



THE ZIG C.F.9 CARAVAN BATTERY CHARGING & DISTRIBUTION SYSTEM



INSTRUCTIONS FOR FITTING

**ZIG ELECTRONICS LTD.,
CASHES GREEN
STROUD
GLOS.**

WIRING

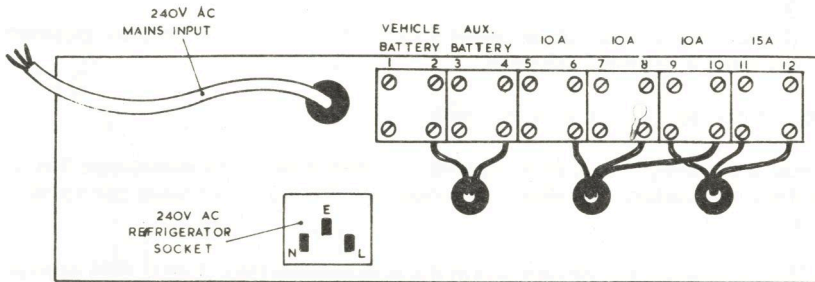
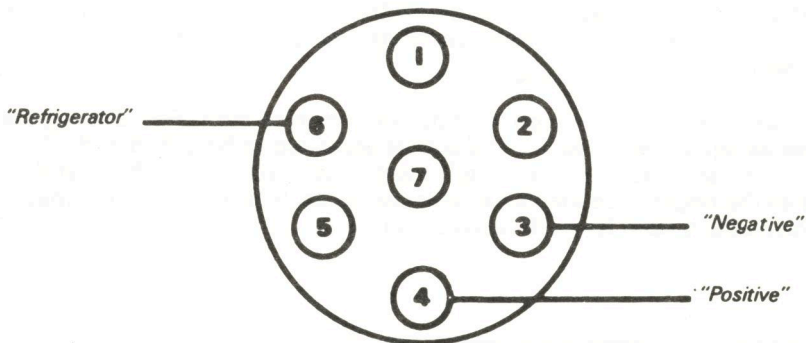


Figure 1.

Terminal connections

WARNING: UNDER NO CIRCUMSTANCES USE CABLE SMALLER THAN THAT RECOMMENDED.

Suitable cable can be bought from most motor accessory shops. Care should be taken when wiring the unit, and if there is any doubt a qualified electrician should be consulted.



Figures 2. 12S plug

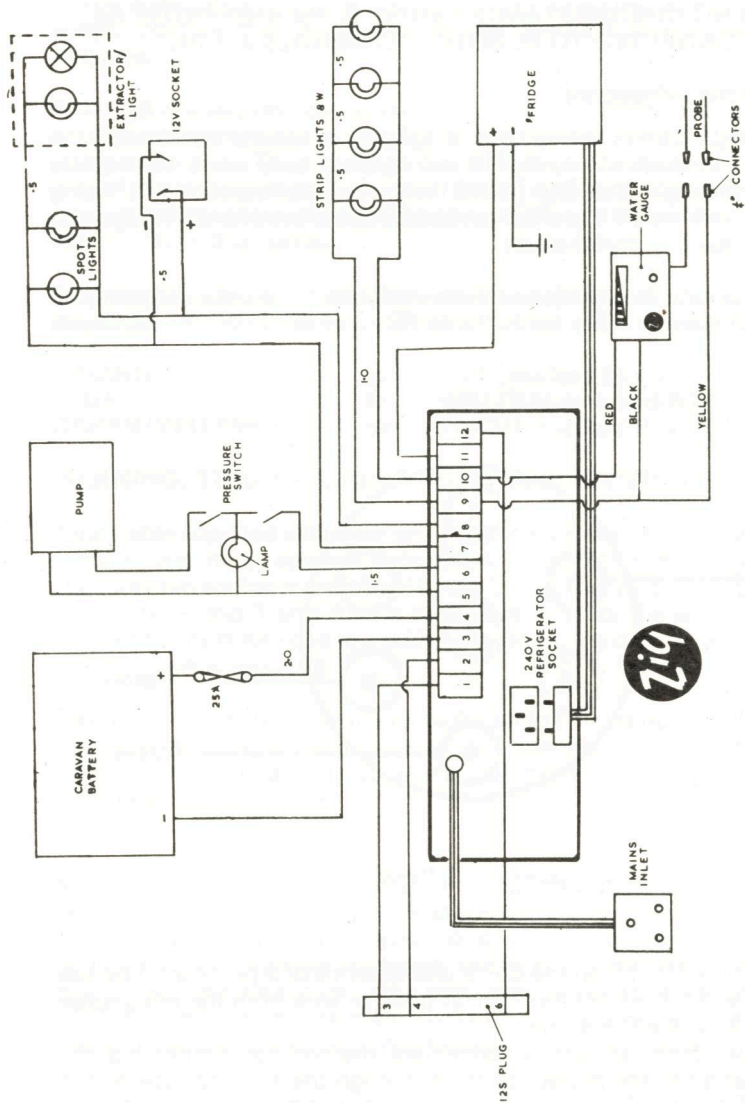


Figure 3.
Suggested wiring diagram for C.F.9

THE MAINS WIRING

WARNING, mains electricity is dangerous, particularly in caravans, if you do not have the necessary electrical knowledge you should entrust this part of the installation to a qualified electrician. The connection to the mains supply must be done in accordance with the I.E.E. Wiring regulations for caravans.

Although not required by legislation at the time of going to press, you are strongly recommended to fit a R.C.C.B. (Residual Current Circuit Breaker), also known as an Earth Leakage Circuit Breaker. These are an inexpensive way of preventing electric shock. If such a device is fitted it must be of the current operated type, the specification is: 25 amp, 30 milliamp operating in approx. 30 milliseconds.

A compatible plug for the refrigerator is supplied with the unit. Connect the plug to the refrigerator cable as follows:

BROWN	to	LIVE (marked L)
BLUE	to	NEUTRAL (marked N)
GREEN/YELLOW	to	EARTH (marked E or \perp)

WARNING: THIS APPLIANCE MUST BE EARTHED

If the cable supplied with your refrigerator does not correspond with these colours, you must consult a qualified electrician before connecting it. The three pin socket is protected by the 3 amp fuse on the front panel of the unit. NOTE – this 3 amp fuse is the master fuse for the whole unit, and in the event of its failure due to a refrigerator fault, the charger will not function until the fuse is replaced.

CAUTION – The three pin mains outlet on the unit is designed for use only with a caravan refrigerator, and is not suitable for any other purpose. It MUST NOT be used for supplying 13 amp sockets or any other mains appliances.

When all the 12 volt connections are complete, the mains connections can be made. The mains input plug and socket must be of the polarised type, i.e. connection can only be made one way round. Suitable sockets can be obtained from caravan accessory shops and chandlers. They should be to B.S.4343. Fit the socket to the side of the van in a suitable position, if an R.C.C.B. is fitted this should be as close to the socket as possible and the connections made with 2.5 mm flexible cable not exceeding 2 metres in length.

The input cable for the C.F.9. can now be connected, preferably using a small junction box (covered type), as follows.

BROWN	to	LIVE (marked L or coloured red)
BLUE	to	(marked N or coloured black)
GREEN/YELLOW	to	EARTH (marked E, \perp , or coloured green)

WIRING THE CAR

You are strongly recommended to fit the new 12 S supplementary plug and socket to your car, for a number of reasons, the 12 N original socket is now fully utilised for road lighting if fog lights are used, also the cable used with the 12 S system is of a larger diameter and better suited to the large current demands of modern caravans. Connections are made as in fig. 4.

The cable used must have a minimum dimension of 2 mmsq (28/03). The connection to terminal 4 on the 12 S must be taken right back to the vehicle battery and a 25 amp line fuse **MUST** be fitted in this line as near to the car battery as possible. Remember that any cable between the battery and the fuse is unprotected and is a fire risk. This fuse is fitted to protect your car and passengers, as well as the caravan, and must **NOT** be omitted. Connection to terminal 3 on the 12 S should be made directly to earthed metal at the rear of the car. If you are fitting a cable for a refrigerator, this goes to terminal 6 on the 12 S, noting that a separate cable must be run back to the battery again with a 25 amp line fuse. Do not attempt to join terminal 6 to terminal 4, this will severely limit the charging current available and could result in the 'fridge flattening' the caravan battery.

When the car wiring is complete, the van can be connected and the ZIG system checked out as described in the "INSTRUCTIONS FOR USE".

USING THE MAINS SUPPLY TO THE CARAVAN

The mains supply should be obtained from a domestic supply of 200 to 240 V A.C. from a fused connection point. Caravan site supplies use the B.S. 4343 outlet and suitable couplers can be obtained from most caravan accessory shops.

The cable used to connect the mains should be 3 core sheathed flexible mains cable not less than 2.5 mm sq. and should be regularly inspected for damage. When the mains is connected, switch on the MAINS ON/OFF control on the C.F.9 and check that this lights up. Set the "TOWING-ON-SITE" switch to on-site, and temporarily disconnect the batteries (by removing the fuses) check that the 12 volt equipment is working correctly. Reconnect the two batteries. Installation is now complete.

Split Chargers

With modern batteries, split chargers are not necessary, as batteries are now much more tolerant to equalisation. The relay type of split charger causes the major problem that current is only available from the vehicle battery when the ignition switch is on, thereby preventing use of the vehicle battery to assist the life of the caravan battery. The diode type of split charger causes voltage drop, this limits the charging current making it necessary to remove the battery for charging if mains is not available. If your car is already fitted with a split charger, we recommend that you remove—or bypass it. If you disconnect a split charging relay, ensure that a 25 amp line fuse is fitted next to the car battery, as described in "**Wiring the Car**".

NOTES