

# PURKEYS

A MISSION CRITICAL ELECTRONICS BRAND

## DIRECT FLEX/MAX

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## DIAGNOSTIC GUIDE



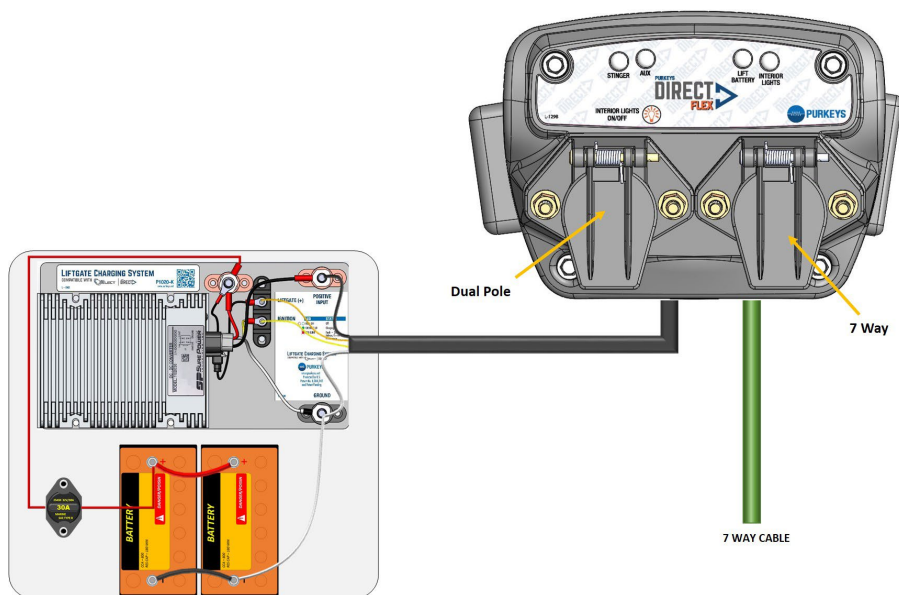


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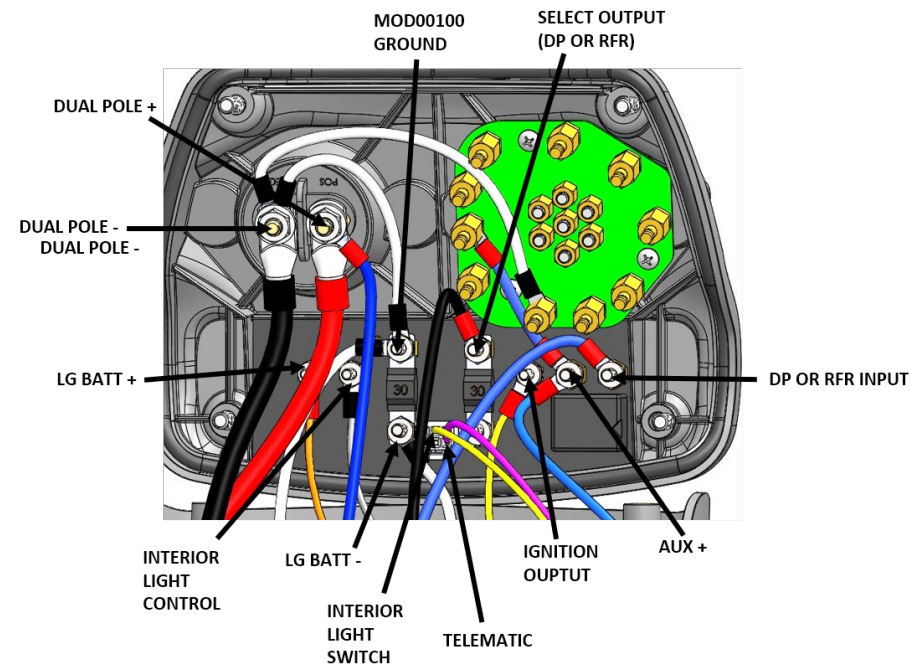
## DIRECT FLEX (NO SEVERE SERVICE CABLES)



DIRECT MAX  
(INCLUDES SEVERE SERVICE CABLES)

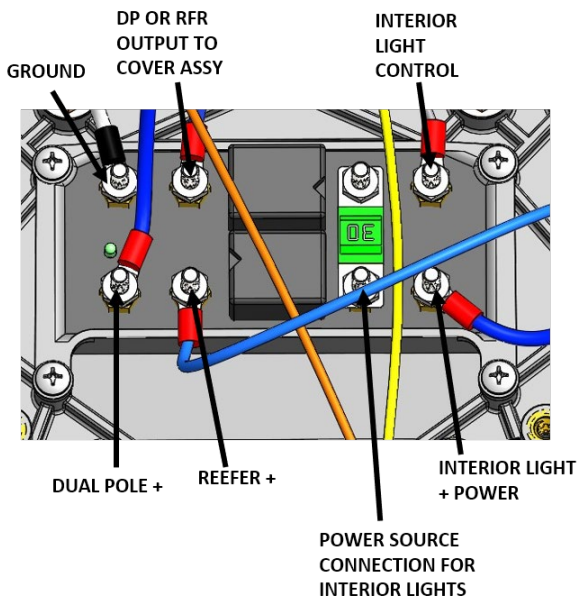


# COVER ASSEMBLY

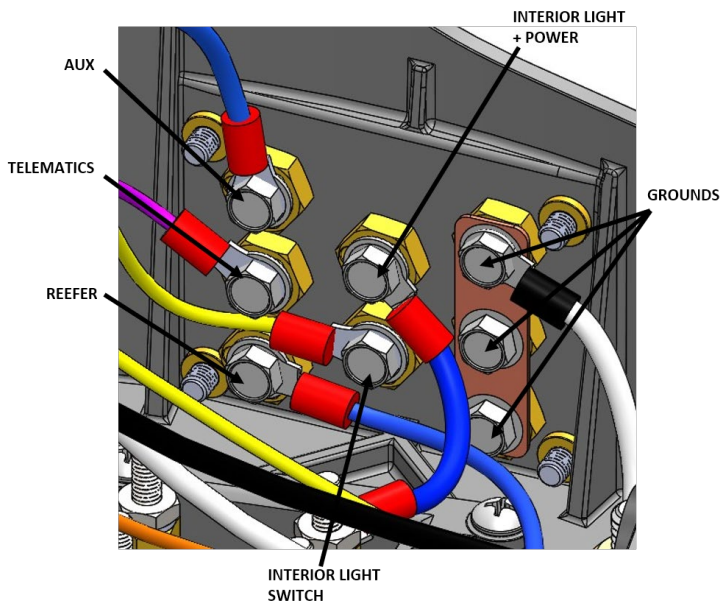


# FLEX/MAX DIAGNOSTIC GUIDE

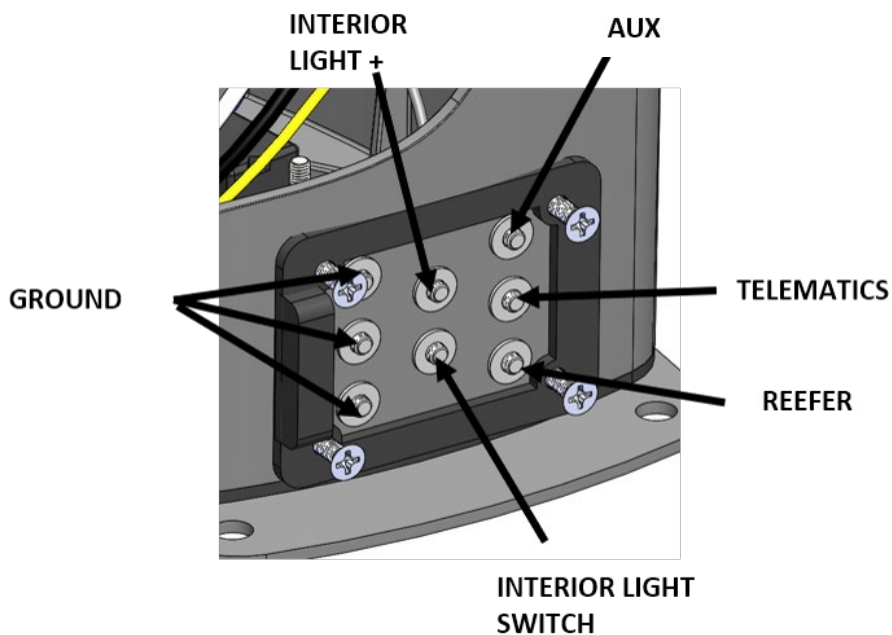
## INTERIOR LIGHT MODULE (OPTIONAL)



## CONNECTIONS INSIDE NOSEBOX



## CONNECTIONS OUTSIDE NOSEBOX





# FLEX/MAX DIAGNOSTIC GUIDE

## BASIC TROUBLESHOOTING

### NO LIGHTS ON FACE OF THE NOSEBOX

Step 1: Confirm all connections are tight and inspect wiring for defects.

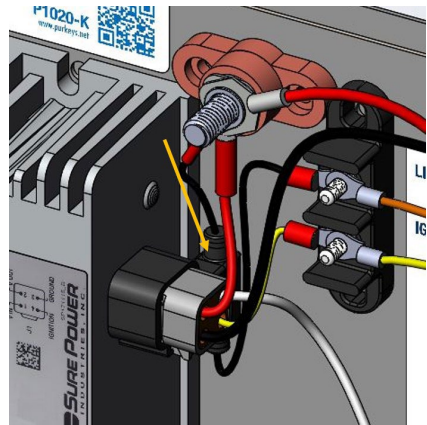
Step 2: Connect the tractor to the unit.

Step 3: Start the tractor.

NOTE: Battery voltage below 7 volts will NOT power the system.

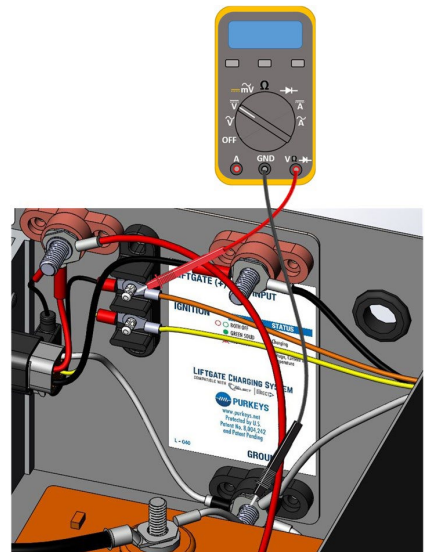
Step 4: Check the 2 amp fuse on the DC/DC converter in the battery box:

- If blown, replace.
- If good, proceed.



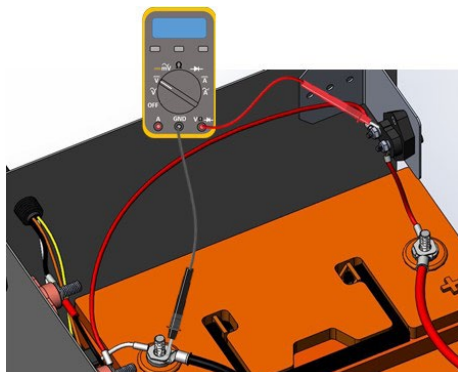
Step 5: Using a voltmeter, measure the voltage at the 2-pin terminal strip on the DC/DC converter charging plate:

- Place the positive lead on the liftgate battery+ stud.
- Place the negative lead on the ground stud.
- If there is a battery voltage reading, skip to step 7.
- If no voltage is shown, proceed to step 6.



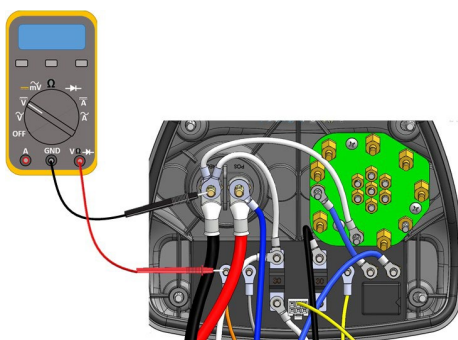
Step 6: Check the 30 amp circuit breaker using a voltmeter:

- Place the positive lead on the circuit breaker stud that connects to the red junction stud closest to the DC/DC converter on the plate.
- Place the negative lead on the negative post of the battery.
- If there is a battery voltage reading, proceed to the next step.
- If no voltage is shown, reset the circuit breaker.
- If there is still no voltage, check wiring for defects.
- If no defects are found, replace the circuit breaker.



Step 7: On the front of the trailer, remove the hardware holding the cover assembly to the nosebox base.

- Place the voltmeter positive lead where the orange wire is connected.
- Place the negative lead where the white wire is connected.
- Check the battery voltage reading.
- If there is a battery voltage reading, replace the faceplate assembly.
- If there is no voltage reading, inspect the wiring for defects and repair any issues.

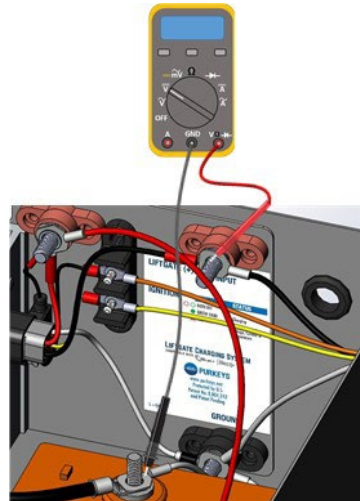


# FLEX/MAX DIAGNOSTIC GUIDE

## BATTERIES NOT BEING CHARGED

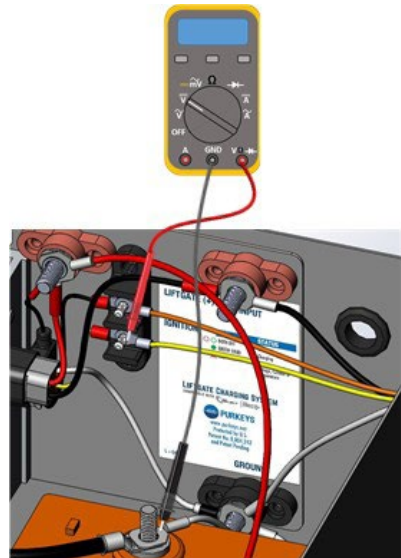
Step 1: Connect the 7-way or dual pole cable to the trailer and start the tractor.

- Place the voltmeter positive lead on the stud labeled as positive input.
- Place the negative lead on the negative battery post.
- Read the approximate tractor voltage.
- If there is a voltage reading, proceed to the next step.
- If there is no voltage reading, skip to step 8.



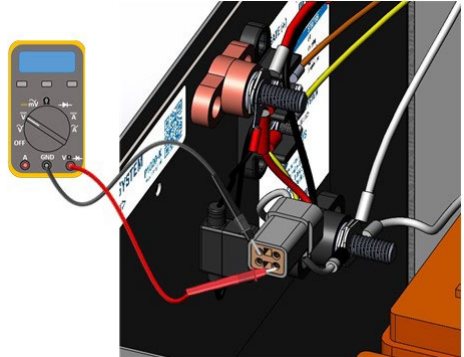
Step 2: Next:

- Place the voltmeter positive lead on the stud labeled ignition.
- Place the negative lead on the negative battery post.
- Battery voltage should read a minimum of 10 volts.
- If there is a voltage reading, proceed to the next step.
- If there is no voltage reading, skip to step 10.



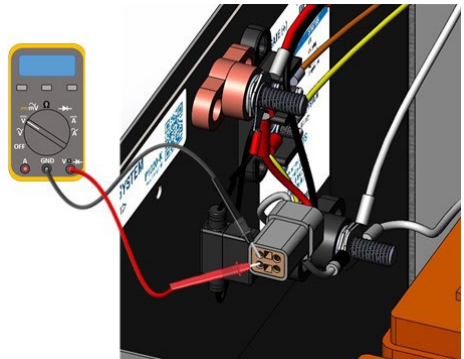
Step 3: Unplug the 4-pin connector from the DC/DC converter.

- Place the voltmeter positive lead in pin #1 (12 v + input).
- Place the negative lead in pin #3 (ground).
- Read the approximate tractor voltage.
- If there is a voltage reading, proceed to the next step.
- If there is no voltage reading, inspect the wiring and plug and repair any issues.



Step 4: Next:

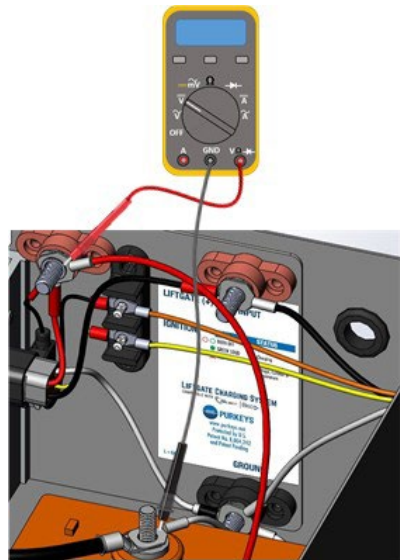
- Place the voltmeter negative lead in pin #3 (ground).
- Place the positive lead in pin #4 (ignition).
- The voltage reading should be greater than 10 volts.
- If the voltage is greater than 10 volts, proceed to the next step.
- If the voltage is not greater than 10 volts, inspect the wiring and plug and repair any issues.



# FLEX/MAX DIAGNOSTIC GUIDE

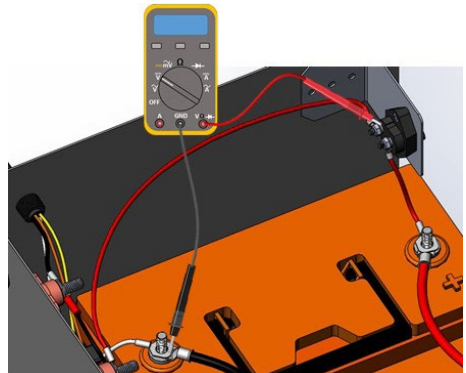
Step 5: Next:

- Place the voltmeter negative lead on the negative battery post.
- Place the positive lead on the red junction stud closest to the converter.
- The voltage should read 13+ volts.
- If voltage reads 13+, proceed to the next step.
- If voltage does not read 13+, replace the wiring from the converter to the converter plug.



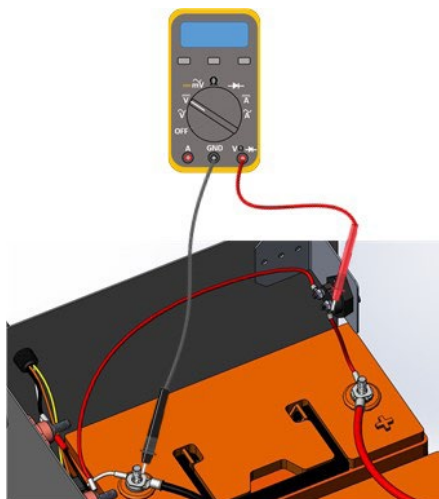
Step 6: Next:

- Place the voltmeter negative lead on the negative battery post.
- Place the positive lead on the circuit breaker post away from the battery.
- The voltage should read 13+ volts.
- If the voltage reads 13+, proceed to the next step.
- If the voltage does not read 13+, inspect the wiring between the junction stud and the circuit breaker and repair any issues.



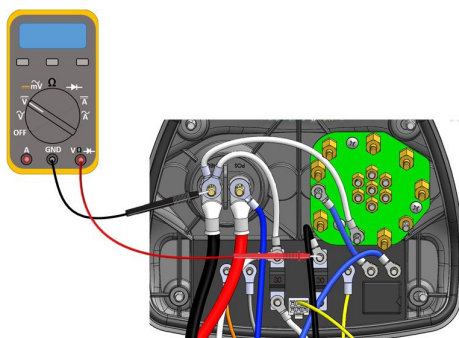
### Step 7: Next:

- Place the voltmeter negative lead on the negative battery post.
- Place the positive lead on the circuit breaker closest to the battery post.
- The voltage should read 13+ volts.
- If the voltage reads 13+, reset the circuit breaker.
- If the voltage does not read 13+, the circuit breaker will not reset. Replace the circuit breaker.



### Step 8: On the front of the trailer, remove the hardware holding the cover assembly to the nosebox base.

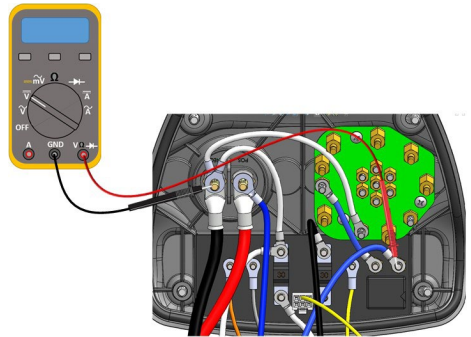
- Place the voltmeter positive lead where the black wire is connected.
- Place the negative lead where the white wire is connected.
- If there is a voltage reading, inspect the wiring between the battery box and the cover assembly.
- If there is no voltage reading, check the 30 amp fuse and replace if blown.



# FLEX/MAX DIAGNOSTIC GUIDE

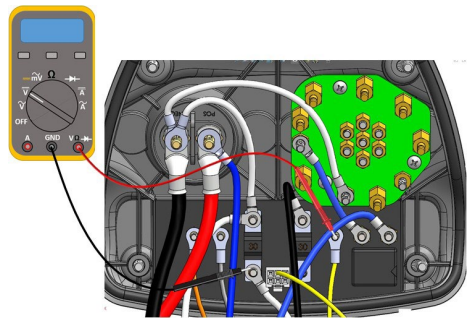
Step 9: Check the dual pole:

- Place the voltmeter positive lead where the blue wire is connected.
- Place the negative lead where the white wire is connected.
- The voltage must be 13.2+ volts (13.8 volts is optimal).
- If the voltage is 13.2+, inspect the wire for defects and replace if necessary.
- If there is no voltage reading, skip to step 11.



Step 10: Next:

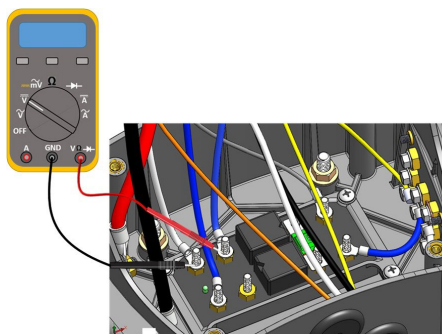
- Place the voltmeter positive lead where the yellow wire is connected.
- Place the negative lead on ground.
- The voltage reading should be greater than 10 volts.
- If the voltage is greater than 10 volts, proceed to step 11.
- If the voltage is less than 10 volts:
  - Confirm the source voltage is above 13.4 volts.
  - If yes, proceed to step 11.
  - If no, replace the cover assembly.





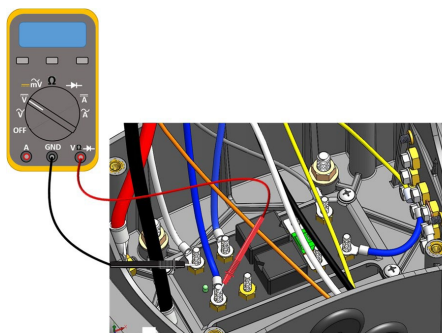
### Step 11: Next:

- Place the voltmeter positive lead where the blue wire is connected.
- Place the negative lead where the white wire is connected.
- If there is a voltage reading, inspect the wiring for defects and replace if necessary.
- If there is no voltage reading, proceed to the next step.



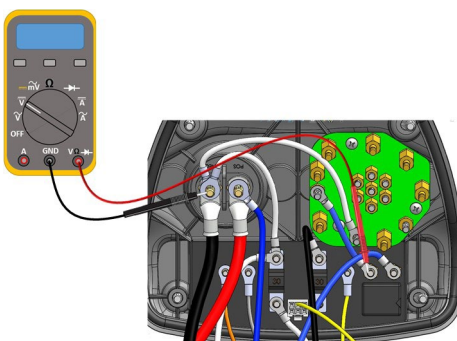
### Step 12: Next:

- Place the voltmeter positive lead where the blue wire is connected.
- Place the negative lead where the white wire is connected.
- If there is a voltage reading, replace the module assembly.
- If there is no voltage reading, inspect the wiring, connections, dual pole connections, and cables. Replace if necessary.



### Step 13: Check the 7-way:

- Place the voltmeter positive lead where the blue wire is connected.
- Place the negative lead where the white wire is connected.
- If there is no voltage reading, inspect the wiring, connections, 7-way connections, and cable. Replace if necessary.





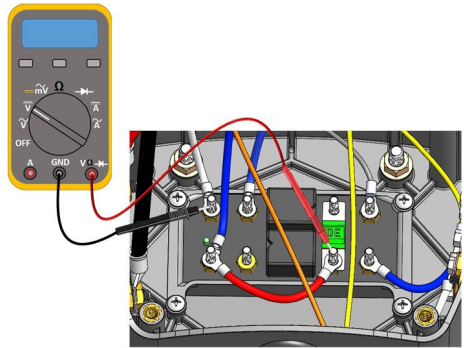
# FLEX/MAX DIAGNOSTIC GUIDE

## INTERIOR LIGHTS NOT WORKING (IF INSTALLED)

The interior lights can be powered by liftgate batteries, dual pole, 7-way, reefer, etc.

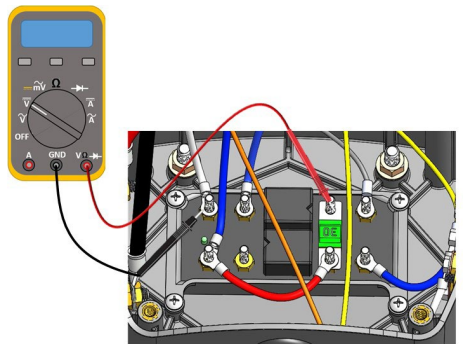
Step 1: Check for voltage at the interior light module:

- Place the voltmeter positive lead on the blue wire.
- Place the negative lead on the white wire.
- There should be a power source voltage reading after closing the interior light switch.
- If there is a voltage reading, inspect the wiring between the power source and the module. Replace if necessary.
- If there is no voltage reading, proceed to the next step.



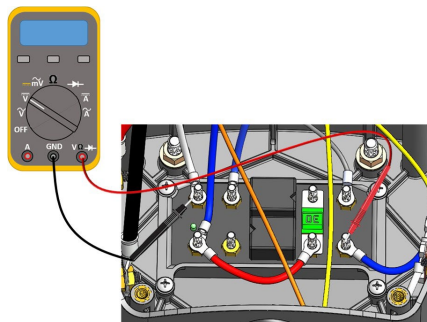
Step 2: Next:

- Place the voltmeter positive lead on the 30 amp fuse on the module.
- Place the negative lead on the white wire.
- If there is a voltage reading, proceed to the next step.
- If there is no voltage reading, inspect the wiring between the source and check the fuse for continuity. Replace if necessary.



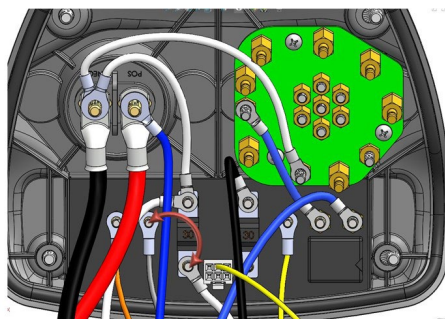
### Step 3: Next:

- Place the voltmeter positive lead on the 30 amp fuse on the module.
- Place the negative lead on the gray wire stud on the cover assembly.
- The voltage should read 0 or a very low voltage.
- Press the interior light switch.
- The voltage should read 10-14 volts.
- If the voltage still reads 0 volts, check for a blown fuse.
- If the fuse checks good, the module is deemed defective. Proceed to the next step to confirm.



### Step 4: To confirm the issue is the module and not the switch on the cover assembly:

- Using a jumper, jump between the light control stud on the cover assembly and the liftgate negative battery.
- If the interior light module is good, the interior lights should come on while the jumper is in place.
- Remove the jumper and the interior lights will shut off.
- If the interior lights do not come on, replace the module.



# **FLEX/MAX DIAGNOSTIC GUIDE**

## **LIMITED COMMERCIAL WARRANTY POLICY**

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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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