

**ZK3000A**

Batch 0000-PCT-00

### 12N Towing Interface Relay Kit

SUITABLE FOR USE ON 12V NEGATIVE EARTH VEHICLES ONLY

#### COMPONENTS

ITEM	QTY	DESCRIPTION	ITEM	QTY	DESCRIPTION
A	1	ZR1328A Type Approved Towing Interface Relay	G	1	Blade Fuse Holder
B	1	12N Pre-Wired Socket (2m Cable, Plate)	H	1	15 Amp Blade Fuse
C	7	Red Insulation Displacement Tap Connector	I	2	Blue Fully Insulated Female Spade
D	1	1m x 9/0.3mm White Wire	J	2	Red 6.4mm Ring Earth Terminal
E	1	5m x 28/0.3mm Red Wire	K	7	Connection Identification Warning Labels
F	1	Grommet			

#### FITTING PROCEDURE

- ⇒ Before commencing with installation please read all pages of this fitting instruction carefully.
- ⇒ Ensure vehicle circuits are de-energised, isolated and safe to work on (Always follow vehicle manufacturer's instructions).
- ⇒ Fasten 12N Pre-Wired socket mounting plate between the towball and towbar neck flange using the existing towball bolts.
- ⇒ Run the 12N, 7 core cable into the boot through the grommet supplied. This may require an appropriate hole to be drilled in the vehicle.
- ⇒ Locate the vehicle's wiring harness.
- ⇒ Connect terminal A of the ZR1328A to vehicle earth (-0 volts), using 9/0.3mm white wire and a red 6.4mm ring earth terminal.
- ⇒ Connect terminal B of the ZR1328A to +12 volts dc supply, through a 15 amp fuse, using 28/0.3mm red wire. The source of supply for the ZR1328A should not feed any other system or load. The source of +12 volts should be a spare fuse on the vehicle's fuse board (Check vehicle manual).
- ⇒ Using a high impedance automotive tester or digital volt meter check that vehicle +12volts dc is present on terminal B. The "Power On" LED should now be lit. (WARNING Only test for voltages through the wire aperture on the terminal blocks and not the screw head.)
- ⇒ Connect each of the ZR1328A's control input wires to the vehicle's rear road lights, as specified in the fitting diagram below. If insulation displacement tap connectors are the preferred method of connection, use the Red insulation displacement tap connectors supplied. Test the appropriate output terminal for +12volts dc after each connection. (WARNING Only test for the vehicle road light function wires using a high impedance automotive tester or a digital volt meter.)
- ⇒ The connection identification warning labels should now be attached by folding around the relevant wires adjacent to the joints on the vehicle's wiring loom. (Remember to include contact details on warning label).
- ⇒ When all vehicle road light input wires have been connected and the output terminals have tested OK, connect the 12N socket 7 core cable to the appropriate ZR1328A output terminals using the fitting diagram.
- ⇒ Connect the white wire from the 12N socket 7 core cable to vehicle earth (-0 volts), using a red 6.4mm ring earth terminal.
- ⇒ Reconnect vehicle power (Always follow vehicle manufacturer's instructions.)

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**COMMISSIONING AND TEST PROCEDURE**

1. Switch the vehicle engine off and remove the 15 Amp supply fuse to the ZR1328A.
2. Re-insert the 15 Amp supply fuse, and check the "Power On" LED is lit.
3. Start the vehicle engine and turn on and off the vehicle road lights in the following sequence:-  
Side lights, Brake lights, Left indicator light, Right indicator light, Fog lights
4. As each vehicle road light function is switched on in the sequence indicated above, test the corresponding 12N socket output (as shown in the fitting diagram), +12 volts dc should be measured on each corresponding output.

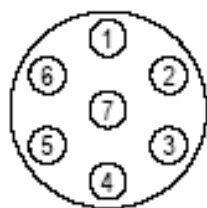
The ZR1328A contains electronic resettable fuses on the 12N socket outputs d to g. If any of the 12N socket road light outputs fails to be energised +12volts dc, turn off the vehicle road light function that is being tested, disconnect the corresponding socket road light function wire at the ZR1328A terminal, and re-test the ZR1328A output terminal. If the output terminal is measured +12volts dc, this shows that a fault exists in the 12N socket wiring. Replace or repair socket and/or cable as necessary and repeat from stage 3 of the Commissioning and Test Procedure.

5. With the vehicle engine running, commission the installation by plugging a 12N socket tester or trailer test board into the 12N socket. (Note some socket testers do not trigger the indicator audible bulb failure warning.) The operation of the tester or test board should mirror the vehicle's rear road light operation.

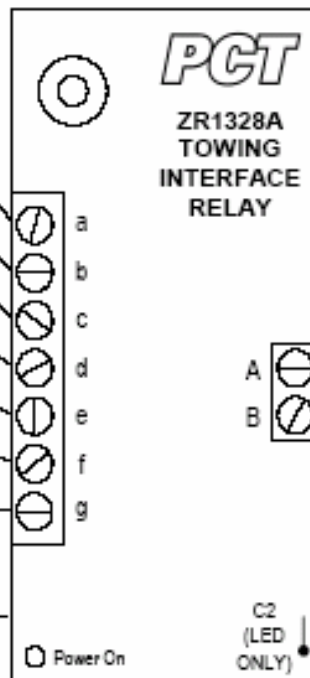
It is important to remember that the ZR1328A incorporates electronic resettable fuses on the 12N socket outputs d to g. If at this stage of commissioning the socket test equipment indicates that one of the 12 road lights socket outputs is not energising, turn off all the vehicle road light functions, disconnect the socket tester and test the socket road light function output that was not energising using a high impedance automotive tester or a digital volt meter, if the socket output is now found to be energised +12volts dc (when switched on), this shows that a fault exists in the socket tester/trailer board. Repair or replace as necessary.

6. All the vehicle road light functions should now be turned on together to 'pressure test' the complete electrics installation. All input cables and terminations should be checked for 'cool' operation. All the road light functions should be seen to operate on the 12N socket tester. When a trailer test board or trailer is connected to the 12N socket and the directional indicators operate, an audible indication of operation should be heard and the C2 pin output should become energised. This output is for use with a second buzzer or LED dashboard warning light.

If the customer's towed unit's lights fail to operate correctly, turn off all the vehicle road light functions, disconnect the customer's towed unit and test the socket road light function output that was not energising using a high impedance automotive tester or a digital volt meter, if the socket output is now found to be energised +12volts dc (when switched on), this shows that a fault exists in the customer's towed unit.

**FITTING DIAGRAM**
**12N SOCKET  
PIN CONFIGURATION**  
(View from front through flap)
**12N SOCKET 7 CORE CABLE**

- Not Used
- Pin No (2/54G) Blue Wire (Fog Lights)
- Pin No (6/54) Red Wire (Brake Lights)
- Pin No (5/58R) Brown Wire (RH Side Light)
- Pin No (7/58L) Black Wire (LH Side Light)
- Pin No (4/R) Green Wire (RH Indicator)
- Pin No (1/L) Yellow Wire (LH Indicator)
- Pin No (3/31) White Wire (Vehicle Earth)

**CONTROL INPUT TO ROAD LIGHT FUNCTIONS**

- White Reverse (Not Used)
- Blue Fog Lights
- Red Brake Light
- Brown Right Hand Sidelight
- Black Left Hand Sidelight
- Green Right Hand Indicator
- Yellow Left Hand Indicator
- 0 Volt Vehicle Earth (9/0.3 Wire Minimum)
- +12 Volt (28/0.3 Wire Minimum)

The C2 output pin becomes energised at the same time as the audible buzzer sounds. The C2 output pin is for use with a second buzzer or an LED dashboard warning light.

PCT Automotive recommends:-

- ZL1083 LED Warning Light
- ZR1018 Mini Buzzer
- ZR1019 Mini Buzzer in Box