

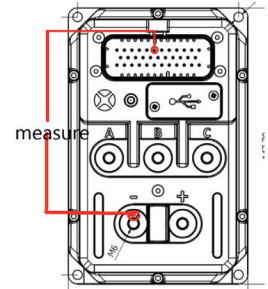
Cake Kalk Inoperable Dashboard Issue

Work-around Solution

This is a guide for how I solved my bike's controller and dashboard problem. Use at your own risk.

Condition

If your bike's controller isn't operating as normal, and in addition the bike might only operate in a limp mode or be non-responsive, it is typically only a couple of causes. To troubleshoot the culprit, see the troubleshooting guide in community guides within the Cake Riders Wiki. In particular, look at the section that details how to test the SL Controller for continuity across GND. Perform the test. If the result is that there is no continuity across -Batt and #6 pin on the controller then this guide provides a solution for the symptom to get the bike running, but not necessarily does it solve the main problem.



Symptom

A possible consequence of a bad battery BMS, or simply a surge of power through the SL Controller, is that a non user-serviceable GND fuse blows within the controller.

This fuse is outbound GND so it doesn't protect the controller, it is there presumably to protect downstream components on the bike.

Note that because this fuse is outbound, the controller doesn't recognize when it is blown and continues to work. However the bike itself relies on GND and so a few systems won't work including the dashboard, so the controller needs to be either repaired at Silixcon or a work-around performed.

Solution

A work-around that solves the inoperable bike and dashboard issue is to by-pass the controller with a GND wire with an in-line 1amp fuse, connecting from -Batt at the controller to the Pin#6 wire in the controller harness.

This will provide GND to the bike where it needs it and get the bike running. It does not however solve what might have caused the fuse within the controller to blow which could be a few causes. Possibilities I've learned such as a bad battery BMS, shorting/crossed wiring, or a surge from fast and spirited riding while in regenerative mode.

Tools

- Cake Allan keys
- wire stripper
- soldering kit
- high temp electrical tape
- wiring heat shrink tubes

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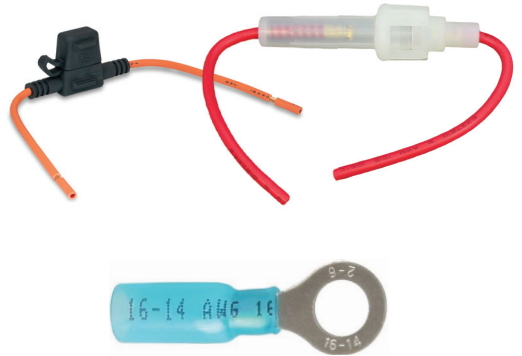
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Work-around Solution

Purchase

- inline waterproof fuse wire with glass fuse or mini-fuse
- wiring end ring connector with heat shrink (similar to the loop ends on the battery wiring at the controller)
- 1amp fuse

Note: glass fuses might be more prevalent in 1amp for you as I found the 1amp mini-fuse to be rare at local automotive shops.



Steps

Step 1 - prep and measure

- remove the battery and allow the bike to sit and discharge for a few minutes
- remove the bike's side covers
- unscrew the controller and pull outward while still connected to allow you to easily work on it
- decide if you want the by-pass wire and fuse to be tucked into the controller box, or peaking out of the left side motor bay like I've done. Depending on your decision, measure the length of run of wiring you need

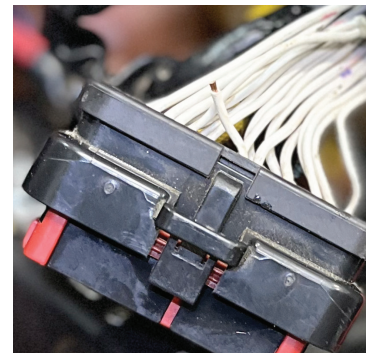
Step 2 - prep the wire

- solder or attach the ring connector to the -Batt end of your new fuse wire
- in my case this side of the wire needed to be lengthened so I added approximately 4" and soldered the joint and protected with shrink tube
- for the other end of the fuse wire, strip approx. 15mm and dip in flux



Step 3 - prep the #6pin wire

- unplug the wiring harness from the controller
- you may benefit from peeling off the tape that wraps the white harness wiring to release more slack on those white wires
- once freed, review the pin chart from the previous guide and identify pin/hole #6 on the receiving half of the harness and then clearly mark its wire with marker
- you don't want to cut the wrong wire so double check
- once identified and marked, snip that wire at a location that leaves enough length remaining on the harness connector for a future reversal/repair and yet enough on the outbound end that you can strip 15mm and work with it as this side of the wire is where you will connect your new fuse wire
- once snipped, strip the white #6 wire and apply flux



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Work-around Solution

Steps

Step 4 – solder and connect

- connect and solder the end of the fuse wire to to the white #6 (don't forget your shrink tube)
- apply the shrink to protect from water
- also shrink cover the snipped short leftover end protruding from the harness
- connect the ring end of the fuse wire to the blue -Batt post on the controller along with the existing that is connected
- install a 1amp fuse into the receptacle

Step 5 - test

- with the wiring done, fit the (good) battery back into the bike and connect
- power on the bike
- hopefully everything powers and lights up as normal

Step 6 - close it up

- if it all worked, then shut the bike down and remove the battery, wait a few minutes
- now tuck the new fuse inside the controller box and through the hole at the rear so that it is accessible from the left side motor cover
- tape up the harness as you found it using electrical tape (I'm guessing this is a high temp environment so it is likely protective)
- tuck the controller back into and close up
- done

Summary

In summary, this is a work-around, not a solution to the cause. It might be that the original fuse was just weak, or the BMS was the cause and if you've upgraded the battery BMS there should not be any future issues.

However it might not be the case and we experience this fuse blowing frequently during load on the trail or road. But at least this gets you going and checks off one thing in the problem solving.

