

SUBJECT: Lamar Technologies LLC (Electrodelta) voltage regulators equipped with Ground Fault Protection Indicators.

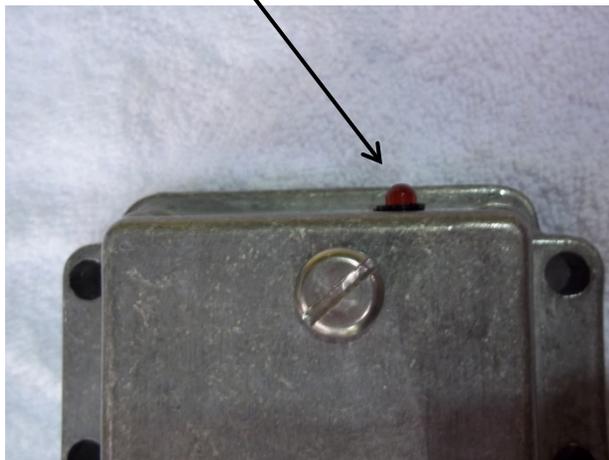
REASON: The following information is provided for use in alternator diagnostic testing using ground fault protection (GFP) circuitry and indicators installed in **Electrodelta** voltage regulators. **Electrodelta** units having GFP circuitry sense the build-up of electrical current resulting from a short to ground, and will cut off the output power transistor before the current becomes destructive. When the protection activates, the red LED on the front of the voltage regulator illuminates, annunciating the presence of ground fault.

INFORMATION: This document is for reference only. Always refer to the aircraft/rotorcraft manufacturer's service and maintenance manuals concerning Instructions for Continued Airworthiness or test and adjustment information specific to the application.

PROCEDURE:

To use the GFP circuit and LED feature as a diagnostic tool for determining whether a field circuit ground fault is present, first determine where the failure most likely exists, typically in the alternator or its wiring circuit to the voltage regulator. In the case of a VR515GA, overvoltage (OV) protection lights both the GFP LED and the OV warning lamp (if installed); a ground fault will illuminate only the GFP LED.

Ground Fault LED



1. After a failure; Without turning off the aircraft alternator control switch or resetting the voltage regulator, shut down the engine with the power and/or alternator control switch "On" and check the front of the voltage regulator to see if the LED remains "On".
2. If the LED is "Off", the problem may be overvoltage and the voltage regulator likely has a shorted power transistor; replace the voltage regulator.
3. If the LED is "On", the problem may be a ground fault in the alternator rotor, its wiring circuit, or there may be substantial brush arcing at the slip ring interface.
4. Reset the voltage regulator by turning off the power or cycling the alternator control switch. Disconnect the field wire from the alternator and insulate it. Start the engine and run at the highest speed practical to obtain maximum airframe shake and vibration.
5. Without turning off the alternator control switch or turning off electrical power, shutoff the engine and observe the LED. If it is "On", the problem is NOT the alternator. Check the outer wiring for chafed or broken insulation.
6. If the LED is "Off", the problem is usually the alternator. It may have a flying short in the rotor or a shorted or arcing brush. Replace the alternator and retest.

WARNINGS & PRECAUTIONS:

Consult your airframe operating and maintenance manuals and technical information for additional guidance in application.