towingelectricslimited

Speciality Manufacturer of Towing Relays & Electrics

Fitting Instructions

TEC2M Automatic Switching Combination Relay

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 continuously through the use of high quality low voltage drop relays and circuitry, whilst retaining an over temperature cut-out capability.

Procedure

- Fit 12S socket and cable according to instructions supplied with the socket kit.

- Route 35/0.3 cable(minimum stranding) from car battery to boot, fitting an inline 20a 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	35/0.3 cable from car battery
0v	Suitable earth, minimum 16/0.2 thin wall preferably to chassis with ring terminal
2	12S Socket - Pin 2. Blue Lead (Battery) **See Note**
6	12S Socket - Pin 6. Red Lead (Fridge)
4	12S Socket - Pin 4. Green Lead (Interior Lights)

Note. This arrangement applies to pre 1998 caravans, and should also work with post 1998 caravans. Pin 2 is not used on post 1998 caravans. However, having ensured that its function has not been assigned to other duties, it may still be connected to the relay in order to split the fridge load between the red and blue leads, using both terminals 2 & 6 on the relay. Recombination of the outputs can be made at any point from the relay to the 12S socket, or even within the caravan if this is permissible. A lower line voltage drop will result from load sharing, which may be advantageous to heavy duty fridge performance.

- 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 lead Excessive load – Discharged Leisure Battery or short
Long delay before turning off	Battery maintaining overvoltage. Normal with new battery

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