

POWERLINE ALTERNATOR

With Stator or "R" Terminal

Determine Alternator output frequency

All Powerline Alternators have either a stator or "R" Terminal: Voltage at this Terminal is a pulsating D.C. and is usually one-half of systems voltage as read by a Voltmeter:

Pulse frequency varies with RPM and series of Powerline Alternators:

Devices for sensing engine (Alternator) RPM such as Tachometer may be connected to stator or "R" Terminal:

The maximum amperage load that can be connected to the stator or "R" Terminal is 4.0 AMPS:

How to Determine Alternator Output Frequency Vs. Engine RPM:

1. Determine Alternator – Engine Ratio

$$\frac{\text{Engine Pulley Dia.}}{\text{Alternator Pulley Dia.}} = \text{Ratio}$$

$$\text{Example } \frac{8}{2.5} = 3.20 \text{ (Alternator RPM is 3.20 Times faster than the Engine)}$$

2. Determine Alternator Stator / "R" Terminal Frequency Vs. Engine RPM:

$$\frac{\text{Engine RPM} \times \text{Ratio}}{\text{AF (Alternator Factor)}} = \text{Stator / "R" Terminal Hz}$$

3. Alternator Factors

12 Poles
24 Series = AF 10.0
25 Series = AF 10.0

14 Poles
23 Series = AF 8.57

$$\text{Example for 24, 25 Series}$$
$$\frac{600 \text{ RPM} \times 3.20}{10.0} = 192 \text{ Hz}$$

Therefore, Stator / "R" Terminal frequency is 192 Hz @ 600 Engine RPM:
Alternator factor (AF) is a function of the number of Powerline Rotor Poles: