

INSTALLATION OF LR3 VOLTAGE REGULATOR

* When mounting the LR3, try to choose a location that will protect it from heat, vibration, and water. We recommend on the pilotside of the firewall, or inside the cabin somewhere close to the panel, (linear regulators create no noise problem). On a LongEze, you can mount it on F22 under the canard.

* Install the low voltage warning light in your instrument panel. The light should be positioned within the pilots' peripheral vision (generally, a 45 degree angle in front of the pilot). It is best to install the lamp away from direct sunlight. If the lamp is in indirect sunlight, be sure to test it on a sunny day to be sure that the lamp is visible while operating. The bulb is a MIDGET FLANGED #330 BULB for the 14V LR3 or a #327 for the 28V LR3. There is a small piece of heat shrink tubing in the plastic bag. Cut this into two (2) pieces and install onto the wires that go to the lamp. Finally, solder the wires onto the lampholder assembly and shrink the heat shrink tubing over the connection.

* Refer to the diagram on the opposite side for wiring the regulator. The wire to the ground stud is to provide a redundant ground to the regulator. A jumper between terminal #7 and the GROUND STUD will not provide this. If the case of the regulator is already grounded by the mounting screws (e.g. on a metal airplane), the ground stud does not need to be grounded with an additional wire.

* The LR3 now senses the bus voltage through terminal #3 instead of terminal #6. This gives the LR3 a more accurate reading of bus voltage. If you are not going to use the low voltage warning light and wish to simplify the wiring as much as possible, you can hook up terminals 4, 6, and 7 as shown and then install a jumper wire between terminal #6 and terminal #3. This is not the preferred connection. If terminal #3 is not connected to anything, the LR3 will not work.

* **Be sure to use a 5 amp. circuit breaker on pin 6 of the regulator.** Connecting pin 6 directly to the bus or using so called "solid-state breakers" (PTC thermistors) will damage the regulator if there is an over voltage trip.

* The regulator is pre-set at 14.4V. If you need to adjust the output voltage of your alternator, just remove the 3/4" round plastic plug from the side of the regulator. Using a small screwdriver, turn the small screw clockwise to increase voltage, counter-clockwise to decrease the voltage (approximately 1/2 turn per .1 volts). Use a digital voltmeter connected to the battery for this measurement.

* If you are on a long approach at night with low engine RPM and a heavy electrical load, the low voltage light may come on. The plastic lens can be unscrewed to turn the light off, or install a dimmer type lamp holder.

OPERATION OF THE LR3 VOLTAGE REGULATOR

After installation is complete, turn on the battery master switch. The low voltage warning light may or may not flash depending on the condition of the battery. If it does not begin flashing, turn on the landing light or the nav lights. This should lower the battery voltage enough to make the warning light start to flash, (between 12.5 and 13 volts is where the light will begin to flash). Now start the engine according to normal procedure. When the engine is running and the battery master switch is on, turn the alternator field switch on. You should notice the bus voltage rise to 14 to 14.4 volts depending on engine RPM, type of alternator used, and amount of electrical load turned on. The low voltage warning light should no longer be flashing.

In normal operation the field breaker will be closed (ON) and the low voltage warning light will not be on. Depending upon battery type, condition and temperature, the LOW VOLTAGE light may flash a few times and then quit when the master switch is turned on and the engine is not running. To verify low voltage sensor operation, momentarily turn on landing lights with the alternator off-line. The LOW VOLTAGE light should begin to flash as soon as the bus voltage drops to 12.5 volts.

LOW VOLTAGE WARNING - continuous rapid flashing of the warning light.

OVER VOLTAGE WARNING - the 5 AMP alternator field breaker will open causing alternator to be shut down. If sufficient loads are operational, the LOW VOLTAGE warning light will begin to flash in a few seconds. If electrical loads are very light, the LOW VOLTAGE light may take longer before it starts flashing.

OVER VOLTAGE TEST - if you desire to verify that the over-voltage protection is functional, momentarily touch a jumper wire between terminal 2 and terminal 6. This will cause the field breaker to open within 1 second. This test should be performed when you first install the LR3 and repeated during your annual inspection.