Max. Charging Current	10A	Dimensions (L × W × H)	3.38 × 3.19 × 0.91 in (85.8 × 81 × 23.1 mm)
Nominal System Voltage	12V	Net Weight	0.6 lbs. (260 g)
Max. Input Power	130W	Battery @ 77°F	
Max. Voltage on Battery Terminal	25V	MPPT Charging Voltage	< 14.5V
Max. Charge Conversion	96.5%	Boost Voltage	14 - 14.8V
Self-Consumption	10mA	Equalization Voltage	14 - 15V
PV / Panel		Float Voltage	13 - 14.5V
MPPT Tracking Range	(Battery voltage + 1V) to (0.9 × V _{oc})	Low Voltage Disconnect	10.8 - 11.8V
Max. Tracking Efficiency	> 99.9%	Reconnect Voltage	11.4 - 12.8V
Environmental		Over-charge Protection	15.5V
Ambient Temperature	-31°F to 140°F (-35 to +60°C)	Supported Battery Types	*Lead-Acid, Gel, AGM
Ambient Humidity	0 - 100%RH	Temp. Compensation	-4.17mV/K per cell (Boost, Equalization); -3.33mV/K per cell (Float)
Max. Altitude	13,123 ft / 2.49 miles (4 km)		
Ingress Protection	IP67	*NOTE: Not optimized for lithium-based batteries	

SECTION 3: Installation

3.1 KIT PACKAGING RECEIPT/INSPECTION

Upon receipt of the kit packaging, inspect the exterior of the packaging for signs of shipping/transit damage. Any damage should be reported immediately to the shipping company.

3.2 POINTS TO CHECK BEFORE INSTALL



Figure 3-1: Tools Required for Install

*Optional

**If rubber roller not available use microfiber cloth

1. Wear insulated gloves when panels are exposed to light.
2. Use a multimeter for volts, amps, resistance, and continuity capable of measuring DC and AC up to 600V and 20A. See **Section 3.3** for further detail.
3. Panel should be mounted before operating electrical components.
4. **DO NOT** direct concentrated sunlight or artificially concentrated sunlight on the panel.
5. **DO NOT** wear metallic jewelry to avoid electric shock during installation.
6. **DO NOT** allow children or unauthorized personnel near the area of panel installation.
7. **DO NOT** install panel where flammable gases or vapors are present.

3.3 PRE-INSTALL VOLTAGE CHECK

NOTE

Prior to installing the panel, ensure the panel is producing power.

1. Ensure the panel has access to sunlight.
2. Insert **RED (+)** meter cable into PV+ cable MC4 connector.
3. Insert **BLACK (-)** meter cable into PV- cable MC4 connector.
4. If panel is functioning properly and exposed to direct sunlight, the Voltage should read 18VDC - 24VDC.
 - If the voltage reads negative, the positive and negative leads from the panel are inverse.
5. If the panel is non-functional, the voltage will read 0VDC.
 - Please contact Vanair® immediately for further steps.



Figure 3-2: Voltage Check

3.4 INSTALL PANELS

3.4.1. ASSESSING THE CONDITION OF THE MOUNTING SURFACE

1. Observe and measure surface obstructions.
2. Ascertain which areas need extensive cleaning.
3. Surface must be at least 60°F (15°C).

4. 3M Tape Primer 94 may be required for use if the installation surface is rough, textured, plastic, and/or not smooth and flat. Contact Vanair® for further details and instruction. Tape primer may also be required if the installation surface is below 60°F (15°C).
5. Apply isopropyl alcohol, acetone, or any quality industrial surface cleaner/degreaser that does not leave any surface residue to a microfiber cloth and apply with force to the mounting surface to remove any substance that would limit adhesion.

3.4.2. INSTALL PANEL

1. Use tape to mark location where panel is to be mounted.
2. Place panel, align to marked line. Peel off approximately 12 inches of liner from below panel, ensure panel conforms to the surface.



Figure 3-3: Peeling of Adhesive Backing

3. Roll out the module with rubber roller or microfiber cloth.
4. Repeat **Steps 2 and 3**, continue peeling 12-inch sections of the liner until the entire panel is rolled out.

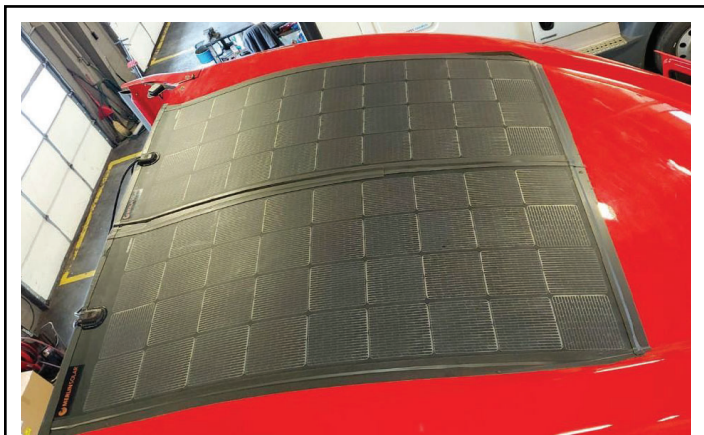


Figure 3-4: Example Module Installation

3.4.3. EDGE TAPE PLACEMENT

1. Apply isopropyl alcohol, acetone, or any quality industrial surface cleaner/degreaser that does not leave any surface residue to a microfiber cloth and apply with force to the mounting surface to remove any substance that would limit adhesion.
2. Place edge tape along sides of the module, 0.25 inches away from the edge of the cells.

NOTE

Ensure that the edge tape does not cover any portion of the solar cells.

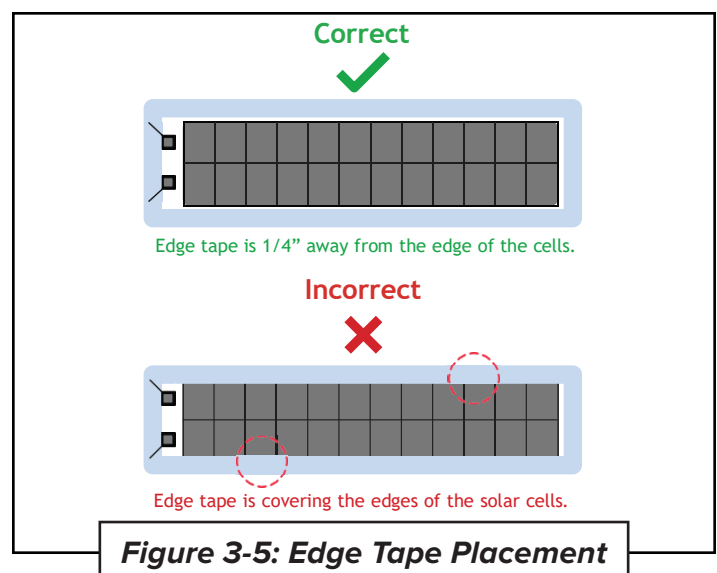


Figure 3-5: Edge Tape Placement

3.5 MOUNTING THE CHARGE CONTROLLER

1. The charge controller is designed to mount away from direct heat, water, salt, snow, ice, and debris.
2. Mount in a cool area.
3. **DO NOT** install the charge controller and non-sealed or open venting type batteries in the same enclosed space.
4. When installing the controller, ensure surrounding area is free of obstructions and there is sufficient air flow through the controller's heat sink.

CAUTION

Leave AT LEAST 6 inches (150 mm) of space above and below the controller for natural cooling.

CAUTION

If installed in an airtight or sealed enclosure, ensure closure can reliably dissipate heat. Make sure the airflow around the charge controller is not obstructed.

5. Mark and drill mounting hole locations using charge controller mounting flange template.
6. Place charge controller and mount using the hardware supplied with the kit.

CAUTION

There is a high-voltage risk due to the photovoltaic (solar) array's potential to generate a very high open-circuit voltage.

3.6 WIRING THE SYSTEM**3.6.1. WIRING PRECATUIONS**

1. Ensure proper strain-relief is applied to the battery cable, PV cable, and home run cable.
2. Corroded wires, frayed wires, poor connection points or may cause extreme heat which can melt the wire insulation layer, burn the surrounding materials, and can even cause fire.

Table 3-A: Led Indicators

LED Color	Status	Meaning & Possible Issue	Corrective Action
*Green	On Solid	PV connected, not charging; Battery full	No action necessary. Working as expected.
	Slowly Flashing (0.5/2s)	Charging	No action necessary. Working as expected.
	Flashing (0.5/0.5s)	Equal or Boost charging (Gel, Liquid, or AGM)	No action necessary. Working as expected.
	Fast Flashing (0.1/0.1s)	MPPT Charging	No action necessary. Working as expected.
	Off	Over voltage protection; High voltage at battery terminal	Check if other sources are overcharging the battery. If not, controller may be damaged.
	Off	Battery overvoltage >15.5V (Li: CVT+0.2V)	Check if other sources are overcharging the battery. If not, controller may be damaged.
Yellow	Off	Over voltage protection; High voltage at battery terminal	Check battery wires, fuse, and battery.
	Off	Battery wires or battery fuse damaged or battery has high resistance	Check battery wires, fuse, and battery.
	On Solid	Battery normal	No action necessary. Working as expected.
	Slowly Flashing (0.5/2s)	Battery voltage is low	Recharge battery.
	Fast Flashing (0.1/0.1s)	Low voltage protection; Battery is empty after a short time; Battery has low capacity	Change battery.
Red	Flashing (0.5/0.5s)	Over-temperature	Charge until above Low Voltage reconnect point.
All LEDs Flashing quickly		Battery voltage is outside operating range (10-15V)	Charge or discharge battery to the correct system voltage (~12V).
*If the green LED is on but the battery is not charging, the solar panel may not be producing power or the wiring may be reversed. Verify the panel output and check all wiring connections. If the panel is not generating power, contact Vanair®.			

WARNING

Before wiring, ensure that all connectors are tightened and all wires have proper strain relief methods in place.

DANGER

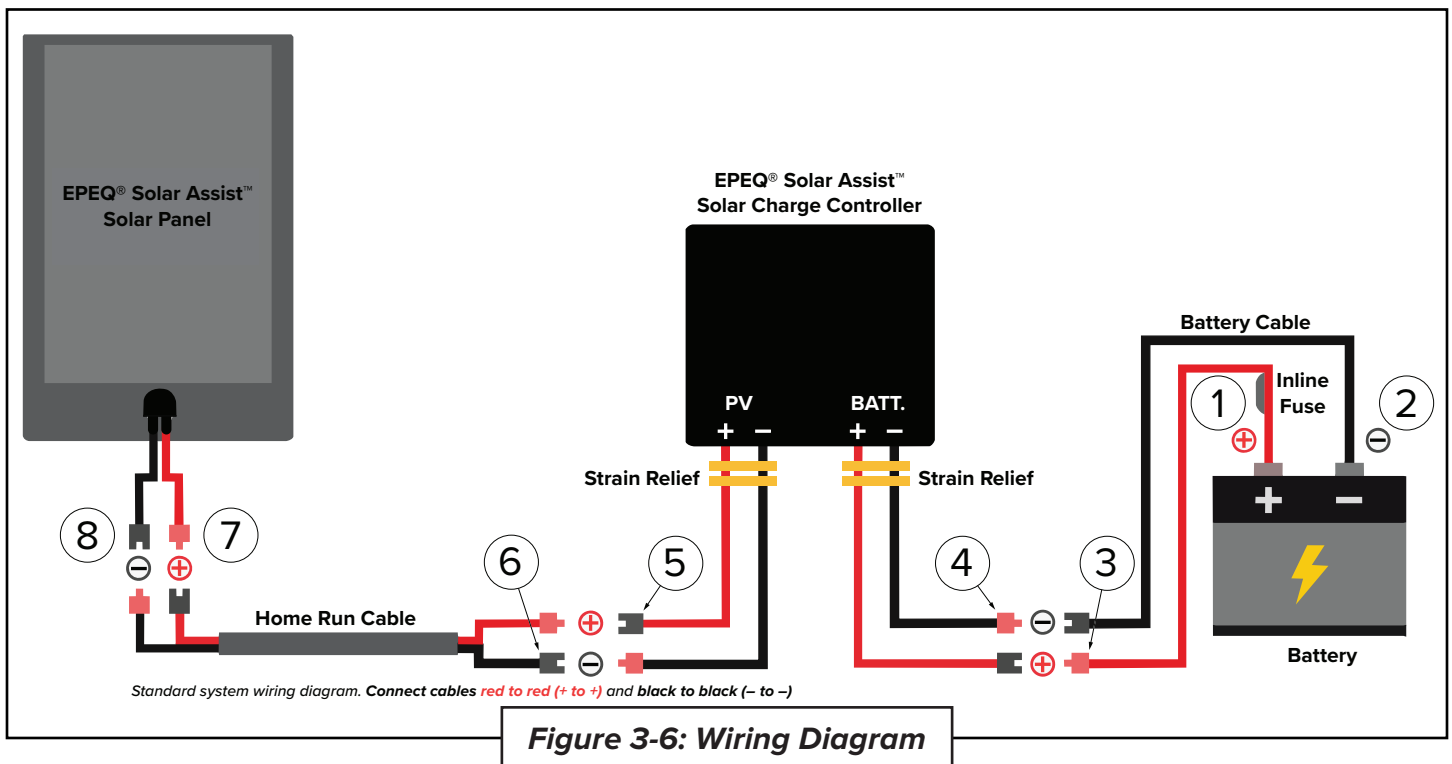
FIRE HAZARD! If the battery connection is reversed, the charge controller is going to be damaged and will create a thermal event.

3.6.2. WIRING PROCEDURE

The system connections **MUST** be made **IN ORDER** as shown in the following steps:

1. Positive battery cable ring terminal to battery **RED (+)** terminal on battery.
2. Negative battery cable ring terminal to battery **BLACK (-)** terminal on battery.
3. Positive battery cable to battery **RED (+)** terminal on charge controller.
4. Negative battery cable to battery **BLACK (-)** terminal on charge controller.
5. Positive home run cable to PV **RED (+)** terminal on charge controller.
6. Negative home run cable to PV **BLACK (-)** terminal on charge controller.
7. Positive home run cable to **RED (+)** cable on solar panel.
8. Negative home run cable to **BLACK (-)** cable on solar panel.

NOTE: When disconnecting the system, the sequence will be reversed.



SECTION 4: Maintenance

4.1 SYSTEM CHECK

1. Ensure the charge controller is receiving power by checking that the light is blinking green.
2. Use DC clamp-on multimeter to measure amperage of PV wire.
3. Positive HR cable to controller: [0-20A]
4. Positive cable to battery: [0-20A]
5. If controller does not respond, ensure connections are sound. Please note if batteries are full, no current will be available. This is an indication that the system is working properly. Check again when batteries are not full.
6. Check panels at least once a month for dirt and debris, and clean with water as needed. This is to mitigate hotspot issues that could arise if dirt or debris is obstructing cells over a long period of time.
7. Tighten all battery/charge controller connections. Use a proper torque wrench to tighten batteries, following battery manufacturer specs.
8. Pull test all floating connections.

NOTICE

V_{oc} is voltage coming out of the HR cable to the controller. The V_{oc} of the panel array can be significantly higher than the charging voltage.

4.2 SYSTEM MAINTENANCE

1. Clean surface of panels as needed with soap and water.
2. When replacing batteries, ensure that terminals are cleaned as well. Make sure the solar panels are disconnected by removing the fuse or disconnecting the MC4 connectors.
3. After replacing the batteries, make sure the solar panels are connected again.

CAUTION

In the rare event that you need to jump start the vehicle, make sure solar panels are disconnected.

4.3 PREVENTATIVE MAINTENANCE

DANGER

Electric shock hazards! Make sure that all power supplies to the controller have been disconnected before any system maintenance is performed!

NOTE

To maintain the best long-term performance for your charge controller, it is recommended to conduct inspections four times per year.

1. Make sure the airflow around the charge controller is not obstructed, and remove any dirt or debris from the heat sink.
2. Check if the insulation layers of all exposed wires are damaged due to dry rot, sun exposure, friction with nearby objects, destruction of insects or rodents, etc.
 - If insulation is damaged, it is necessary to repair or replace the wire. Contact Vanair® for additional support.
3. Check all wiring terminals for corrosion, insulation damage, signs of high temperature, and burning/discoloration.
4. If damage is present, replace the affected component.
5. Ensure all terminal screws are properly tightened.
6. Check for dirt, insects, and corrosion. Clean as required.
7. If a lightning arrester is being used and it has failed, replace it in time to protect the charge controller, and other devices, from be damaged by lightning.



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