

Design and Implementation of a Fan Coil Unit Controller Based on the Duty Ratio Fuzzy Method

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Abstract : A microcontroller-based fan coil unit (FCU) fuzzy controller is designed and implemented in this paper. The controller employs the concept of duty ratio on the electric valve control, which could make full use of the cooling and dehumidifying capacity of the FCU when the valve is off. The traditional control method and its limitations are analyzed. The hardware and software design processes are introduced in detail. The experimental results show that the proposed method is more energy efficient compared to the traditional controlling strategy. Furthermore, a more comfortable room condition could be achieved by the proposed method. The proposed low-cost FCU fuzzy controller deserves to be widely used in engineering applications.

Keywords : fan coil unit, duty ratio, fuzzy controller, experiment

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