

Products: Delco Remy 24SI Alternators (also applies to Remy 13, 18, 28 and 40SI systems in Heavy Duty, 22SI with 4-pin connector and DR44 Series Light Duty Alternators)

Applications: Various On and Off Highway Heavy Duty Vehicle Applications with Battery Isolator

Background: Delco Remy 24SI Alternators may not operate properly when used with some types of Battery Isolators (diode-type). Other Remy alternators may work better under similar conditions.

Problem: For Remy 24SI Alternators, a B+ voltage on the output stud is necessary for initial turn-on (excitation). The Voltage Regulator in a 24SI system utilizes a special ASIC chip that requires a minimum of 8V_{DC} in order to function and operate properly. Because the Alternator is isolated from Battery power by the isolator, there is no voltage to begin the initial turn-on procedure. Once energized, the regulator uses the internally generated system voltage to operate.

The design of a Battery Isolator acts as an electrical check valve from the alternator to each of the batteries in the system, thus isolating the battery voltage from the alternator B+ terminal. Other types of alternators utilize a diode trio and low-side rotor field drive regulator (basic white package design) which acts to self generate a turn-on signal.

Recommendations: The Battery Isolator recommended for 24SI models have an additional input terminal for excitation of the alternator in the start and run positions only (ignition circuit) that is fed to the isolator. **Most major Battery Isolator manufacturers have specific models that provide an ignition terminal excitation feed to the Alternator B+ terminal** in order to accomplish the required turn-on task. Please consult the manufacturer or your electrical supply distributor for additional information. Beginning in the mid-1980's, Delco CS type units have utilized this modern regulator technology, and major isolator manufacturers have added this extra terminal to their product lines.

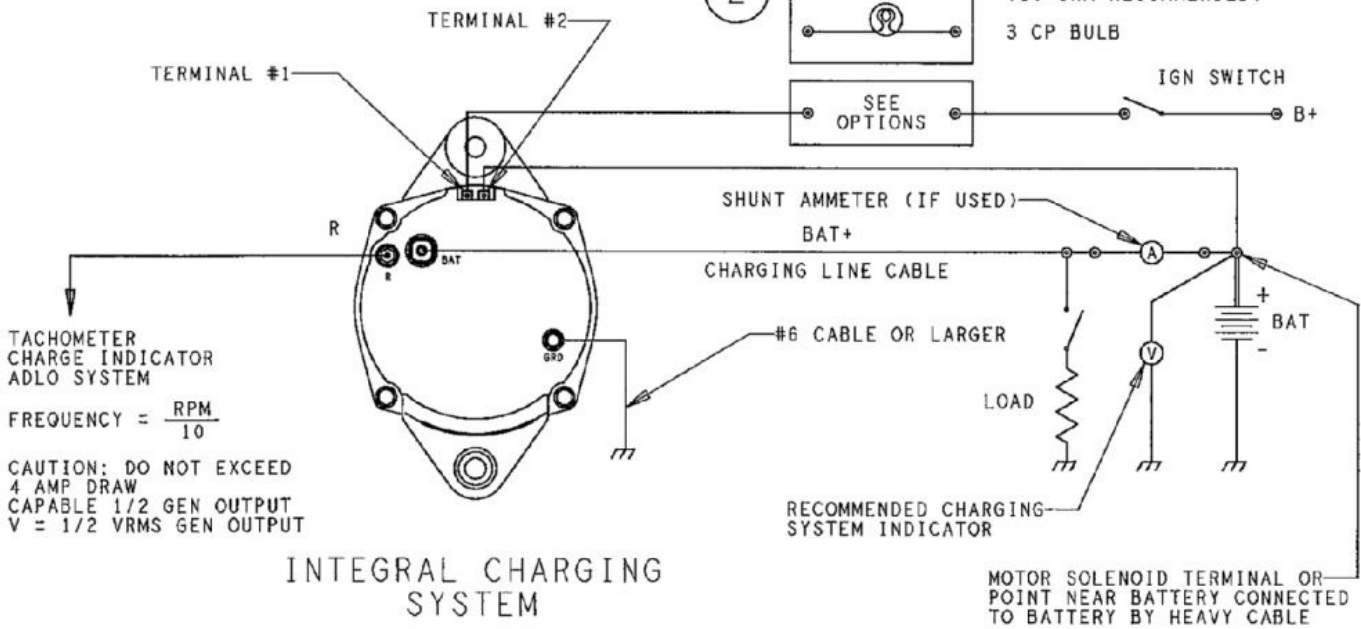
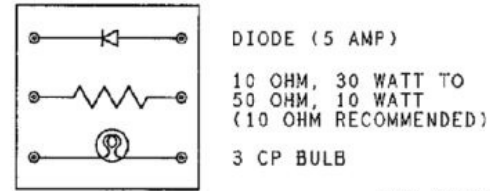
- The excitation of any other terminal besides the B+ on the 24SI will not result in proper operation, and it may result in damage.
- The sense terminal of the alternator must be connected to the main battery in order to properly regulate the system voltage and charge the batteries.
- If replacing another type of alternator with a 24SI for service, changing of the Battery Isolator may be required.
- All wiring should be checked for corrosion and increased circuit resistance during the life of the application.

IMPORTANT! Please note that if the unit is not connected to the system correctly with the proper battery isolator, it may appear that the alternator is not charging or it is regulating at a low voltage creating a low state-of-charge condition. Please check your connections and all manufacturers' installation instructions. If Delco Remy units are returned to the Remy Inc. Reliability Center and found to be Trouble Not Found (TNF), no credit will be issued.

Without Battery Isolator:

TYPICAL WIRING DIAGRAM

OPTIONAL CONNECTIONS TO #1 TERMINAL - USE ONE



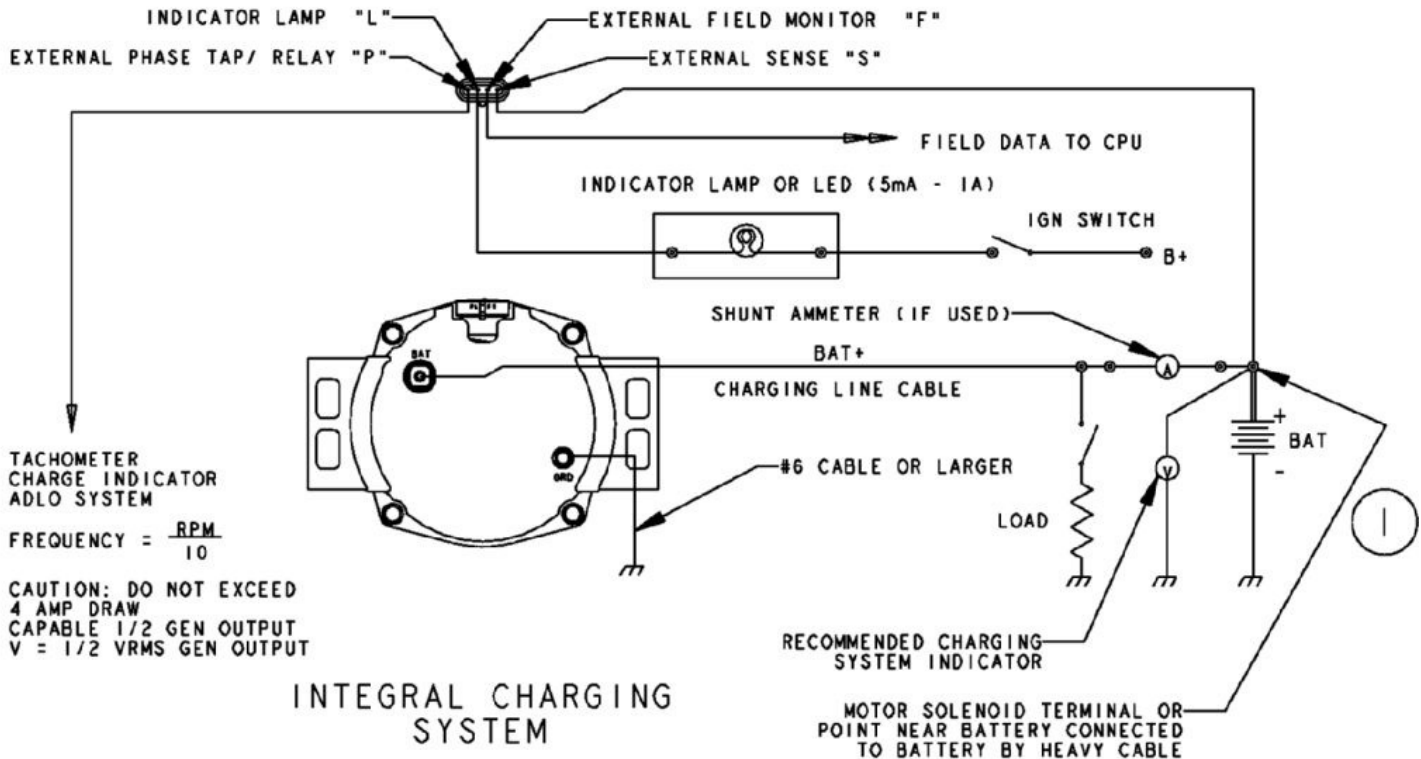
INTEGRAL CHARGING SYSTEM

RECOMMENDED FOR CABLE SIZE DETERMINATION

CHARGING LINE CABLE DROP SHOULD NOT EXCEED 0.5 VOLTS (FROM GENERATOR TERMINAL TO BATTERY TERMINAL AT FULL GENERATOR OUTPUT) FOR ADDITIONAL WIRING INSTALLATION INFORMATION SEE DRL16186 OR CONTACT YOUR DELCO REMY REPRESENTATIVE.

TYPICAL WIRING DIAGRAM

ALL TERMINAL CONNECTIONS ARE OPTIONAL



INTEGRAL CHARGING SYSTEM

With Battery Isolator: (Excitation circuit added)

