

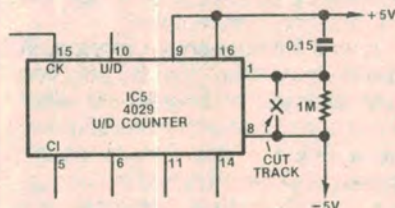
Circuit & Design Ideas

Interesting circuit ideas from readers and technical literature. While this material has been checked as far as possible for feasibility, the circuits have not been built and tested by us. As a consequence, we cannot accept responsibility, enter into correspondence or provide constructional details.

Programmed switch-on for IR remote control

In the original article on the Stereo Infrared Remote Volume Control (October, 1979), it was suggested that in view of its very low power consumption it be left permanently switched-on. For this reason the power switch was deliberately omitted. However some constructors prefer to switch the unit off when not in use, and have found that at switch-on the unit can set itself to any random audio level (even to full volume). A very simple modification can solve this problem.

All that is needed is to momentarily apply a high signal to pin 1, the preset



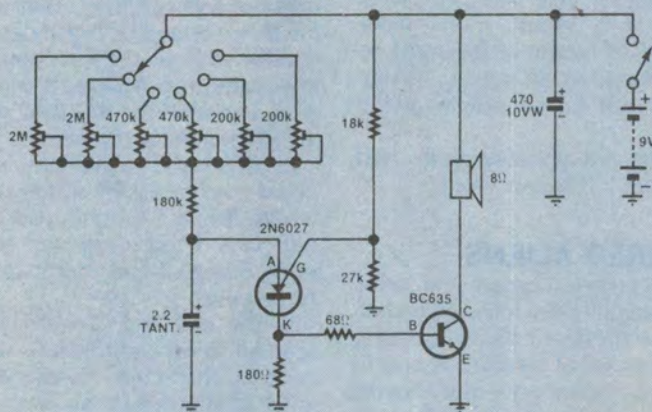
enable input of the 4029 Presettable Up/Down Counter (IC5), at switch-on. This is easily accomplished by cutting the track to pin 1 and bridging the cut with a 1MΩ resistor. A 0.15µF capacitor is then connected between pins 1 and 16 (adjacent) of IC5.

As pin 16 is connected to the +5V rail, pin 1 will be "high" at switch-on, but will revert to "low" as the 0.15µF capacitor is charged via the 1MΩ resistor (the other end of which is connected to the -5V rail).

Thus, at switch-on the 4029 counter is preset to audio level 2 (due to the switching-on sequence of IC3), and after a delay of about a quarter-second the 4029 counter functions normally, with up/down control of audio level being available from the infrared transmitter.

J. Forest,
Corrimal, NSW.

Resuscitation training aid



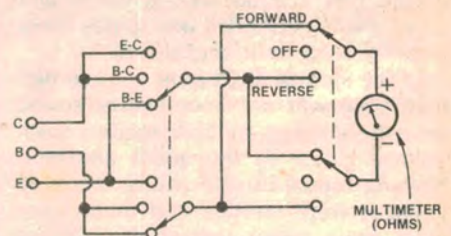
The simple Metronome described in EA for January 1982 can be adapted as a training aid for students of expired air resuscitation and external cardiac compression. It is important that students become accustomed to using exactly the right rate.

To this end, six trimpots are

substituted for the single rate pot used in the original metronome circuit. This allows the recommended rates for resuscitation and cardiac compression to be preset and selected with a rotay switch.

A. Harvey,
Holland Park, Qld.

Low cost transistor checker



This transistor checker is about as simple as you can get. The circuit uses just two two-pole three-position switches, together with a standard analog multimeter.

The switch selector enables "continuity"/open-circuitry checks between each of the three pairs of transistor electrodes in both the forward and reverse polarity modes. If doubt exists as to the condition of a "used" transistor, performing the same checks on a known "good" transistor of the same type permits comparison of the measured parameters with those of the unknown transistor.

In use, the multimeter is switched to a resistance range, and the transistor parameters measured as desired. Note that in the resistance measuring mode normal analog multimeters produce a negative potential on the positive probe, and a positive potential on the negative probe.

D. Shawcross,
Perth, WA.

Measuring tape speed on cassettes

A precise method of measuring tape speed involves the time taken for a known length of tape to pass the head. For example, a 10 metre length of tape takes almost exactly 210 seconds (209.97s, actually) to pass the head at the designated cassette tape speed of 47.625mm/sec.

Extract 10 metres of tape from a standard cassette and mark this distance from the end of the leader with an additional piece of leader inserted to make a break in any recording. Now record 1kHz tone which can be checked on playback with a stopwatch to find its exact duration and ultimately, by calculation, the tape speed.

R. Caddy,
Kensington, NSW.