

Fitting Instructions

TEC3M Auto Switching Combination Relay 30amp

Description

This combination caravan relay automatically senses battery/alternator condition and load demand, and switches current from the car's battery to the caravan's battery, fridge and internal lights via its own split charge relay. Sensing is automatic and does not require the use of a separate lead from the ignition switch. Sensing takes account of over voltage availability of the battery, demand condition from the caravan and line voltage drop under load including the general condition of the connections train. The unit is very compact, which belies its ability to handle large currents of up to 30 amps continuously through the use of high quality low voltage drop relays and circuitry, whilst retaining an over temperature cut-out capability.

The TEC3M has been constructed to not only handle 30 amp loads, but it will also handle smaller loads from conventional caravans and still sense and process the load correctly.

Procedure

- Fit 13 Pin socket and heavy duty cable(s) according to instructions supplied with the socket kit.
- Route Twin 35/0.3 cable(preferably 44/0.3) or two single cables of 35/0.3 (44/0.3) from car battery or fuse box to boot, fitting an inline 30a blade type fuseholder, but removing the fuse at this stage.
- Offer up the relay to the various cables and make secure connections through the terminal block according to the chart below.

Relay Terminal	Connection
12v	First 35/0.3 (44/0.3) cable from car battery
12v	Second 35/0.3 (44/0.3) cable from car battery (Recommended for 30a loads)
6	12S Socket – Red Lead 13 Pin Socket with Twin cable – Red lead, 12S Cable or with 13 core cable – Grey lead
4	12S Socket – Green Lead 13 Pin Socket with Twin cable - Green lead, 12S Cable or with 13 core cable – Orange lead
2	12S Socket – Blue Lead 13 pin socket - No connection. May be paralleled with Terminal 6 of relay
0v	Suitable earth, minimum 16/0.2 thin wall preferably to chassis with ring terminal

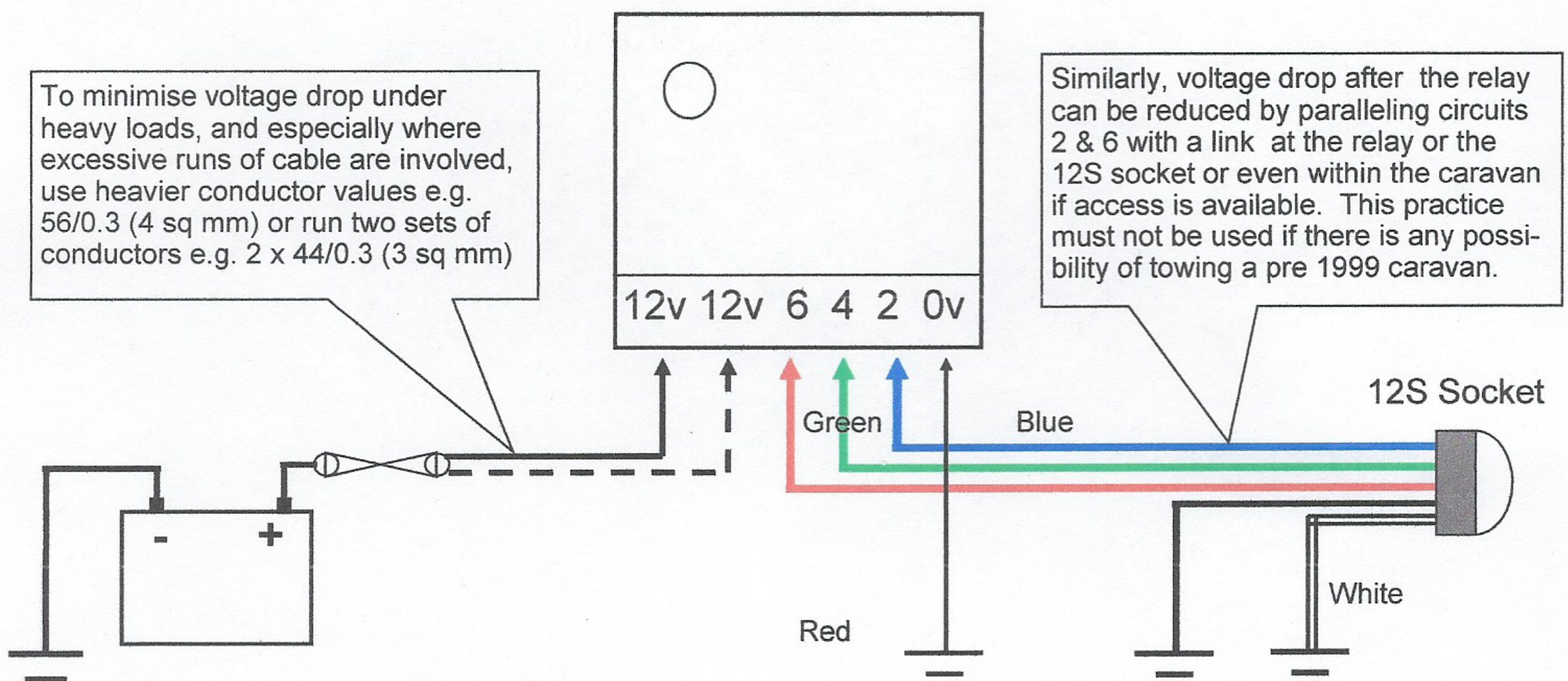
- Secure the relay to the harness or similar preferably using a tywrap, such that there is adequate ventilation to allow dissipation of heat from the unit.
- Insert the inline fuse and test.
With the engine off, the unit should remain unswitched.
With the engine on, the unit should turn on after a suitable delay of approx ½ min.
If a load simulation jig is available, test to ensure unit stays on under load.

Troubleshooting

Relay will not turn on with engine running	Insufficient overvoltage caused by faulty battery or alternator
Relay cycles under load	Faulty car battery Faulty electrical connections Excessive length or insufficient gauge of supply leads Single supply lead only used instead of double Excessive load – Discharged Leisure Battery or short
Long delay before turning off	Battery maintaining overvoltage. Normal with new battery

Note

If a heavy load fridge is known to be fitted to the customer's caravan, it is strongly recommended that either twin feed cables are fitted or that a single 56/0.3 cable is fitted to avoid cycling caused by excessive line voltage drop.



For 13 Pin variants see the connection table above.