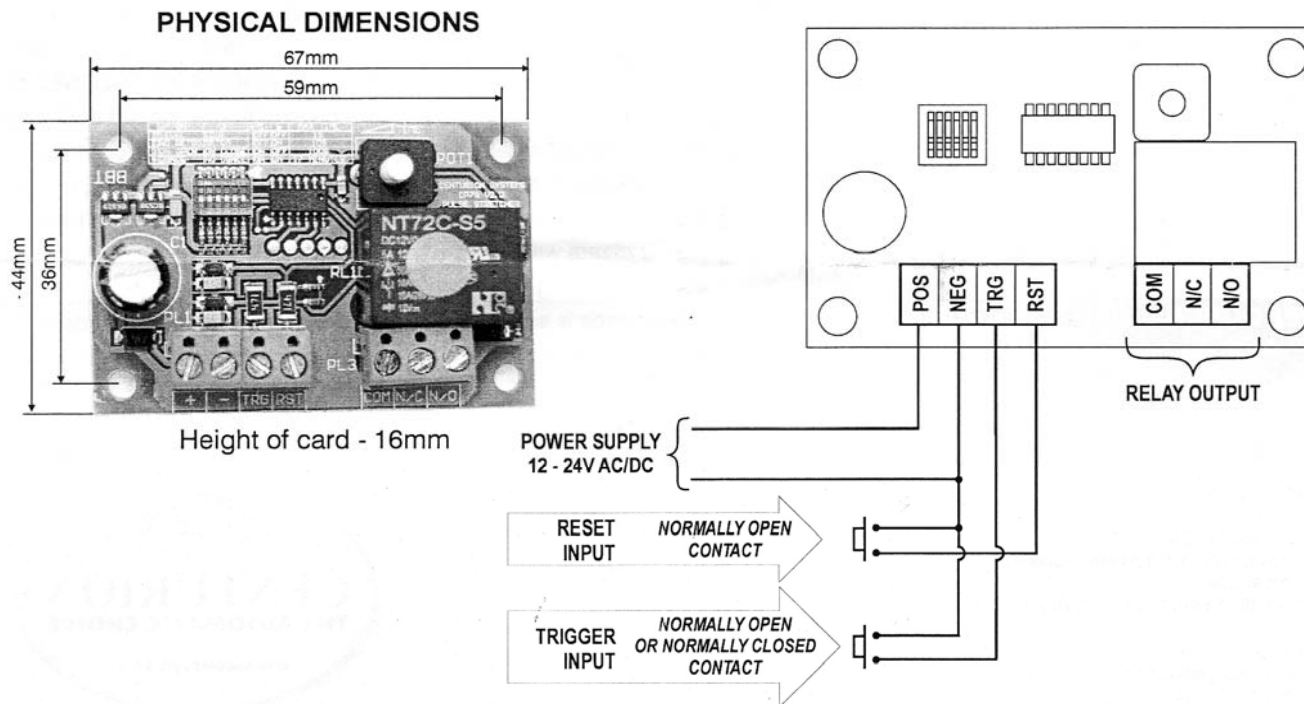## Dual Battery System With Delay & Override Using A Timer Circuit

Having looked at a number of Dual Battery setups I decided to use Ken Thackwray's "less simple" Dual Battery System.

The main difference between his system and the system I have installed is that he used a Delay circuit and I have used a Timer circuit.

When I went to get a delay circuit I found that most smaller retail security stores did not have anything. I eventually went to a company that sold security and gate automation products to installers and was sold a Centurion CP79 Universal Pulse Stretcher Card which I was assured would do the job.

PHYSICAL DIMENSIONS

67mm

59mm

44mm

36mm

NT72C-S5

Height of card - 16mm

POWER SUPPLY
12 - 24V AC/DC

RESET INPUT   NORMALLY OPEN CONTACT

TRIGGER INPUT   NORMALLY OPEN OR NORMALLY CLOSED CONTACT

POS   NEG   TRG   RST   COM   N/C   N/O

RELAY OUTPUT

When I tested the card I found that it worked exactly opposite to the card that Ken used in that the relay activated for the set time and the trigger needed to switch to negative.

I overcame these problems by installing a relay in series with the card. As this card is made locally by Centurion Systems for use with gate automation I imagine it should be widely available. The rest of the installation was basically the same as Ken's. The components for the Delay Circuit and Bypass cost under R200.

Components For Delay & Bypass

- Centurion CP79 Universal Pulse Stretcher Card
- Relay (Double Pole 5A)
- LED
- Resistor (1k)
- Veroboard (to mount relay)
- Mini Rocker Switch
- Connector Strip
- Box (114 x 74 x 52mm)
- Cabtyre
- Lugs
- Cable ties

Installation

1. It is important to find a 12v source that is only live when the ignition is on and not when in the "accessory" position. Also as I intended to fit the box under the dashboard it was preferable to find a source under the dash. In my case (Colt Rodeo) I took the power from the interior fan.

2. I measured the current that the Cole Hersee Solenoid drew. This was less than 0,75 amps. The relay on the CP79 board, the double pole relay and the mini rocker switch were all rated at 5A so these were all more than adequate to operate the Cole Hersee.

3. I cut a small piece of Veroboard (obtainable from an electronics shop) to mount the relay. I soldered the relay and connecting wires. A 12v double pole relay from a motor spares shop with spade terminals could also be used but would be considerably more expensive.

4. Holes were drilled on the side of the box to fix the connector block and to feed wires to it. The CP79 and relay boards were secured to the box with mirror tape and the wiring completed.

5. I put switches 5 & 6 on and tested the delay circuit. I adjusted the pot on the CP79 board for a delay of 15 minutes.

6. I then removed one of the blank switch panels from the dash and cut out a slot for the bypass switch and drilled a hole for the LED. I soldered the switch, LED & resistor and soldered a length of thin 3-core cabtyre to connect these to the box.

7. The CP79 board needs a constant 12v to operate. In standby mode it only draws a couple of milliamps so it will never flatten the main battery. For simplicity I used thin cabtyre to connect the positive, negative & solenoid connections from the box to the Cole Hersee.

8. Finally I connected the wire from the ignition, the override switch assembly and Cole Hersee solenoid to the box and secured the box under the dash using cable ties. I also attached an ECHO Dual Battery Monitor.

For simplicity and clarity (I hope), I have shown all the wires in the diagram below. The parts described above are shown within dotted lines.

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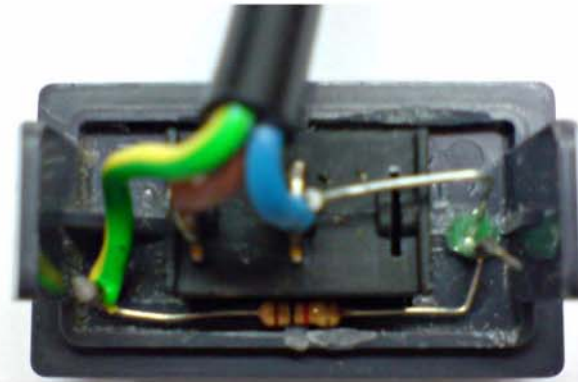
DUAL BATTERY SYSTEM WITH DELAY & OVERRIDE
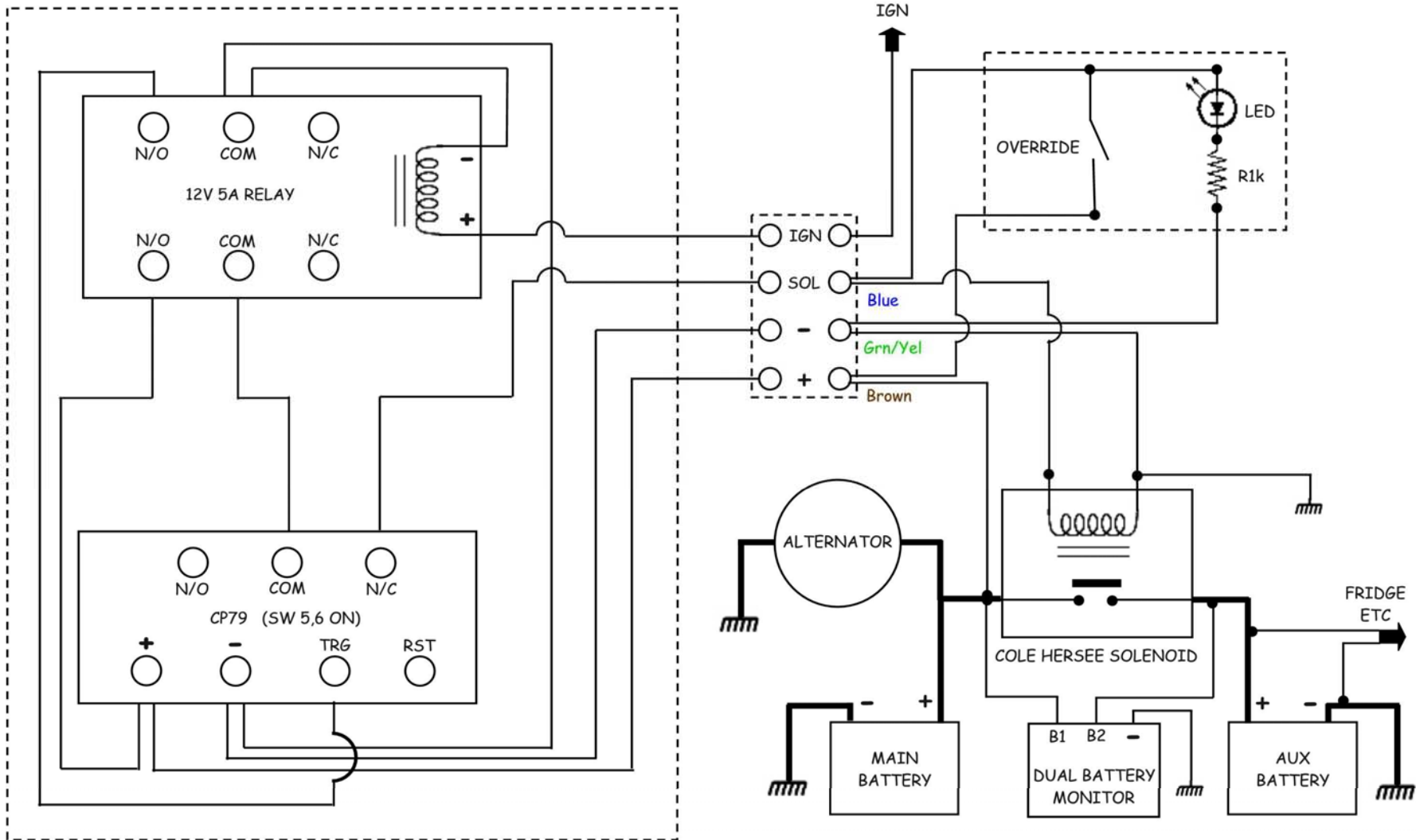
CP79 Board & Relay

Connector Strip

Switch Panel Front

Switch Panel Rear