Product Information

DVR4 Electronic Regulator & Cut-out

(field to live or Type A, ground side regulation, current limited)

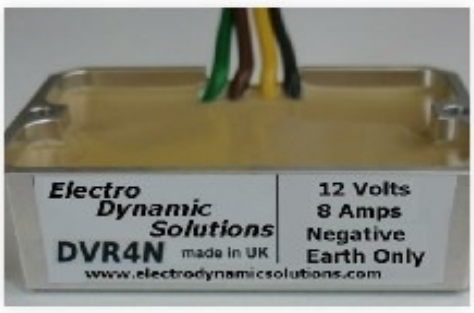
Introduction

Some of the key benefits from fitting a DVR4 high quality 'solid state' electronic dynamo regulator to the classic vehicle user are (in no particular order):

- brighter & more consistent lighting ('steady ammeter reading')
- reliable charging from lower engine speed
- easier starting due to greater battery power
- longer battery and bulb life
- lower maintenance (no adjustments to make & less battery top up)

General Description

The DVR4 is an electronic dynamo regulator offering a wide choice of output current limiting values (8 to 22 Amps). It is suited for use on many classic cars and other vehicles fitted with 2 brush dynamos with one side of the field winding connected to common 'earth' (sometimes referred to as 'shunt' field connection. It replaces both 2 bobbin CVC units and the later 3 bobbin Current-Voltage types. We have made every effort to ensure a robust and reliable design, using latest electronic components assembled using 'surface mount' technology. It is electrically rugged and is designed to operate inside the old regulator housing. The DVR4 is housed in a compact aluminium alloy case for superior heat transfer. This ensures good cooling for enhanced reliability.



Protection features

The current limit circuitry offers protection from excessive drain due to excessive loads or a low or failing battery for example. The unit is protected against voltage spikes from the dynamo or on the battery line and reversed polarity output of the dynamo. Experience has shown that these features are essential. It is **STRONGLY ADVISED** to fit at least one fuse is good practice with either original equipment type regulators or an electronic replacement to protect the vehicle from fire or other expensive damage to wiring and equipment. A 25A maximum fuse is recommended for 16 and 22 Amp versions, or a 15A maximum fuse for the 8 and 11 Amp versions.

Fitting

The DVR4 unit size is 60 x 42 x 18 mm. These units generate only a modest degree of heat but proper mounting is necessary to limit temperature rise and extend regulator life. Preferably the regulator is attached firmly to a flat (not hot) metal surface to act as a heat-sink Use M3 bolts and nuts to attach to the old backplate is best. Central holes either end of the case, 54 mm centres, (M3 clearance) provide a solid mounting – see example on the installation tab of the website

Connections

Before fitting the regulator we recommend confirming that your dynamo gives a good output of the correct polarity.

Seek the assistance of an auto-electrician or other competent person if unsure about any aspect of fitting.

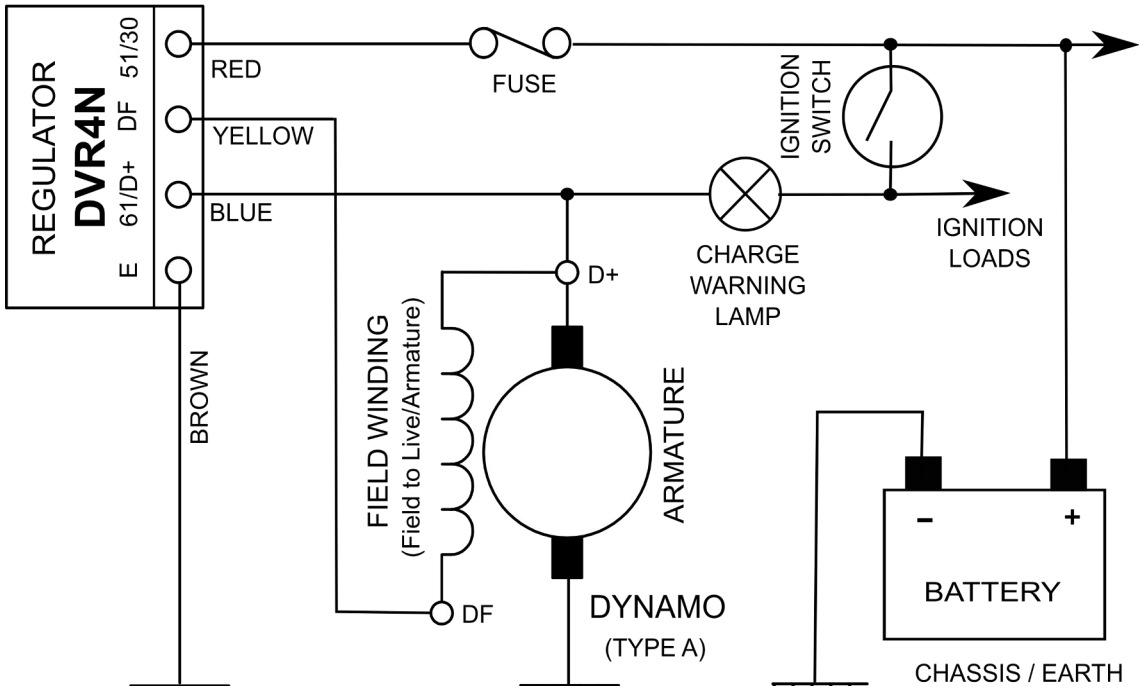
Disconnect the battery or remove fuse to isolate before connecting!

Connect the four leads as indicated in this table:

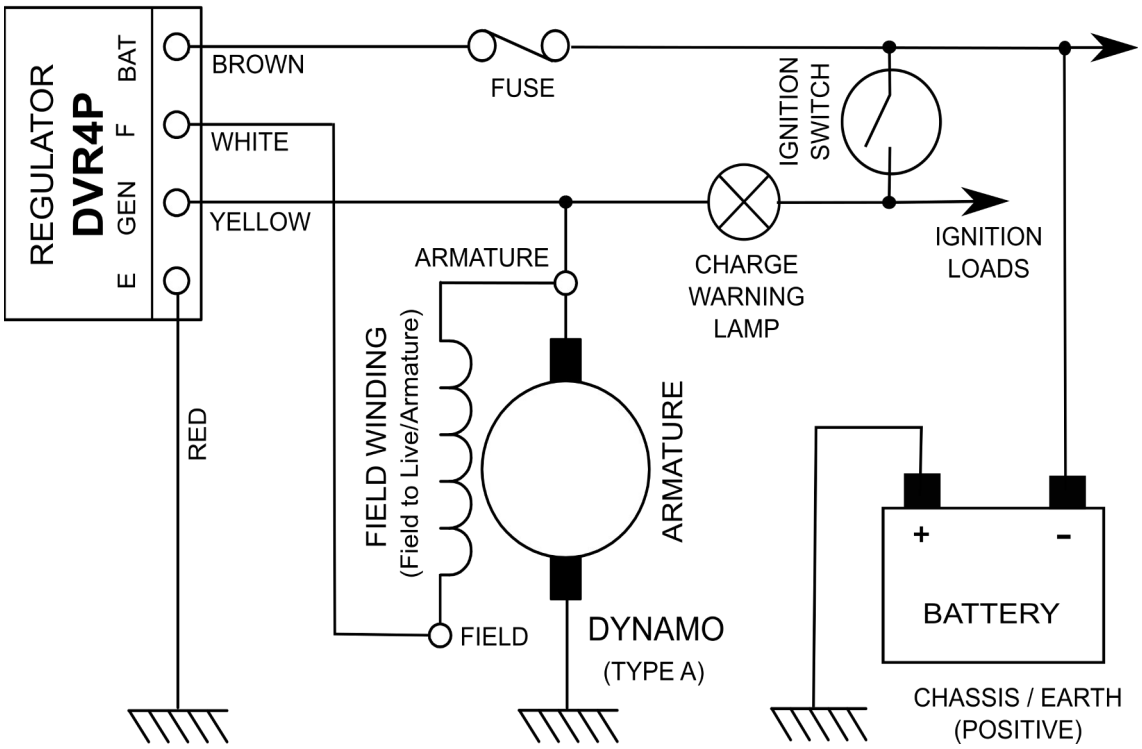
Negative Earth	Positive Earth
Red to battery, **51/30/B+**	**Brown** to battery live/BAT
Yellow to Field, **DF**	**White** to Field, **F**
Blue to Dynamo out, **61/D+**	**Yellow** to Dynamo out/ARM/GEN
Brown to Earth / chassis or frame	**Red** to Earth / chassis or frame

Don’t forget to refit the fuse!

Typical DVR4N connection diagram



Typical DVR4P connection diagram



(This partial wiring diagram shows many of the key features you may find on your vehicle. All kinds of variations abound; the aim here is to provide guidance. If uncertain please consult a marque expert.)

Other Notes
Disconnect or remove any old field resistor which may be fitted at the dynamo or elsewhere (wire-wound item connected to field terminal). Ensure that the field wire of the dynamo goes to the F terminal of the DVR4, and that no other wire is connected to it. *Failure to do so may result in overcharging and possible damage to equipment.*

IMPORTANT:
The resistance of the dynamo field winding ***must*** be greater than 3 ohms, or the unit will be permanently damaged.

IMPORTANT:
The regulator is electronic and therefore like all electronics it needs a certain voltage before it will operate correctly. This voltage is provided by the D terminal of the dynamo. Dynamo's use residual magnetism in the iron of the unit to start the feedback process that powers the electromagnets of the field coils via the regulator. If this is weak the dynamo may not start as there is insufficient voltage to run the regulator. It must be around 3 volts to start the field coils (measured at 3000 rpm generator speed)

If your dynamo does not generate the minimum voltage due to weak magnetics then you will need a "bootstrap" to start the dynamo. See the bootstrap article on the technical page for solutions.

IMPORTANT:
The DVR4 is ***not suitable for use with 3 brush*** dynamos. In many instances a 3 brush dynamo may be easily converted to a 2 brush unit.

IMPORTANT:
The metal case of the DVR4 is not connected to the 'earth' lead. If the earth connection via the lead is lost the dynamo output voltage will not be regulated and the unit will be damaged.

Guarantee
The DVR4 is guaranteed for one year from purchase against manufacturing defects, but not for faults caused by improper fitting or use.

If in any doubt about fitting use a competent autoelectrician.

PO Box 461, Uckfield, East Sussex, TN22,9GF, UK,

Tel: +44 (0)7789 301 013

http://www.electrodynamicsolutions.com

e-mail: sales@electrodynamicsolutions.com