

Cummins Generator Troubleshooting Procedures

Legend:

AVR: Automatic Voltage Regulator. Regulates the generator's output voltage. Located on the left side of generator under cover.

RFI: Radio Frequency Interrupter. "Cleans up" the voltage signal. Located on the right side of generator under cover.

EBS: Electronic Boost System. Momentarily (5 seconds) boosts the voltage output of the generator when a load is applied. Located on the rear of the generator. It contains its own windings as well as the....

EBC: Electronic Boost Controller. The module that controls the EBS. Located under the cover of the EBS.

Troubleshooting:

Typically, the symptoms the generator has when something is wrong is either residual voltage or high output voltage (180 VAC). The cause is most commonly one of the four peripheral components above being defective. It is extremely rare that the armature or stator windings go bad.

180 VAC Output:

First, disconnect the EBC module from the AVR board. There are four wires, F1, F2, EB and DR on the AVR. Let the wires hang without touching anything and check the voltage output. If the voltage is 120 VAC, then the EBC module is defective because it is keeping the EBS engaged all the time instead of only when a load is applied.

If this test yields residual voltage, then this means that the EBC is good and the RFI board may have a blown fuse or is simply defective. Test the fuses on the RFI. If any of them are blown, replace them with the same type and value of fuse that came out of it. If fuses are fine, bypass the RFI by locating the two leads out of it and following them up to where they plug into the AVR. This will be under the top cover of the generator. They may be hard to see as they are usually stuffed under the buss bars. Unplug the RFI from the AVR leads and connect the two AVR leads together. Start the generator and check the voltage output. You should have 120 VAC at this point. If so, this confirms that the RFI is defective and needs replaced. If you still have residual voltage, the AVR is defective. However, before condemning the AVR, refer to the AVR details page for verification of the placement of the jumper and the resistor wire. Also verify that the resistor is not blown.

Residual Voltage:

Bypass the RFI as described above. Start the generator and check the voltage output again. If the voltage is good, then the RFI is defective and needs replaced. If you still have residual voltage, the AVR is defective and needs replaced.

Additional Notes:

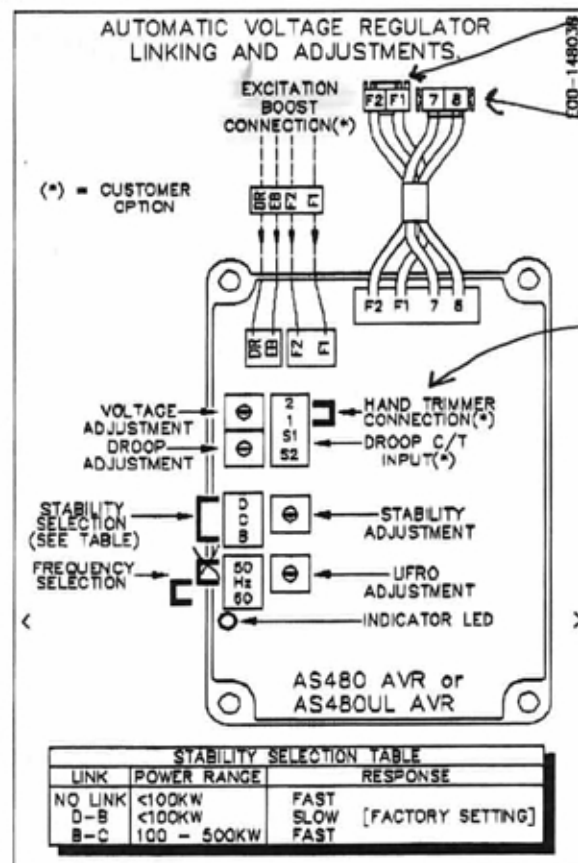
Please refer to additional detailed notes on the AVR and RFI for generator setup when installing a new replacement generator as well as placement of the jumper and resistor wire.

Setting Generator:

- 1) Set Hz to 61 Hz, no load
- 2) Adjust Stability with the potentiometer until voltage is at its most stable point
- 3) Adjust voltage with potentiometer until it is at 120 volts.
- 4) Turn on both FrostFighters and run them until both fans are running. Then adjust the engine RPM until Hz is at 60.5 Hz.

**** AVR IS LOCATED ON FUEL TANK SIDE OF GENERATOR ****

Goes to plug-in that goes down into stator windings (short pig tail)



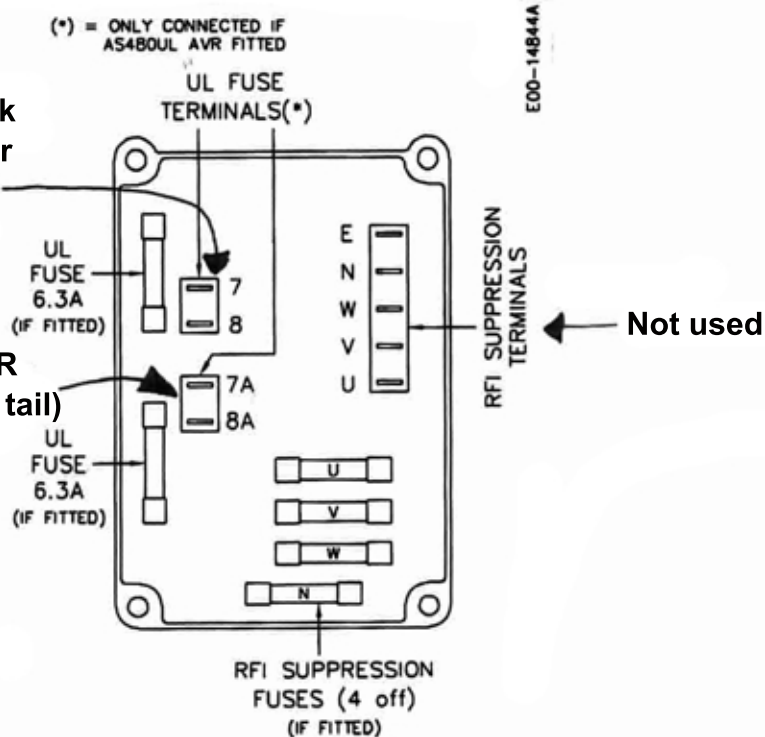
RFI Suppressor (located on door side of generator)

* “Cleans up” voltage signal

* Does not have to be hooked up for generator to work

Goes to the buss block in top box of generator with lead U5T3 going with 7 and lead U2T2 going with 8.

From AVR
(long pig tail)



UL FUSES/RFI SUPPRESSION FUSES
AND TERMINAL IDENTIFICATION