

# GROUNDMASTER 360 DIAGNOSTIC FAULT CODE QUICK REFERENCE TABLE



Fault Number	Fault Title	Controller Affected	Fault Description/ Technical Description	Additional Notes	Service Actions
11	Engine Coolant High Temperature Warning	Master	This fault is reported when engine coolant temperature has reached 105 °C (220 °F).	PTO will be disabled	1) Check engine cooling fan. 2) Check radiator airflow passages. 3) Check coolant level.
12	Engine Coolant High Temperature Shutdown	Master	This fault is reported when engine coolant temperature has reached 115 °C (240 °F).	Engine will be turned off	1) Check engine cooling fan. 2) Check radiator airflow passages. 3) Check coolant level.
13	Engine Oil Pressure Low	Master	This fault is reported when engine oil pressure is below the minimum psi level.	Engine will be turned off	1) Check oil pressure. 2) Check oil level.
14	Alternator Fault	Master	This fault is reported when the alternator is not currently charging the battery system.		1) Test the alternator charging function. 2) Check alternator wiring and all related connectors. 3) Check alternator belt.
15	Master Board Internal Error	Master/ Accessory	This fault is reported when an internal TEC failure occurs.		1) Replace the Master TEC controller.
16	Master Board Internal Error - IPE/Invalid Inputs	Master	This fault is reported when inputs or outputs on the master TEC are not working correctly. An internal TEC failure has occurred.		1) Replace the Master TEC controller.
21	Output Fuse A Fault	Master	This fault is reported when a fuse is blown on one of the output circuits on the master TEC.		1) Check 7.5 amp fuse protecting outputs 1–4 on master TEC.
22	Output Fuse B Fault	Master	This fault is reported when a fuse is blown on one of the output circuits on the master TEC.		1) Check 7.5 amp fuse protecting outputs 5–8 on master TEC.
23	Output Fuse C Fault	Master	This fault is reported when a fuse is blown on one of the output circuits on the master TEC.		1) Check 7.5 amp fuse protecting outputs 9–12 on master TEC.

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<b>24</b>	Main Power Relay Fault	Master	This fault is reported when the main power relay feeding the master TEC has failed.	This fault will also likely generate the Accessory Controller fault (Fault 54) because Master Output 2 powers the logic on the accessory TEC controller.	<ol style="list-style-type: none"> <li>1) Check 7.5 amp fuses first.</li> <li>2) Test the functionality of the main power relay.</li> <li>3) If relay tests ok, check that the master TEC is getting 12 Vdc from the relay.</li> </ol>
<b>31</b>	Start Relay - Current Too High	Master	This fault is reported when current through starter relay is too high.		<ol style="list-style-type: none"> <li>1) Check that the output 1 circuit on the master TEC is not shorted.</li> <li>2) Test the starter relay for proper resistance.</li> <li>3) Replace the Master TEC.</li> </ol>
<b>32</b>	Energize to Run (ETR) - Current Too High	Master	This fault is reported when current in fuel pump circuit is too high.		<ol style="list-style-type: none"> <li>1) Check that the output 2 circuit on the master TEC is not shorted.</li> <li>2) Test both the fuel pump and fuel pump relay for proper resistance.</li> <li>3) Replace the master TEC.</li> </ol>
<b>33</b>	Preheat - Current Too High	Master	This fault is reported when current in the glow plug circuit is too high.		<ol style="list-style-type: none"> <li>1) Check that the output 3 circuit on the master TEC is not shorted.</li> <li>2) Test the component connected to the output for proper resistance.</li> <li>3) Replace TEC</li> </ol>
<b>34</b>	Diag lamp - Current Too High	Master	This fault is reported when current in diagnostic lamp circuit is too high.		<ol style="list-style-type: none"> <li>1) Check the output 4 circuit on the master TEC is not shorted.</li> <li>2) Test the component connected to the output for proper resistance.</li> <li>3) Replace TEC</li> </ol>
<b>35</b>	Mow Clutch - Current Too High	Master	This fault is reported when current in clutch circuit is too high.		<ol style="list-style-type: none"> <li>1) Check the output 5 circuit on the Master TEC is not shorted.</li> <li>2) Test the component connected to the output for proper resistance.</li> <li>3) Replace TEC</li> </ol>
<b>41</b>	4-Wheel Steering Lamp - Current Too High	Master	This fault is reported when current through the steer mode lamp circuit is too high.		<ol style="list-style-type: none"> <li>1) Check that output 6 circuit is not shorted.</li> <li>2) Test the component connected to the output for proper resistance.</li> <li>3) Replace TEC</li> </ol>

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<b>42</b>	D Lift 1 - Current Too High	Master	This fault is reported when current through the deck lift output is too high.		<ol style="list-style-type: none"> <li>1) Check that output 7 circuit is not shorted.</li> <li>2) Test the component connected to the output for proper resistance.</li> <li>3) Replace TEC</li> </ol>
<b>43</b>	D Float 2 - Current Too High	Master	This fault is reported when current through deck float output circuit is too high.		<ol style="list-style-type: none"> <li>1) Check that output 8 circuit is not shorted.</li> <li>2) Test the component connected to the output for proper resistance.</li> <li>3) Replace TEC</li> </ol>
<b>44</b>	4-Wheel Steering Solenoid Valve - Current Too High	Master	This fault is reported when current in the 4-wheel steering output circuit is too high.		<ol style="list-style-type: none"> <li>1) Check that output 9 circuit is not shorted.</li> <li>2) Test the component connected to the output for proper resistance.</li> <li>3) Replace TEC</li> </ol>
<b>54</b>	Communication Bus	Master/ Accessory	This fault is reported when communication has been lost between the accessory TEC and the master TEC.	Connection or TEC may be faulty. Either accessory or master may be at fault.	<ol style="list-style-type: none"> <li>1) Connect Toro DIAG and check for qualifier 1 (reported by the master TEC) or qualifier 40 (reported by the accessory TEC)</li> <li>2) Check CAN connections: For qualifier 1, check the CAN for the accessory TEC. For qualifier 40, check the CAN for the master TEC.</li> <li>3) Verify 12 Vdc power exists at accessory controller.</li> <li>4) Check the resistance of the CAN network.</li> <li>5) Replace TEC controller: (accessory for qualifier 1, master for qualifier 40).</li> </ol>
<b>55</b>	Software Incompatible	Master	This fault is reported when 1 or more of the nodes' firmware is incompatible with the master firmware.		<ol style="list-style-type: none"> <li>1) Update machine firmware using Toro DIAG.</li> </ol>
<b>56</b>	Start Engaged While Running	Master	This fault is reported when the start is engaged while the engine is already running.		<ol style="list-style-type: none"> <li>1) Check key switch to verify that it is not in the start position</li> </ol>

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<b>57</b>	Starter Timeout	Master	This fault is reported when the ignition key has been stuck or held in the Start position for more than 30 seconds.	If the key was held in the Start position for more than 30 seconds, returning key to the run position will clear the fault.	1) Check the key switch for any shorts.
<b>61</b>	Hydraulic Oil PTO Shutoff	Master	This fault is reported when the hydraulic temperature has reached a critical operating level that requires the PTO to be disabled.		1) Test the cooling fan function. 2) Inspect the airflow passages. 3) Check the coolant level.
<b>131</b>	Node Error 131	Master	This is a default error code is reported when high current in the system cannot be associated with any particular output circuit.	May be caused by other faults.	1) Check for output circuits being shorted. 2) Test all component outputs for proper resistance. 3) Replace the master TEC.