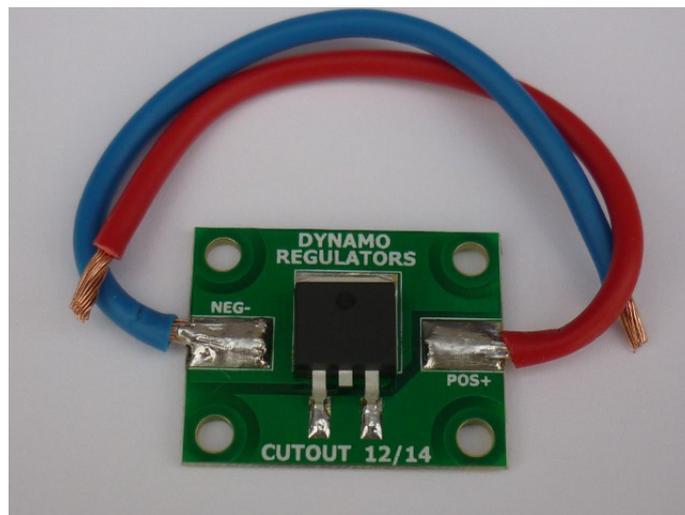




## ***Electronic 'Smart' cut-out unit***

### ***Introduction***

DRL's Smart Cutout conveniently and neatly replaces the cut-out 'relay' in 3 brush dynamo set-ups. It will also provide the cut-out function in later 2 brush voltage controlled systems where the regulator and cut-out functions are separate, e.g. Miller motorcycle equipment, or to replace the cut-out portion where the regulator is still fully functional. Not as good as converting to 2 brush and an electronic regulator but a lower cost option which maintains original appearance. Well suited for use with dynamos where the field resistance is very low to avoid expensive rewinds, and with cherished rare and unusual machines.



The Smart Cutout behaves very similarly to an ideal diode, with unrestricted conduction one way and a complete block to current in the reverse direction. It massively out-performs a Schottky diode (itself far better than an ordinary silicon 'PN' type diode) due to its extremely low voltage drop. As a result it also develops very much less heat. Less dynamo power is wasted and more gets to where it is needed. Well under 100 mV lost versus around 500 mV for large Schottky at 15 Amps, that is about 1 Watt dissipation compared with 7.5 W. Lower heat dissipation means that no heat-sinking is required and so this cut-out can readily be tucked away in a small space, out of sight if preferred.

The Smart Cutout is rated at 16 Amps continuous, and at 20 Amps for 15 minutes under worst case (high ambient temperature) conditions. The same device may be used in either Negative Earth or Positive Earth systems. In a Negative Earth vehicle the + terminal of the Cut-out connects to the dynamo side and - to the battery side. In a Positive Earth vehicle the - terminal of the Cut-out goes to the dynamo side and + to the battery side.

Smart Cutout reverse leakage current is extremely low, negligible in fact; typically less than 1 uA (microamp). Contrast with the leakage of many Schottky devices which is measured in milliamps (and which may be sufficient to drain a battery over an extended period of time). It withstands a reverse voltage of 30V.

The size of the circuit board is 32 x 25 mm (1 1/4" x 1") Mounting holes, 3.5 mm diameter, centres on a square 25.4 x 19 mm (1" x 3/4"). Flying leads are 100 mm long approx.



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