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A Digital Clock/Thermometer With Storage Capabilities

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SENIOR DESIGN PROJECT

A DIGITAL CLOCK/THERMOMETER
WITH STORAGE CAPABILITIES

SUBMITTED TO THE
PURDUE UNIVERSITY FACULTY

BY HOWARD LORENZ

4-23-76

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ABSTRACT

A National Semiconductor MM5311 is employed to generate the appropriate time function for the clock portion of the unit. This will also provide the necessary code for the memory. The memory consists of four 256 x 1 bit bipolar rams giving 64, 16 bit words which can be accessed manually for readout or automatically for comparisons and updating. Locations of four words are incremented every twenty-four hours. A series of 5 bit comparators compares the contents of two registers containing previous temperatures and present temperature. The temperature sensor is a National LX 5600H. The signal is amplified and then converted by a Datal ADC-ER-12D dual slope A/D converter. This output is held in latches to drive the display as well as update the register for comparison. Two 74163 counters are used for control counters.