Industrial Row, Troy, Michigan 48084, Telephone (313) 576-1200. The various models range in direct factory purchase prices from \$180 to \$260, excluding transportation costs and accessory side panels. A brochure is also available from the manufacturer.

A system for presenting visual indication of heart rate

K. R. ZURN, *LEHIGH VALLEY ELECTRONICS, Fogelsville, Pennsylvania 18051*

The display used in this system gives a visual indication and is similar in concept to a normal mercury thermometer. That is to say, as the S's heart rate increases, more lamps will become lit. If a digital printout

of heart rate is also required, a method has been described in a previous note.¹

The system described in this note was constructed with standard off-the-shelf modules and interconnected with programming leads which require no soldering.² Its operation is as follows:

The output of a cardiometer is applied to the six adjustable Schmitt triggers. A level converter may be required if the output of the cardiometer does not fall within one of the two ranges of the adjustable Schmitt triggers, specifically -1 to -11 V or -10 to -110 V. Each of these Schmitt triggers is set to activate a specific heart rate. The output of the Schmitt trigger is then applied to a power driver to light a lamp.

An example is shown in Fig. 1. Here the

S's heart rate is assumed to be 87 bpm. The Schmitt triggers (\$69 each) have been set to activate in increments of 5 bpm and within a range of 70 to 95 bpm. Two indicator panels are used, one for the S and one for the E, who is assumed to be at some remote location, such as at a polygraph. This same approach may be used with smaller or larger increments, or more levels may be used by including additional adjustable Schmitt triggers and indicator lamps.

NOTES

1. Zurn, K. R. An automatic system for measuring average R-R interval. *Behavior Methods & Instrumentation*, 1970, 2, 92-93.

2. Manufactured by Lehigh Valley Electronics, Box 125, Fogelsville, Pennsylvania 18051.

Fig. 1. System wiring diagram.