



MP3814B 13 Pin PREWIRED SOCKET KIT with 2M of CABLE 7 WAY BY-PASS RELAY and AUTO SWITCH 30A DUAL CHARGING RELAY

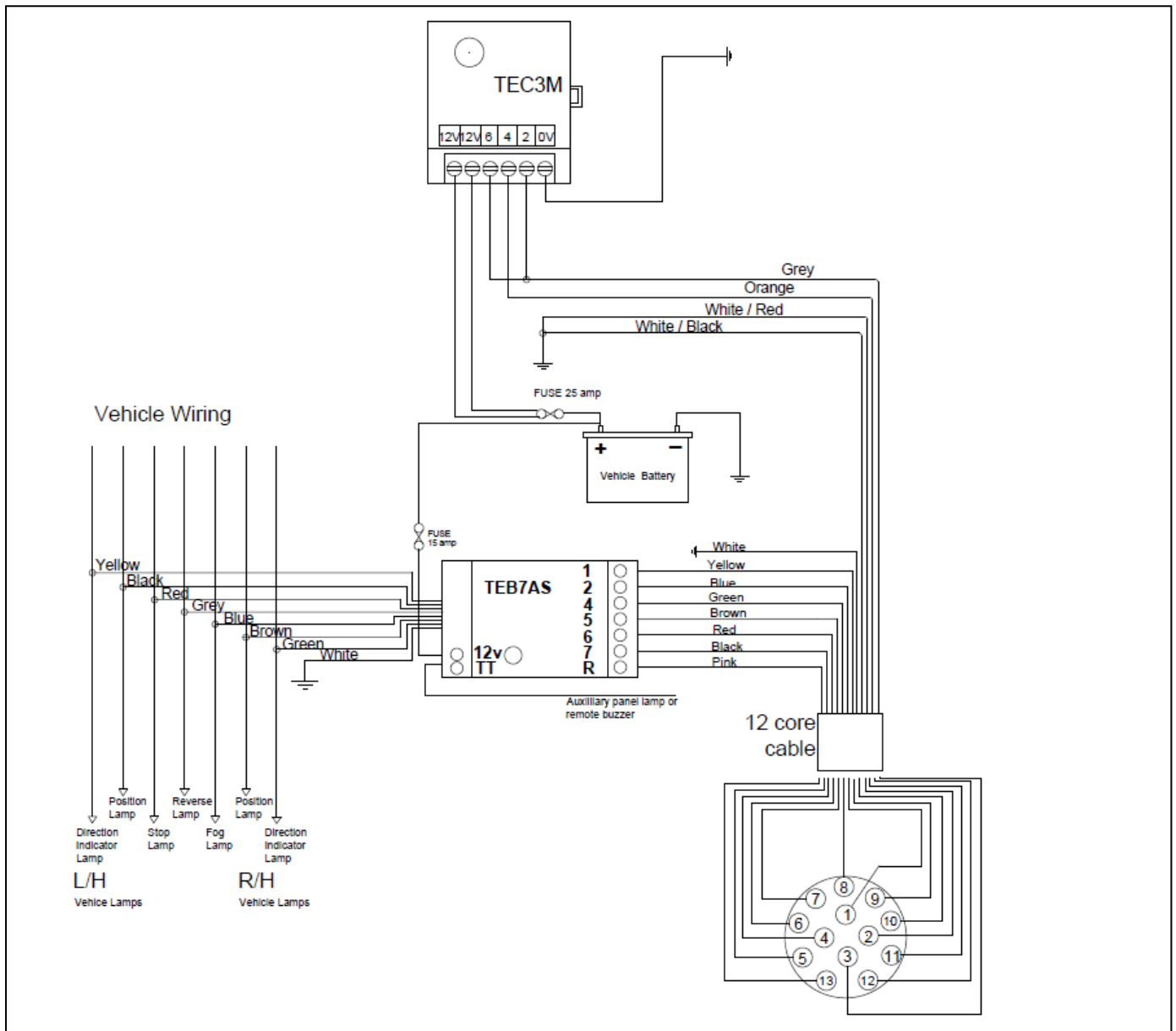
Contents

Pre-wired 13 Pin socket with socket seal and fixings, 7 Way By-Pas relay TEB7A (MP3877B), 3m twin cable, 0.5mm cable, Snap connectors, 2 x 5m Cable, Terminals, MP2883B (TEC3M) Charging Relay, 2 x Fuses and Holders.

Warning

Modern vehicles may be fitted with sophisticated electronics to monitor or to switch their road lights. Direct connection of towing electrics to CANBUS or Multiplexed or electronically switched lighting circuits could have an adverse effect and should be avoided. For these vehicles it is therefore strongly recommended that a multi-function by-pass relay MP3877B is used. Connections must not be made to CANBUS data wiring but only to the wiring supplying the lamps.

The use of a bypass relay will require a battery supply with in line fuse (see relay instructions for full details). If in doubt consult an auto electrician or tow bar fitter.



Socket Fitting Instructions

1. Check vehicle rear lights are working correctly and that the 13 Pin socket and relay can be directly and safely connected to them. Switch off all lights and the ignition switch, if necessary isolate circuits by removing fuses or disconnecting the battery. Caution! When removing fuses engine management, alarm or audio equipment may be affected.
2. Fit the pre-wired socket to the mounting plate using the existing mounting bolts.
3. If access for the socket cable is not provided, drill a suitable hole near to the tow bar, removing any sharp edges with a file, repainting and fitting a suitable grommet.
4. Locate the wiring to the rear lights of the vehicle (usually on one side) and select a suitable point at which to make the necessary cable and relay connections.

TEB7A (MP3877B) FITTING INSTRUCTIONS - Suitable for 12v negative earth vehicles only.

- Examine the car carefully to see that all electrical circuits are working correctly and that no warning lights are showing.
- Decide whether to disconnect the car battery, or remove fuses. Take into account: Would disconnection disrupt memory circuits, alarms, engine management, audio etc. (You may need a device to maintain these circuits if the battery is disconnected.
- Can you make the necessary electrical connections safely with the battery connected?

The relay should be fitted in a dry ventilated space, in a position providing protection from physical damage and close to the trailer socket.

When wired as below the relay switches power directly from the vehicle battery to operate the trailer lamps and draws typically around 1 milliamp from the vehicle lighting circuits. This current is not detected by vehicle monitoring or switching devices. Additionally, it is capable of detecting, analyzing and rerouting modulated signals present on an increasing number of modern vehicles which would otherwise cause incorrect bulb operation, relay chatter, dimming and even non-functioning of bulbs if a standard bypass relay were fitted.

1. Locate the wiring to the rear lights of the vehicle (usually on one side) and select a suitable point at which to mount the Bypass relay and make the necessary relay and 7 core cable connections. Connections must be made to conductors carrying a 12 Volt supply to the bulbs.
2. Earth connections can be made to the vehicle chassis or bodywork, a good connection is important; this should be bare metal, free from paint or rust.
3. **Relay Terminal TT** - The relay is equipped with an internal buzzer to provide an audible signal when the trailer indicators are working correctly. In addition a dashboard warning light or external buzzer can be connected to terminal TT, the other terminal of the lamp/buzzer should be connected to earth.
4. The 7 long signal wires of the relay must be connected to the individual vehicle lamp circuits avoiding any CanBus / multiplex wiring or other devices, as shown in the table below. The White signal wire of the relay should be connected to a suitable good earth. Identify the function of individual vehicle rear lamp wires by tracing back to the bulb holder or using a 12 Volt probe tester.

Socket pin No.	Cable colour	to	Relay Terminal Number	Relay Signal Wire Colour	to	Vehicle Circuit
Pin 1	Yellow		1	Yellow		L/H Flasher
Pin 2	Blue		2	Blue		Fog Lamp
Pin 3	White		-	White		Chassis / Earth
Pin 4	Green		4	Green		R/H Flasher
Pin 5	Brown		5	Brown		R/H Tail light
Pin 6	Red		6	Red		Brake Lights
Pin 7	Black		7	Black		L/H Tail Lights
Pin 8	Pink		R	Grey		Reverse
			+ 12V			Battery (+12V)
			TT (option)			Flasher Tell tale

Notes

For a common tail & brake wire combination, connect only the red signal lead to the car harness, insulate and tape up the brown and black relay leads. Similarly for a common tail & fog combination, connect only the blue signal lead to the car harness, insulate and tape up the brown and black relay leads.

5. **Relay Terminal +12V** Connected to a 15 Amp fused supply (not controlled by the ignition switch) using ring terminal, fuse holder and cable provided.

Warning! Do not insert the fuse until installation is complete.

Run the Red 5m power supply cable 28/0.3 (2.0 sq mm) from the battery to the terminal "+12V" of the relay, fitting a 15 amp in line fuse close to the battery. The cable should be routed where it will not be cut or crushed, particularly attention should be paid to places where the cable passes through bulkheads etc.

6. Check all wiring connections and if correct, reconnect the battery or replace fuses and connect the auxiliary lighting. The unit will automatically flash the lights on the test board. Check that both the vehicle lights and the auxiliary lights function correctly. Auxiliary indicator lamps should flash in unison with vehicle indicator lamps and the buzzer / panel lamp should operate. If any lamp fails to operate, check all wiring connections and the bulb. The buzzer or panel lamp will not operate if the auxiliary lighting is not connected or if the auxiliary indicator lamps fail.

Bulb failure warning lights will only operate if a fault occurs on the towing vehicle, with the exception of indicator circuits trailer lamps are not monitored.

Ensure that all wiring connections are correct, replace any fuses removed, connect the trailer 12N plug and check vehicle and trailer lights function correctly. Trailer indicators and audible sensor should operate simultaneously with vehicle lights.

Notes

Earth connections can be made to the vehicle chassis or bodywork. A good connection is important, this should be an earth point or bare metal, free from paint or rust

If there is a requirement to disconnect the vehicles rear fog lamps when towing to prevent back glare, this can be done automatically by fitting a Fog Cut Off relay part number MP276B or MP2761B

FITTING INSTRUCTIONS FOR TEC3M

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.

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

- Do not connect unit to the mains. Suitable for 12v negative earth vehicles only. For safety, disconnect car battery before fitting the unit.
- The relay should be fitted in a dry ventilated space, in a position providing protection from physical damage and close to the 12S socket.(usually in the boot of the vehicle)
- Route the Black 3.0 mm² single cable from car battery or fuse box to boot, fitting an in line fuse holder and 25 amp fuse, but removing the fuse at this stage.
- Offer up the relay to the various wires and make secure connections through the terminal block according to the chart below.

Relay Terminal	Connection
12v	Black 3.0mm ² cable from car battery with 25 amp fuse
12v	
6	Grey wire from Socket Pin 10 - (Switched Supply)
4	Orange wire from Socket Pin 9 - (Constant Supply)
2	Linked to Grey wire from Relay Terminal 6 to Socket Pin 10 - (Switched Supply)
0v	Suitable earth, white wire provided, preferably to chassis with ring terminal

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

Troubleshooting

Relay will not turn on with engine running	Insufficient voltage 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 voltage. Normal with new battery

Note

These instructions are applicable to all installations, including pre and post 1998 caravans with standard or heavy load fridges.

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