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Darmawaskita et al.

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[54] **TIME-BASED TEMPERATURE SENSOR SYSTEM AND METHOD THEREFOR**

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[58] **Field of Search** 374/170, 171; 377/25, 49; 364/557; 702/130

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[57] **ABSTRACT**

A time-based digital temperature sensing system has a first oscillator which is temperature sensitive. The first oscillator has a temperature coefficient which allows the first oscillator to generate an output signal which varies linearly as a function of temperature. A second oscillator is provided and is used to generates a reference clock signal. The outputs from the first and the second oscillator are coupled to a timer. The timer has a clock input coupled to an output of the second oscillator and an enable input coupled to an output of the first oscillator. From these input signals, the timer generates a number indicative of a length of time the timer is enabled by the first oscillator. The number is proportional to a current temperature of a material that is being monitored by the temperature sensing system.

24 Claims, 2 Drawing Sheets

