

DR340

DESCRIPTION

The Clover Systems DR340 is an all-electronic voltage and current regulator for dynamos used in vintage cars, trucks, tractors and boats. Previous to the 1970's, vehicles used DC generators rather than the AC alternators used today.

In order to provide adequate power without destroying the battery, some means of controlling the generator's output voltage and current are required. This was accomplished using mechanical relays. Although this scheme can work, there are some drawbacks:

- The contacts of the relays become dirty, corroded, and burned, causing unreliable operation and failure. The contacts must periodically be cleaned and adjusted.
- The cut-in voltage is fixed.

The Clover Systems DR340 works in the same way, but substitutes transistor switches for the mechanical relays. As a result, switching is cleaner and more reliable, and no cleaning or adjustment is ever required.

With the DR340, power is output whenever the generator voltage is higher than the battery voltage, so useful power can be supplied at a lower RPM and lower battery voltage.

APPLICATIONS

- Autos
- Trucks
- Tractors
- Boats



Electronic Dynamo¹ Regulator

The Clover Systems DR340 is an all-electronic voltage and current regulator for DC generators. Replace your old mechanical regulator with an all-electronic regulator that never requires cleaning or adjustment. Don't waste your money on used or aftermarket mechanical replacements. This control box will be trouble free for the life of your car. The LUCAS plastic cover shown is not included.

Benefits

- Never needs cleaning or adjustment
- Variable cut-in provides power whenever the generator output is higher than the battery voltage
- Trouble-free for the life of your vehicle
- Accommodates original Lucas cover (not included)

Features

- Exact replacement for Lucas RB 340
- No wiring changes required
- Regulates both voltage and current
- Original appearance with your original Lucas cover
- 12 volts, 7 – 55 amps
- Works with most 2-brush shunt-wound generators
- Automotive Grade components rated to 150°C
- Heavy-Duty Aluminum and stainless steel construction
- Installation hardware and instructions included
- Fully tested & burned-in at full load
- Made in USA
- One year warranty
- 30-day money-back guarantee

¹ A Dynamo is a type of DC generator that uses electromagnets to generate the magnetic field, and is self-energizing.



How the regulator works

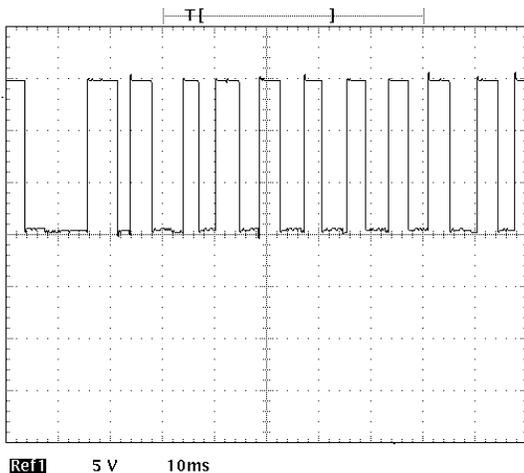
All generators work by rotating a loop of wire in a magnetic field. In a dynamo, the magnetic field is created by electromagnets (field coils). Voltage and current are controlled by controlling the current to the field coils. The current through the field coils determines the strength of the magnetic field that the armature rotates in, and thus the output of the generator.



In the DR340, the output voltage of the generator is compared to a precision voltage reference. When the generator output exceeds this reference, the current to the field coils is cut off. This causes the generator output to fall. When the output falls below the reference voltage, the field current is turned back on. In this way, the field current is modulated at a rate of 50 – 125 Hz. These rapid changes are smoothed out by the inductance of the field coils, thus maintaining a constant output voltage.

Current limiting is accomplished in the same way. Output current is sensed with a Hall-Effect device that detects the magnetic field created by the output current. When the output current exceeds a preset limit, the field current is turned off. Just as with the voltage regulation, the field current is modulated to maintain a constant output current.

Instead of a cut-out relay, DR340 uses a MOSFET “ideal diode”, which provides much higher efficiency than Schottky diodes. Power is supplied whenever the dynamo output voltage is greater than the battery voltage, rather than a pre-set voltage as in the mechanical regulator.



Oscillograph of Field Voltage Modulation

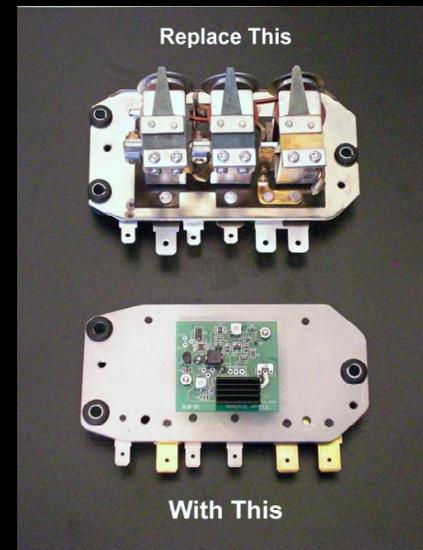
Specifications

- Dimensions: 5.0" x 3.0" x 1.57"
- Weight: 6 oz.

All specifications subject to change without notice

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Electronic Dynamo Regulator



Warranty

- All Clover Systems products are sold with a 30-day money back guarantee, and one-year warranty against defects.

Benefits



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