



AUTOMATIC VOLTAGE REGULATOR (AVR) REPLACEMENT

To replace a missing or unknown voltage regulator on a brushless ac generator when you have no information as to make or model of the original regulator, or specifications relating to the unknown regulator, the following data essential:

1. Resistance of the exciter field - Resistance in ohms between the two exciter field leads F1 (F+) and F2 (F-). The minimum exciter field resistance is usually specified by the voltage regulator manufacturer to assure over current protection for the regulator. The regulator manufacturer will usually deny warranty for applications where the resistance of the exciter field is lower than the minimum value specified for the specific regulator.
2. Full load excitation from the generator nameplate in dc volts and amps. This will give us the minimum current handling capability and minimum continuous regulator output voltage requirement, data necessary in determining the appropriate device to recommend.
3. Generator rated voltage and frequency. Generator output voltage is necessary to determine sensing input, and availability of proper input ac voltage. Most regulators will function properly on either 50 or 60 hertz ac generators. However, as a general rule, regulators will either not function properly, or may be damaged if the ac power input frequency is over 115% of the regulator's rated value.

The following information while not necessarily essential, will be very helpful in selecting an appropriate regulator model.

1. Paralleling requirement - if any. Some more cost effective devices such as the SE series AVRs are not designed to be used in paralleling applications.
2. Existence of any installed excitation support system such as current boost, series boost, or PMG. If a PMG is incorporated in the generator, the manufacturer of the generator should be consulted. Most PMGs are designed to produce 120 or 240 volts single phase ac at frequencies higher than 50/60 hertz, and thus may not be compatible with standard automatic voltage regulators designed to function with shunt type exciters.
6. Any unusual application requirements such as voltage regulation requirements tighter than plus or minus 1%, Electro-Magnetic Interference suppression, existence of large amounts of SCR loading, etc. Here again, selection of a specific model regulator may be affected by unusual or unique system requirements.