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[54] **MICROCONTROLLER POWER-UP DELAY**

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Related U.S. Application Data

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[58] **Field of Search** 395/750, 550; 364/200, 900, 493, 511, 431.11, 707; 731/9.1

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[57] **ABSTRACT**

A microcontroller is adapted, when operating, to execute programs and instructions and, in response, to generate control signals to selectively control external apparatus. The microcontroller includes a power supply for supplying power to the overall device within a predetermined range suitable for its operation, and a clock for supplying a clock frequency to the microcontroller with a stability suitable for precise timing and counting within the device. The microcontroller is selectively reset to prevent it from executing programs and instructions for purposes of generating the control signals, and is maintained in the reset condition despite initiation of a removal from the reset condition, until the power supplied by the power supply is in a predetermined range and the clock frequency supplied by the clock is stable. In this way, no execution by the microcontroller is permitted until device stability is achieved, to prevent errors in execution. In the disclosed embodiment, the reset condition is maintained by a power-up timer and an oscillator start-up timer, each timer having a programmable timeout interval to end the reset condition only when the timeout intervals of both timers have expired.

6 Claims, 10 Drawing Sheets

