

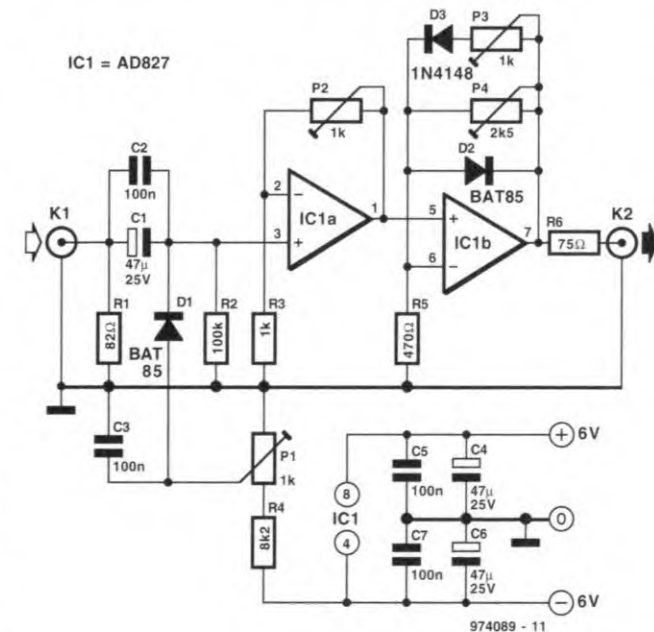
video-contrast expander

It may happen that a video recording is a little too dark so that certain nuances disappear and the picture is no longer clear. The expander may rectify this to some extent by increasing the contrast in the dark passages. Provided that the circuit is set up correctly, the nominal black and white levels are not affected.

The circuit has four calibration points, which make the use of an oscilloscope a must. It is, of course, important that the existing black and white levels are retained and that the synchronization remains fully functional.

The circuit has a few drawbacks: (a) owing to the added amplification, the level of the colour burst changes, which requires the saturation to be readjusted; (b) the contrast in bright images diminishes; and (c) there is a risk that when the dark levels are amplified too much noise becomes visible.

The input signal at K_1 is decou-



pled by C_1 , C_2 and R_2 and then amplified by IC_{1a} . Diode D_1 , in con-

junction with R_4 and P_1 , ensures that the earth level is used as reference for

the black level. The output level is set with P_2 .

Diode D_3 in series with P_3 in the feedback loop of IC_{1b} holds the white level at 100%. This ensures that small signal levels (dark levels) are amplified in accordance with the setting of P_4 , while larger signals are also affected by the setting of P_3 .

Diode D_2 limits the level of the sync signals which, owing to the chosen amplification, may become too high.

Experimenters may replace D_3 by one or two Type BAT85 diodes or a simple germanium diode, which, of course, changes the operating characteristic of the circuit.

Note that the signal input must give a level of $1 V_{pp}$ across 75Ω – no more, no less. Remember that 30% of the available space must be reserved for the sync signals.

The circuit draws a current of ± 15 mA.

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