C.E. Niehoff & Co.
BRUSHLESS ALTERNATORS

N1224-1 Alternator w/ N3221 Regulator

Quick Troubleshooting

Basic Troubleshooting

1. **Inspect charging system components**
   Check connections at ground cables, positive cables, and regulator harness. Repair or replace any damaged component before troubleshooting.
2. **Inspect connections of vehicle batteries**
   Connections must be clean and tight.
3. **Determine battery type, voltage, and state of charge**
   Batteries must be all the same type for system operation. If batteries are discharged, recharge or replace batteries as necessary. Electrical system cannot be properly tested unless batteries are charged 95% or higher.

CAUTION When performing the following test, connect jumper wire away from pin A or not at pin A. Spark may erode pin.

Turn off engine, leave key on. Disconnect alternator-to-regulator harness plug. Connect jumper wire from pin A in plug to B+ terminal on alternator. Spark will occur. Touch steel tool to shaft to detect significant magnetism. is shaft magnetized?

Yes	No
	Alternator is defective.

Remove jumper wire. Reconnect harness to regulator and make sure connection is tight. Operate vehicle. Observe charge voltage.

CAUTION If charge voltage is above 33 volts, immediately shut down system. Electrical system damage may occur if charging system is allowed to operate at excessive voltage.

- ➢ If voltage is at or below regulator setpoint, let charging system operate for several minutes to normalize operating temperature.
- ➢ If voltage continues to be above or below setpoint, remove and replace regulator. Retest charging system.

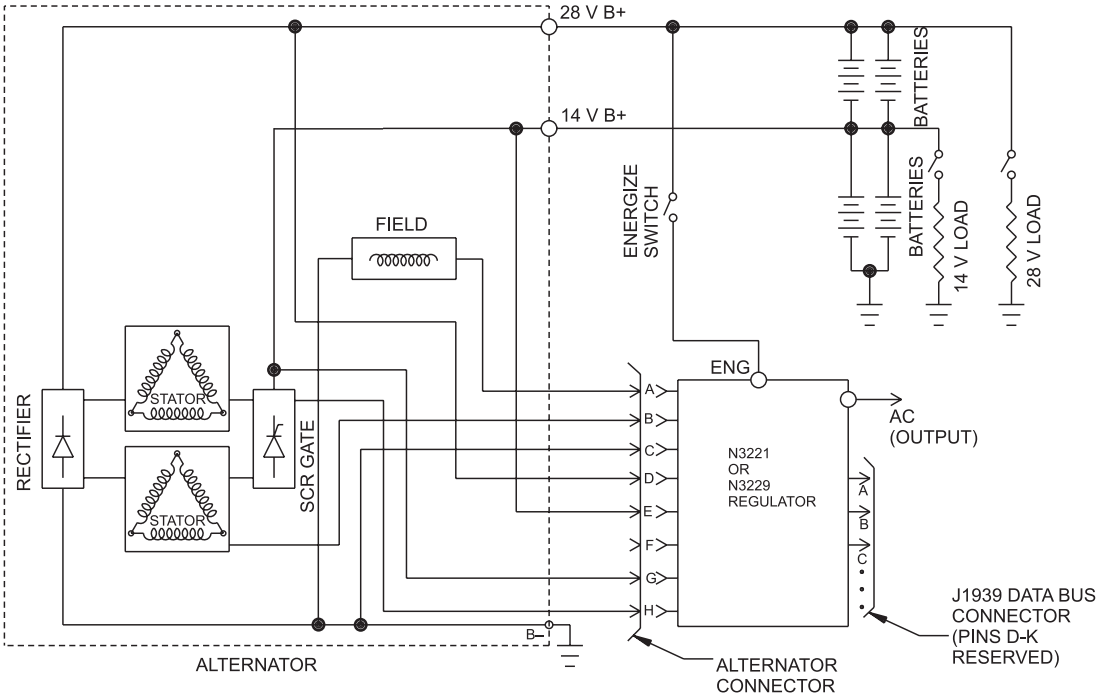

Figure 1 — N1224 Wiring Diagram