

Heart rate monitor disappointment:

HEART RATE MONITOR: I am disappointed with the Heart Rate Monitor.

It is not that it just does not work — it is unreliable in every phase. For instance, I will set the calibration to the correct figure one day and the next it may be 20 points out either way.

At one stage I thought I was getting a reliable pulse on the annunciator by putting my thumb over the LED and the light receiver but next time I try it is unreliable. I got it to read 50 when my pulse is 50 and I go for a run and it reads 193 and I know my pulse can not go over 120 in those circumstances.

I pressed the box into my wrist to get a larger pulse signal and thought the annunciator was at last following the pulse. All this was after I had put a $.01\mu\text{F}$ condenser across the input as I thought to eliminate noise but then I lengthened the leads also as to strap the infrared diode and the light receiver to my wrist and hold the box

in the same hand but again I could not reproduce the same results.

There is intermittent action of the annunciator as if the input to the first IC was indeterminate in height perhaps sometimes too close to the top rail or too close to the bottom rail. At other times the second and third ICs etc can be seen reliably flipping up and down but not for long.

First, it needs more reliable calibration. Second, it needs more reliable input. Third, the whole concept is wrong. It should count 15 seconds and multiply by four or count for seven and a half seconds and multiply by eight.

Fourth, it appears to need either zener control of voltage or a temperature control or both. Without those I can only abandon it to the junk heap and it is not as though I did not have enough instruments to measure it with. All voltages appear correct and a check of the major IC

does prove it measures 200mV correctly. It does read something but any accuracy is totally non-existent. It cannot perform the function I wanted of it which was to record my maximum pulse while running uphill. (F.F., Dundas, NSW.)

● Since you cannot get the heart rate monitor to stay at the correct calibration number the logical place to start fault-finding is at the calibration circuit. This circuit outputs a series of 0.2 second pulses which should not vary in length. Likewise the output voltage of the pulses should not vary in magnitude. If they do, which is suggested by the drift in the display calibration, then the timing components and S1 should be checked thoroughly. If you have used sockets for the integrated circuits then these should probably be discarded and the ICs soldered directly to the PCB since bad contacts in the sockets housing IC2 could cause a drift problem.