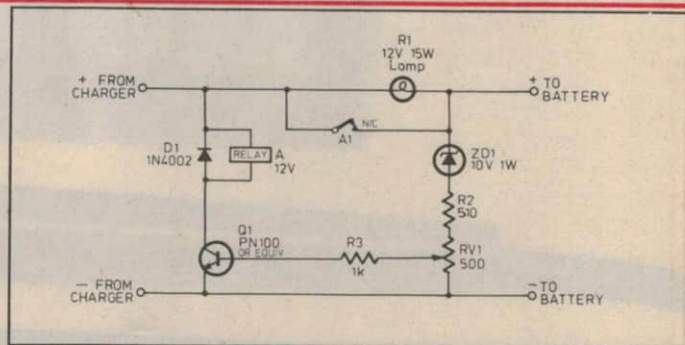


Simple solar cell voltage regulator

This unit was constructed two years ago as a cheap means of limiting the current supplied by a solar panel to a car battery. It has operated without any trouble since that time.

When the battery voltage is below about 12.8V, the charging current passes through the closed contacts of the relay, giving the full supply available from the solar cell. When the battery voltage rises to about 13.8V, the zener diode conducts and supplies base current to Q1, switching on Q1 and energising the relay. The relay contacts therefore open and the charging current now passes through the 12V 15W lamp, R1. This allows only a trickle charge to the battery and is partly self-regulating — the higher the current the higher the lamp resistance and vice versa. When a load is applied to the battery, the battery voltage drops below 12.8V, the zener diode stops conducting and Q1 switches off. The relay is then de-energised and the



relay contacts close, giving full charge to the battery. RV1 is adjusted to give the correct change-over voltage.

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