

## Overview

The XCT/NCT family of controllers uses MOSFETs to control the output of the armature and field circuits. When a controller stops working there is an easy check that can be performed to determine if it is the high power circuits of the armature and/or field. Using a multi-meter on the diode setting, it is possible to quickly identify the problem circuit.



## Tools required:

- Multi-meter with a diode setting

## Test

In order for this test to work properly, the controller must be disconnected from the vehicle. Let the controller sit for 5 minutes before doing the tests. The capacitors store a lot of energy and must discharge to ensure safety and valid test readings.



**WARNING:** Allow 5 minutes for the capacitors to discharge before performing diode checks. Failure to do so could result in injury. Use voltmeter to verify 0V across B+/B- before proceeding

Note: The reading of a diode will be expressed in volts. Typically, it is pretty clear cut if there is a bad diode in the system.

Good readings will be about 0.5V on the meter.

There are two possible bad readings. A shorted diode will read about 0.0V. An open diode will slowly climb above 1V.

## Procedure:

Use a meter to check the following points. RECORD the results and send to the Alltrax Customer Service representative for analysis.

1. Set digital meter to "DIODE MODE"
2. Place Red (+) probe on B- connection and the Black (-) on the M- (J9).



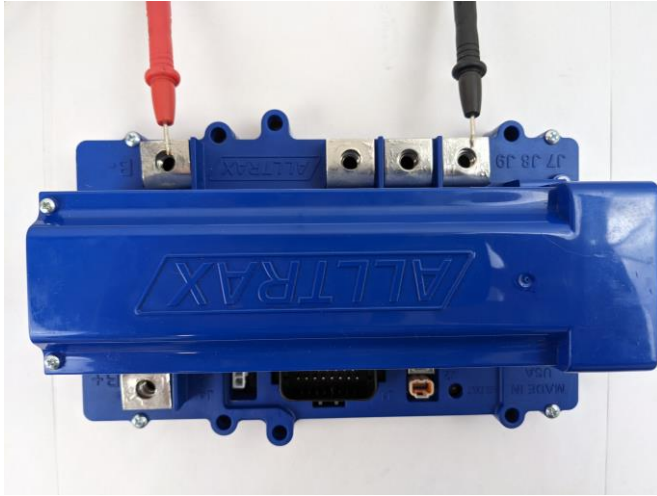
Meter should be reading 0.5V ± 0.2V

3. Place the Red (+) probe on the M- (J9) and the Black (-) probe on the B+.



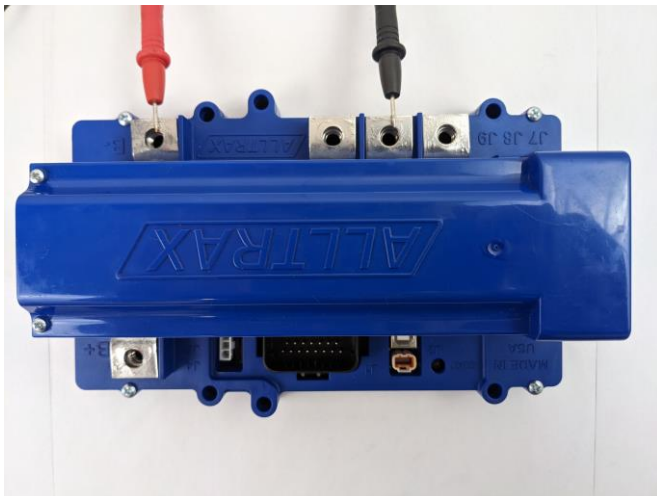
Meter should be reading 0.5V ± 0.2V

- Place the Red (+) probe on the B- and the Black (-) probe on the F1 (J7).



Meter should be reading  $0.5V \pm 0.2V$

- Place the Red (+) probe on the B- and the Black (-) probe on the F2 (J8)



Meter should be reading  $0.5V \pm 0.2V$

## Conclusion

If a controller fails any of the above tests, contact Alltrax or the Authorized Dealer from where the controller was purchased.

### **ALLTRAX Inc., Company History:**

The company founder developed our core technology at the race track for high power electric vehicles. Throughout the 90's, the market demanded robust and high performance electronic controllers. In 2001 ALLTRAX was formed based on the E-race car developed technology.

Today, Power Conversion Engineering (PCE) is the research and development arm and ALLTRAX provides the industry a powerful and robust controller to meet all your recreational, industrial, and commercial electrical vehicle needs.

For more information please go to <http://www.alltraxinc.com>



*"The company was founded at the track"*