

Make Yourself This Level Indicator For a Tape Recorder

Nitin Mehrotra

Most tape recorders and a few cassette decks do have built-in sound level indicators. But what do you do when your machine does not have one! Live with overmodulated and distorted recording due to the recording level being set too high or with hardly audible sound since you were over-cautious during recording, I suppose. So did I until one day in anger and frustration I sat down and built myself this rugged and extremely versatile level indicator.

Fig. 1 shows the circuit diagram of an indicator comprising transistors and an incandescent lamp. The lamp glows as long as the sound level does not exceed a certain value which can be adjusted. If the voltage exceeds this value ($> 250\text{mV}$), even if only for a brief moment, the monostable multivibrator is triggered and the lamp is extinguished for a short time. It remains dark until the multivibrator returns to its original position after the delay period (of approximately 0.3 sec.) has elapsed. This lengthening of the pulse is necessary to indicate also brief excess level peaks.

Fig. 2 gives another version of the indicator's circuit. The

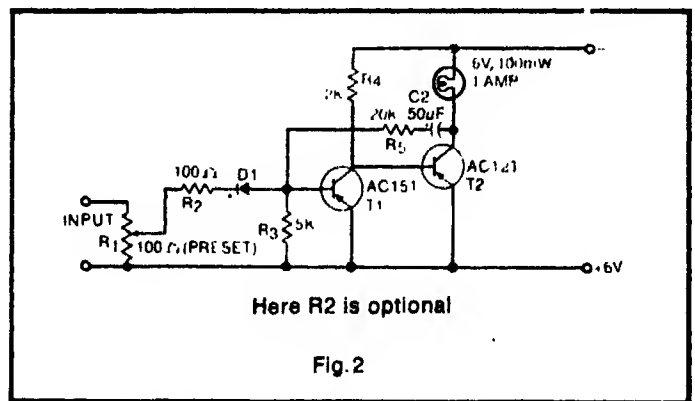
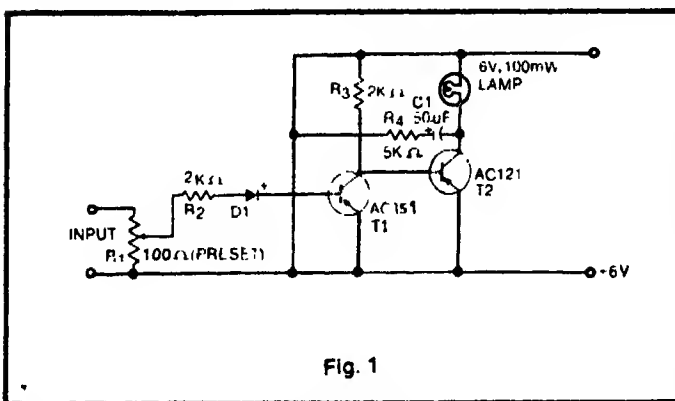
to 300 mV so that R 1 should be slightly less than max. However, if you have a head which needs a higher level and saturates at a higher voltage, then decrease R 1 so that the indicator shows over-driving at a higher level.

As can be seen in both the cases, only intermediate values are indicated.

To use the indicator, connect it after the recording amplifier. In most of the cassette recorders the head is connected to the amplifier via a low-value capacitor. Connect the live input of the indicator *before* the capacitor.

Put the recorder in the record mode and when the source signal starts do the following procedure: If you are using circuit shown in Fig. 1, adjust the level control on your recorder so that the light stays on nearly all the time. But make sure that the level set is not very low and that increasing it causes the lamp to go out frequently. If you are using the circuit shown in Fig. 2, adjust the level control so that the lamp is off, but increasing the level at once causes it to come on frequently.

The whole unit can be made very compact. Built on a 3.8



lamp here stays off as long as the signal level does not exceed the critical value. When the input exceeds the critical level the lamp comes on.

The potentiometer R 1 has to be adjusted only once, and that is after installation. R 1 is provided to help the cassette owner adjust the indicator for his personal machine. In most machines the head saturates at a level around 250mV

cm X 2.5 cm perforated board; mine packs into the cassette recorder itself. The lamp is mounted on the front plate through a hole. A standard lamp mounting can be used. The power can be derived from the cassette recorder's power supply itself.

The diode D 1 can be any small-signal diode, as used in crystal detector sets etc. □