

GLOSSARY OF ALTERNATOR TERMS

Earth return (ER) / Grounded (G) alternators may only be fitted with a B+ (battery positive) terminal. The negative part of the electrical circuit is normally completed through the body of alternator to the vehicle, ie earthed / grounded. Also referred to as ground return. On certain vehicles a B- stud is fitted to the alternator. This is connected to the body of the alternator and must be connected to the negative earth lead where fitted.

Insulated return (IR) / Insulated ground (IG) alternator have B+ (battery positive) and B- (battery negative) terminals, ie the battery leads at the alternator are insulated from the alternator frame, ie insulated return.

B+ terminal is the battery positive connection on the alternator.

B- terminal is the battery negative terminal on the alternator.

WL is the warning lamp terminal. (L when smartreg is used.)

W or **~** or **AC** is the phase terminal, used for tachometer

DFM terminal communicates with the vehicle ECU and controls alternator output depending on load and system conditions.

F- is field isolation terminal. If field isolation is not required the F- must be connected to the B- terminal.

S is the sense lead / terminal. This is normally used where the voltage drop across battery leads are expected to be significant, ie long battery cable runs, where multiple battery banks and load splitters are used. This terminal monitors the voltage at the point of termination not the alternator terminals, and regulated alternator performance accordingly. This terminal is normally connected directly to the positive terminal of the charging system battery.

Alternator rotation. Alternator rotation is determined by the fan design. By design the alternator is bi-directional and can operate in either CW or CCW direction. Straight vane fans are bi-directional, see fig.1. Curved vane fans are direction specific, and a rotation direction is indicated on the fan, see fig.2. Directional fan design generally provide more efficient cooling of alternator.

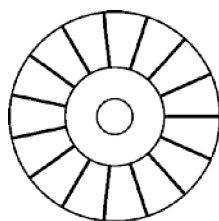


Fig.1

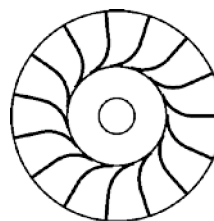


Fig.2

Internal fan alternators are rotation specific, due to the fans being permanently attached internally to the rotor. The direction of rotation on internal fan alternators cannot be changed. Consult the drawing or Technical Helpline for specific part number rotational direction.

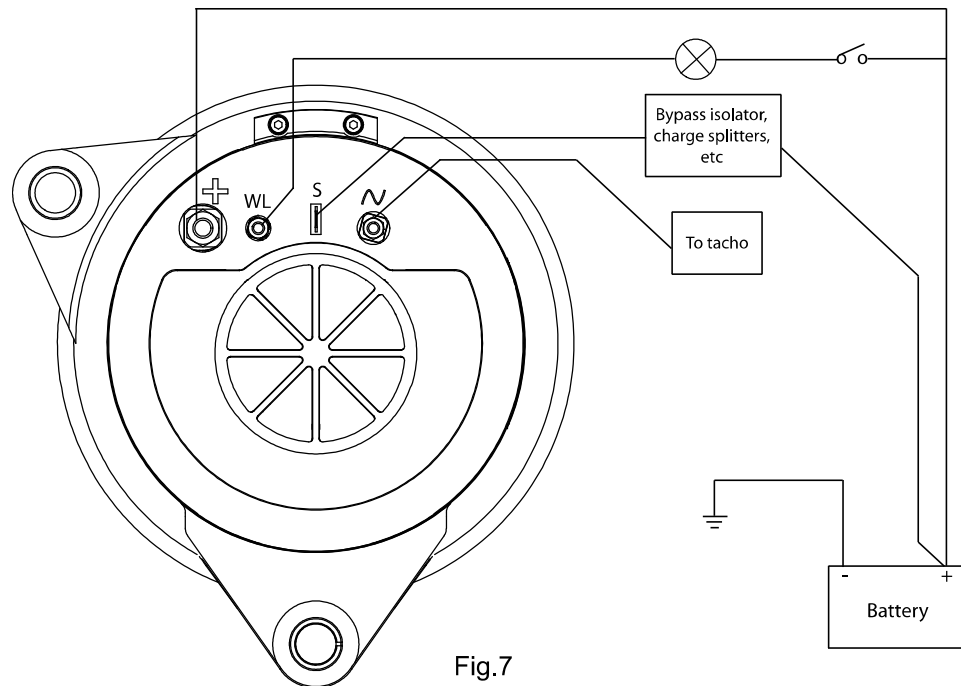
Note: Directional rotation when looking at front of the alternator.

ALTERNATOR WIRING DIAGRAMS

The wiring diagrams shown below are typical and for reference only. For specific wiring diagrams or information, please contact the Technical Helpline on +44 (0) 20 8231 1137.

EARTH RETURN

The negative circuit is supplied through the vehicle chassis and the alternator frame.



INSULATED RETURN

The negative circuit is isolated from alternator frame and vehicle chassis.

