

# **ECU®** Trouble Shoot Guide for Engine-Controls

Topics

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**Only qualified Service Technicians  
should perform these Troubleshooting  
Steps!**

# Basic tests to check unit

60 Series have no settings so you can start the following

You must be a fully qualified Electrical Technician with ability to do this test if you have little or no experience, have a **qualified** Electrician or Diesel/Generator Technician perform this test. If you are qualified remember you are working with terminals 11 and 12 which can have lethal voltages.

0. Disconnect 1,8,9,11,12,5,10... Please tape up 11 and 12 during this test
1. Place negative lead of voltmeter on Battery -
2. Place positive lead on terminal 1
3. Push on button(63) or switch to manual(64,67)
4. Observe voltage on 1 about 5 seconds (glow)
5. After step 4 the unit will try to start watch terminal 5 and observe voltage
6. Step 5 voltage on terminal 5 should last about 2 seconds then
7. Unit will show 4 flashes(63,64) or show OS-OC leds on 67 this is correct
8. If steps 1 to 7 did not work call us!
9. If you are here your unit should glow hold and try to crank
10. Now open master switch so unit can reset
11. Reconnect 1,11,12,5
12. Push on button(63) or switch to manual(64,67)
13. Control should wait for glow hold ( slow flash ) and then try to start again
14. If starter is not coming on trace the circuit we know the starter works (step6)
15. If starter turns on then off in 2 seconds you will have to
16. Carefully place voltmeter set to 200VRMS RANGE across 11 and 12 (Careful)
17. Reset unit and try cranking again
18. When engine is cranking check for voltage between 11 and 12
19. If voltage in step 18 is less than <1 volts rms that's a problem
20. If you made it to here put it all back together carefully it should run
21. If you have it back together and it doesn't start be sure fuel is turning on
22. If its turning on be sure you have fuel!

Please call us at 317-849-8470 if you need assistance...

Ask for Tech Service

# False Shutdowns

Do the following to set up for unit test.

1. Remove wires from 8,9. Be cautious this may remove the emergency stop or other critical function. Be prepared to override and stop engine during this check.
2. Put voltage on 6 and check to see that you have 4.5 volts on terminal 8 and terminal 9.
3. If you have 4.5 volts DC on both terminal 4 and 5 then start engine and see if it faults out.
4. If engine runs ok then connect wire 8 and check engine operation again. If ok then go to 5 else check to see if you have a safety or a sender. The unit will only work with a safety switch NOT a sender. Check to be sure you have either an open circuit or a short when the switch closes and opens.
5. Repeat the test with terminal 9.
6. Connect remaining safety switches and check to see if any of them trip unit.
7. Most false trips are due to wiring or safety switch problems. If the unit does not have a problem when the safety switches are disconnected then you must look with great care at the safety switches themselves.
8. The control is designed for high levels of electrical noise to be present and not have a false operation.

Remember to re-adjust and wire your unit after testing.

## Overspeed LED and Overcrank LED on at same time Or your flash code is 4 flashes

Do the following ...

1. Your system is equipped with AC crank sensing safety systems. Two seconds into the crank cycle the AC signal pickup is checked to see if the generator is putting out any voltage. If either case is not true the engine will stop with both the Overcrank and Overspeed LEDs on at the same time (67) or have 4 flash flash code(63,64)
2. These tests help to ensure no starter damage or overspeed damage.
3. Be sure that during cranking you have at least 1 VRMS on terminals 11 and 12. **BE CAREFUL! 120VRMS**
4. If you don't have it or it is very low try checking the wiring.
5. If your wiring is ok and the output is correct you may just have a fuel system problem

Remember to re-adjust and wire your unit after testing.

Oil pressure and Temperature shutdowns if wires are connected to terminals 8 and 9 even if engine is ok

1. Be sure the safety switches are switches and not senders. Make sure no other devices are attached to the wires on terminals 8 and 9.
2. Go to [False Shutdowns](#).

Remember to re-adjust and wire your unit after testing.

## No output on Starter terminal 5

1. You should go to the [Basic tests to check unit](#)
2. Also check the Cranking Problems.
3. If you are still having problems call 317-849-8470  
ask for Tech/Service

Remember to re-adjust and wire your unit after testing.