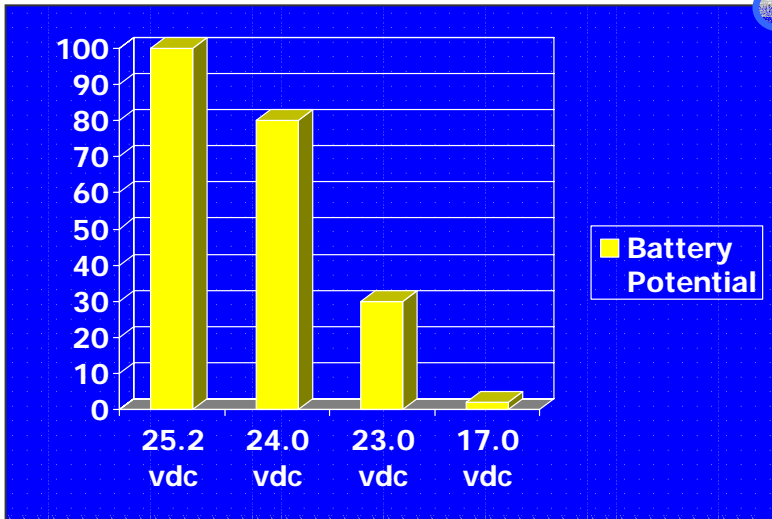




SCOOTER CONTROLLER FAULT CODES

Flash Code	Fault Description	Actions
1	Battery Needs Recharging	The battery voltage has dropped below 23.3V in neutral. Recharge the batteries soon.



Remember Our Graph?

At 23.3 vdc, you are not "a little bit low". You are nearly EMPTY!

A Scooter giving a Flash Code #1 will not be traveling much further.

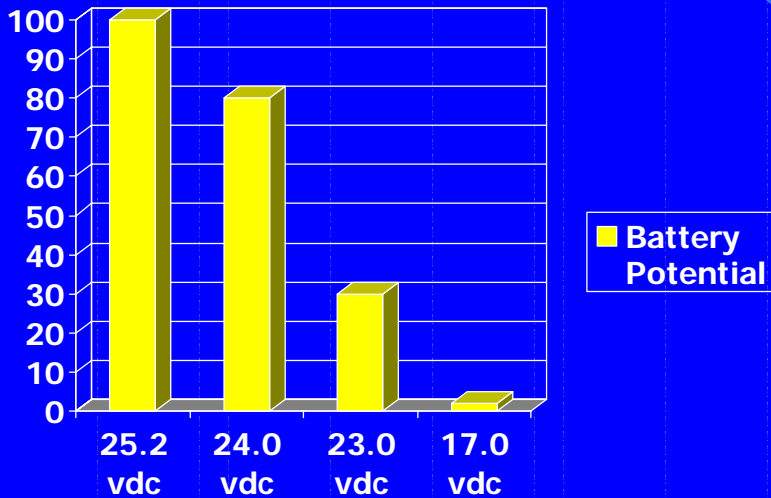


SCOOTER CONTROLLER FAULT CODES

2

Battery Voltage Too Low

The battery voltage has dropped to 16.5 vdc.
Check the condition of the battery connections .



Again, The Graph...

At 16.5 vdc, the Scooter can no longer function.

An Intermittent Code #2 could point to a loose or corroded connection.



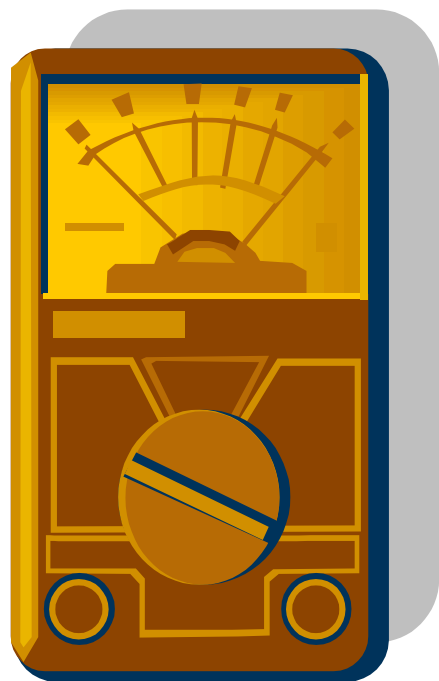
We Reinvented The Wheel



SCOOTER CONTROLLER FAULT CODES

3 Battery Voltage Too High

The battery voltage is greater than 32V. Check the battery condition and the connections. Suspect a charger malfunction. For a temporary solution, turn on the lighting system for a while in order to lower the battery voltage.



- The best thing to do in this case is to PROVE or RULE OUT the Charger as being the cause. Do this by measuring the VOLTAGE being delivered AT the Battery, while the Charger is connected and ON.
- Some models of CTM Scooters feature “Regenerative Braking”, which allows the motor to act as a generator during coasting or while driving downhill. If this is the case, instruct the user to set the Speed Pot to a SLOWER position before an extended downhill run to minimize this ‘overcharge’ condition.



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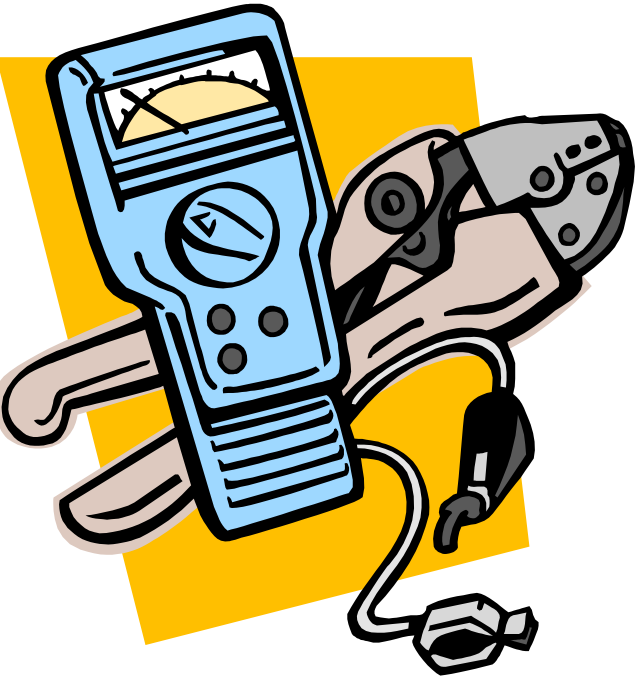


SCOOTER CONTROLLER FAULT CODES

4

Current Limit Time Out

The controller has detected a shorted motor. Check the high current electrical harness for shorts and check the motor. See your authorized dealer.



- The most likely fault condition here is a Broken, Abraded or Pulled Wire, somewhere in the High Current Harness. You may want to inspect the wiring visually to see if there is anything obviously shorting to ground.
- In some cases a severely worn or broken Carbon Motor Brush can cause the same fault.
- Further diagnosis may require additional tools and training. Please contact a CTM Certified Technician for Assistance.



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SCOOTER CONTROLLER FAULT CODES

5 Free Wheeling Lever Fault

Check the Free Wheel Lever connections, the condition of the motor and harness(es). See your authorized dealer.

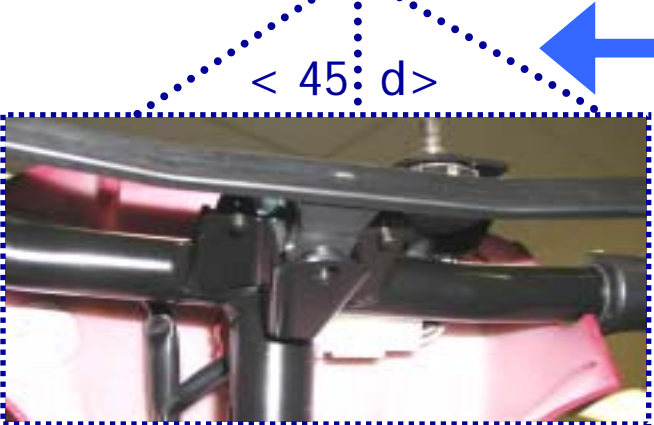


- The most likely fault condition here is that someone failed to return the “Freewheel Lever” to the ‘D’ position. Or that the lever became disengaged to the ‘N’ position by some other means.
- The wiring may be chafed or broken.
- Further diagnosis will require removal and dismantling of the motor. Additional tools and training will also be needed. Please contact a CTM Certified Technician for Assistance.



SCOOTER CONTROLLER FAULT CODES

6	Throttle Lever Out Of Neutral	<p>Cycle the Throttle Lever back and forth with the KEY OFF. Allow the Throttle Lever to center itself back to neutral. Turn the Key ON and see if code has cleared.</p> <p>See your authorized dealer to readjust the wigwag zero point calibration if necessary.</p>
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- Sometimes a sticky or worn throttle pot can be loosened up, if only temporarily by racking the throttle back and forth to full deflection several times.
- A person who rests heavy hand pressure downward on the throttle while driving will make it worse.



SCOOTER CONTROLLER FAULT CODES

6

**Throttle Lever
Out Of Neutral**

****SPECIAL****

• The following data is intended to be used ONLY by those who have been adequately trained by CTM!

• Throttle Pot is a 45 degree active sweep from 0–5k Ohms.

• Wiper “Zero Point” for NEUTRAL is 2.50 k Ohms, +/- 0.05 k Ohms Max Dev.





We Reinvented The Wheel

GLOSSARY OF TERMS

BATTERY	Cells arranged under the seat for storing electricity
BRAKE	Electro-Mechanical Friction Plate which locks the motor upon throttle release, to prevent roll-away.
CARBON BRUSH	A spring loaded, solid conductive block that delivers DC current to a rotating armature inside the motor.
CHARGER	Device used for refilling battery with electricity.
CONTROLLER	The 'brains' of the scooter. Regulates power coming in from battery and out to motor (s).
KEY SWITCH	Master switch for turning vehicle ON and OFF.
MOTOR	Converts electricity into rotating power to drive the vehicle wheels via a gear set.
THROTTLE	Input lever to regulate Forward and Reverse speed.
TRANSAXLE	A gear set to modify motor output into a slower speed and higher torque to the drive wheels.