

LED Indicator Status	Instructions
<ul style="list-style-type: none"> ● Both LED Indicators are OFF 	<ol style="list-style-type: none"> 1. Test vehicle outside during the day. Do not check indoors at the shop. 2. Disconnect Solar Panel from Charge Controller 3. Disconnect Charge Controller from Battery 4. Check voltage from Solar Panel at the Home Run Cable <ul style="list-style-type: none"> • <u>Voltage greater than 20V</u>: Solar Panel is working fine. Issue with Charge Controller or Battery • <u>Voltage lower than 20V</u>: Check voltage on the Solar Panel directly: • <u>If Voltage is greater than 20V</u>, replace home run cable and retest voltage. • <u>If Voltage is lower than 20V</u>, contact Merlin Solar for additional testing 5. Check battery voltage under no load, if Voltage is lower than 12V replace battery. <ul style="list-style-type: none"> • If battery voltage is higher than 12V and Solar Panel Voltage is higher than 20V = Defective Charge Controller, replace charge controller. 6. Once Charge controller has been replaced, ensure both LED lights are green. If so, system resolved and normal.
<ul style="list-style-type: none"> ● PV LED Indicator GREEN ● Batt LED Indicators OFF 	<ol style="list-style-type: none"> 1. Battery voltage is below 8.5V (Internal assumption of the Charge Controller) 2. Check Fuse in the Controller Batt + Cable 3. Test and replace battery 4. If replacing the battery does not provide a Green LED light, replace charge controller and re-test.
<ul style="list-style-type: none"> ● PV LED Indicator OFF ● Batt LED Indicators GREEN 	<ol style="list-style-type: none"> 1. Test vehicle outside during the day 2. Disconnect Solar Panel from Charge Controller 3. Disconnect Charge Controller from Battery 4. Check voltage from Solar Panel at the Home Run Cable <ul style="list-style-type: none"> • <u>Voltage greater than 20V</u>: Solar Panel is working fine. Issue with Charge Controller or Battery • <u>Voltage lower than 20V</u>: Check voltage on the Solar Panel directly: • <u>If Voltage is greater than 20V</u>, replace home run cable and retest voltage. • <u>If Voltage is lower than 20V</u>, contact Merlin Solar for additional testing
<ul style="list-style-type: none"> ● PV LED Indicator GREEN ● Batt LED Indicator ORANGE 	<ol style="list-style-type: none"> 1. Test vehicle outside during the day 2. Check 20 Amp Fuse in the controller BATT + Cable 3. Disconnect Solar Panel from Charge Controller 4. Disconnect Charge Controller from Battery 5. Check battery voltage under no load, if Voltage is lower than 12V replace battery and retest. <ul style="list-style-type: none"> • If battery voltage is higher than 12V and Solar Panel Voltage is higher than 20V = Defective Charge Controller, replace charge controller. 6. Once Charge controller has been replaced, ensure both LED lights are green. If so, system resolved and normal.
<ul style="list-style-type: none"> ● PV LED Indicator GREEN ● Batt LED Indicators RED 	<ol style="list-style-type: none"> 1. Temperature in the controller and battery is too high, above 122°F. <ul style="list-style-type: none"> • Controller automatically Turns the system off • When temperature declines, system will turn automatically back on. 2. Disconnect System and allow to cool for 30 minutes 3. Check Fuse in the Controller Batt + Cable 4. Replace if necessary 5. Reconnect System and retest. 6. <u>If battery voltage is higher than 12V and Solar Panel Voltage is higher than 20V: Defective Charge Controller, replace charge controller.</u> 7. Once Charge controller has been replaced, ensure both LED lights are green. If so, system resolved and normal.

Legend

- blue: Temperature sensor
- green: Charge controller to panel connection
- purple: Fuse
- yellow: Charge controller to battery connection
- orange: Panel to home run cable connection

