

STOP-WATCH

Here is a simple circuit which can be used as an accurate stop-watch to count up to 100 seconds with a resolution of 0.01 second or up to 1000 seconds with a resolution of 0.1 second. This stop-watch can be used for sports and similar other activities.

A 1MHz crystal generates stable frequency which is divided by two stages of 74390 ICs (dual decade counter) and another stage employing 7490 (decade

counter) IC to obtain a final frequency of 100 Hz or 10 Hz. Due to the use of crystal, the final frequency is very accurate.

The output of IC4 (7490) is counted and displayed using IC5 74C926 (4-digit counter with multiplexed 7-segment LED driver). Due to multiplexed display the power consumption is very low. Switch S2 (2-pole, 2-way) is used to select appropriate input frequency and corresponding decimal point position to display up to

either 99.99 seconds or 999.9 seconds
maximum count.

For proper operation, first press switch S3 (reset) and then operate switch S2, according to the resolution/range desired (0.1 sec. or 0.01 sec.)/(100 seconds or 1000 seconds). Now to start counting, press switch S1. To stop counting, press switch S1 again. The counting will stop and display will show the correct time elapsed since the start of counting.

