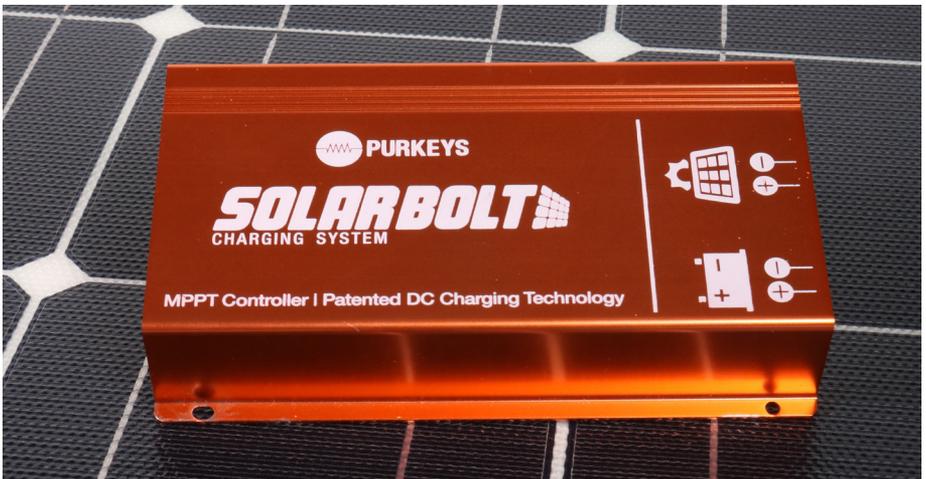


PURKEYS

A MISSION CRITICAL ELECTRONICS BRAND

TRACTOR/TRUCK SOLAR BOLT

INSTALLATION GUIDE





CONTENTS

General Information	2
Installation Preparation	3
Installation.....	4
LED Logic.....	9
Limited Commercial Warranty Policy.....	12

GENERAL INFORMATION

The Solar Bolt™ Charging System is a MPPT (Maximum Power Point Tracking) charge controller with automatic temperature compensation for up to a 300 watt solar application. The Solar Bolt charge controller utilizes patent-pending technology that is designed to work in conjunction with the electrical system on a vehicle or trailer. The Solar Bolt provides three-stage charging for the batteries when the vehicle's primary charging system is not active. It senses when the primary charging system is active and matches the charge voltage. This enables the solar panel to deliver up to its full output capability to the batteries when the vehicle is running. The module's technology allows the Solar Bolt to provide power to the electrical system of the vehicle, which reduces the electrical load on the alternator and, in turn, reduces the mechanical load on the engine, thereby realizing fuel savings.

INSTALLATION PREPARATION

If the bond surface is wet or dirty, the solar panel may not completely bond. We do **not** recommend solar panel installations when surface temperatures are below 40 degrees Fahrenheit or where there is moisture on the bond surface. Any installs completed during the winter should be done in a heated shop where the bonding surface is warm and dry.

Purkeys is not responsible for failures caused from installs completed in non-recommended conditions.

Tools and Equipment Needed

- Maroon or Gray Scotch-Brite pad
- Isopropyl alcohol
- Roof seal 4” bonding tape
- Rags
- Zip ties
- Rubber gloves
- Optional: Sikaflex 221 or 291

Note: Use proper Personal Protective Equipment (PPE), as needed.

INSTALLATION

Step 1: Determine the mounting position of the panel. For raised roof applications, this would be the center of the roof, 4 inches in front of the leading edge of the upper cab roof fairing. For flat roof installations, it should be on the drivers side at least 4" from the back of the cab and 4" from the edge, just past the rounded edge of the cab.

Step 2: Mark the mounting area for the panel with masking tape, then clean the roof with glass cleaner. Abrade the surface with a Scotch-Brite pad to remove surface impurities. Clean with isopropyl alcohol and a clean rag. Repeat process until the area is clean and no additional residue is found on the rag or on the bonding surface.

Step 3: Route the cable down the back of the cab so that it can be securely fastened to avoid damage.

Note: Cable routing will be determined by the vehicle owner.

Note: It may be necessary to drill a hole or notch the panel on the rear of the roof fairing so the solar panel wiring can be routed through.



TRACTOR/TRUCK SOLAR INSTALLATION GUIDE

Step 4: Once the surface is dry, usually 10 to 15 minutes, partially remove the backing material from the mastic of the panel and place the panel according to the alignment marks.

Step 5: Pull the backing off the mastic as the panel is laid down on the surface. The panel should be laid down by rolling the panel onto the bond surface. This will ensure there are no air bubbles under the panel.

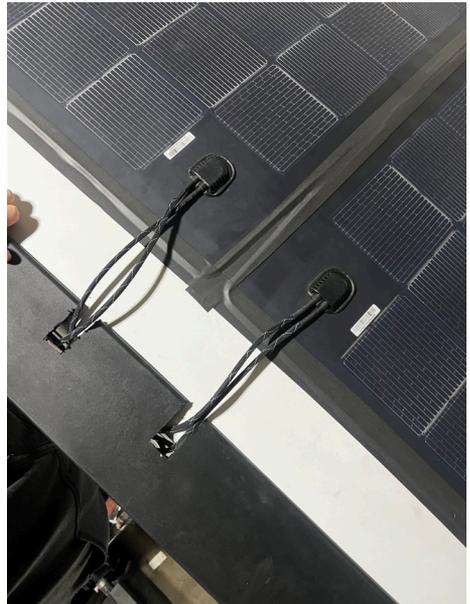
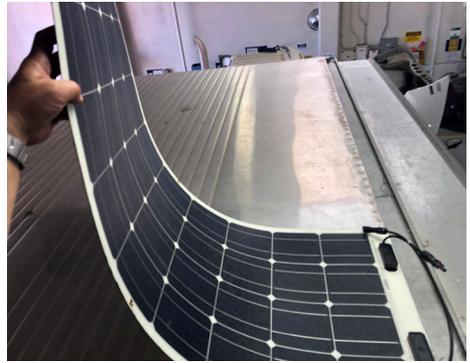
Step 6: Using a microfiber cloth or a rubber roller, apply pressure to the panel, making sure that the mastic meets the bonding surface.

Step 7: Apply edge tape to the panels, keeping it at least 1/4" from the solar cells.

Note: Tape covering cells will reduce the output of the panel

Step 8: Connect the harness and route it at the predetermined back of cab location. Secure it using wire ties or P clamps.

Important: Once the harness is secured to the back of the cab, disconnect it from the solar panel until the battery connections are made.



Step 9: At the bottom of the cab, route the harness toward the battery box.

Step 10: Secure the wires to air lines or wiring from the back of the cab to the battery box, leaving enough slack in the wiring to allow for cab movement.



Step 11: Route the harness into the battery box and secure it to the battery cables using plastic wire ties.

Step 12: Select the mounting location for the control module and cut the cable to length. Be sure to place the controller where the LED lights can be easily seen from the battery box opening.



Note: Do Not mount the controller where it could come in contact with the positive or negative battery posts.

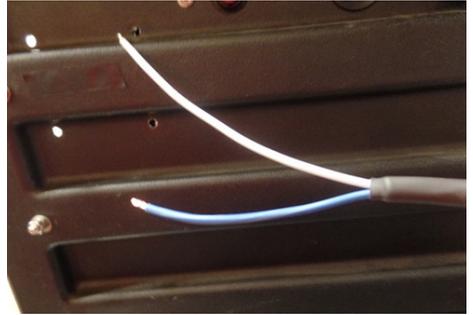
Note: Do Not mount the controller to a battery box cover.

Step 13: Mount the Solar Bolt controller near the batteries where it does not have direct contact with the outside elements and debris. Use the supplied hardware kit (kit shown here). A drop of blue Locktite can be placed on the screw next to the nut for added security.



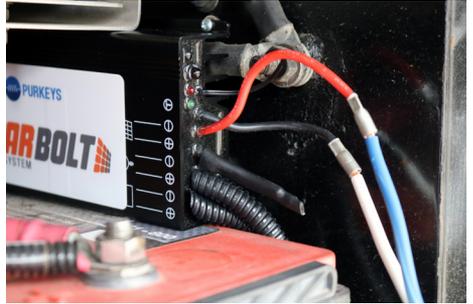
TRACTOR/TRUCK SOLAR INSTALLATION GUIDE

Step 14: Strip 4" off the outer jacket and install a piece of 3/4" black heat shrink at the end of the outer jacket.



Step 15: Strip 3/8" off both the blue and white wires. Slide red heat shrink over the blue wire and black heat shrink over the white wire.

Step 16: Connect the blue wires together with a supplied butt splice. Then crimp, solder, and install heat shrink over it. Repeat the process for the white wire.



Note: For 20-amp controllers, the red wire will connect to the blue wire, and the black wire will connect to the white wire.



Step 17: Connect the fused red wire to positive and the fused black wire to the negative. It is recommended to attach to the opposite ends of the battery pack.



Step 18: Once connected at the battery, reconnect the main harness to the solar panel on top.

Step 19: Install WARNING decal where it can be seen when servicing the batteries.

Step 20: Install LED Light Logic decal where it can be seen when looking at the LED lights on the controller.



Left LED	Status
Off	Solar voltage too low
On	Solar voltage good
Slow Flash	System is charging
Double Flash	Batteries fully charged
Fast Flash	Fault: over current or temperature

Right LED	Status
Off	Battery not connected
On	Working correctly
Fast Flash	Battery discharged



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Replacement Part 800-64

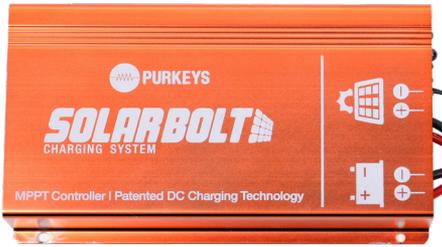
For additional assistance, contact technical support at 479-419-4800.

TRACTOR/TRUCK SOLAR INSTALLATION GUIDE

LED LOGIC

Verify operation of the system by viewing the LED lights. Both lights should be solid and not flashing.

Check the battery voltage. It should be increasing so that the voltage is higher than it was before the Solar Bolt was connected.



LED	Status	Function
Left Red LED Solar Indicator	Off	Solar voltage too low
	On	Solar panel voltage good
	Slow flash	System is charging
	Double flash	Batteries fully charged
	Fast flash	Fault over temp or current
Right Red LED Battery Indicator	Off	Battery not connected
	On	Working correctly
	Fast flash	Battery discharged

Note: for additional assistance please contact our technical support at 479-419-4800.

NOTES

TRACTOR/TRUCK SOLAR INSTALLATION GUIDE

NOTES

LIMITED COMMERCIAL WARRANTY POLICY

MCE Purkeys FE, LLC (hereafter “Purkeys”), warrants each product to be free of defects in material or workmanship under normal use and service. This warranty is for the benefit of Original Equipment Manufacturers, Dealers, Warehouse Distributors, Fleets, or other End Users (hereafter “Customers”) and covers products manufactured by Purkeys and sold new to Customers either directly by Purkeys or by its authorized dealers, distributors, or agents. The length of the Warranty Period is 36 months.

The warranty period commences on the in-service or install date and is not transferable. Failure to provide the in-service or install date on the warranty claim form will cause the warranty period to begin on the date the part was manufactured, or date of sale recorded on the original sales invoice, whichever is earlier.

A completed warranty claim form should accompany all parts submitted to Purkeys for consideration for repair or replacement under warranty. The submitted claim form should contain all of the information required. Lack of a properly or fully completed claim form will result in delay or denial of warranty claim. Claims must be submitted no later than 30 days after part is removed.

This warranty does not apply if, in sole judgement of Purkeys, the product has been damaged or subjected to accident, faulty repair, improper adjustment, improper installation or wiring, neglect, misuse, or alteration or if the product failure is caused by defects in peripheral vehicle components or components attached to the Product or failure of a part not manufactured by Purkeys.

This warranty shall not apply if any Purkeys product is used for a purpose for which it is not designed or is in any way altered without the specific prior written consent of Purkeys. ANY product alleged by a Customer to be defective must be inspected by Purkeys as a part of the warranty claims process in order to confirm that the part has failed as a result of a defect in material or workmanship.

Transportation for products and parts submitted to Purkeys for warranty consideration must be prepaid by Customer. Repaired or replaced products and or components will be returned to Customer pre-paid by Customer or “freight collect” to the address provided by Customer in the warranty claim form. No charge will be made for labor or material in effecting such repairs.

The Warranty provided by Purkeys hereunder is specifically limited to repair or replacement of the Product as Purkeys deems most appropriate in its sole discretion. Purkeys neither assumes nor authorizes any other person to assume on its behalf any other warranty or liabilities in connection with Purkeys products. The Warranty does not apply to fuses or other “consumable” or maintenance items which are or may be a part of any Purkeys product.

THIS WARRANTY DOES NOT APPLY TO LOSS OF VEHICLE OR EQUIPMENT, LOSS OF TIME, INCONVENIENCE, OR OTHER INCIDENTAL OR CONSEQUENTIAL DAMAGES. PURKEYS SPECIFICALLY DISCLAIMS AND SHALL NOT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES arising out of or from the use of Purkeys products by the Customer.

THIS LIMITED WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, INCLUDING COMMON LAW WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE, MERCHANTABILITY, AND ANY OTHER EXPRESS OR IMPLIED WARRANTIES. ALL OTHER SUCH WARRANTIES ARE SPECIFICALLY DISCLAIMED.

This Limited Commercial Warranty supersedes all previous Warranty Policies issued by Purkeys and any of its suppliers.

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WATT Keeps You Trucking