

불규칙 외란을 받는 유연한 계에 대한 「모드선택 퍼지제어」

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「Mode Selecting Fuzzy Controller」 to suppress the response of flexible system under irregular disturbance

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Keywords: Fuzzy control(퍼지 제어), Modal analysis(모달 해석), Irregular disturbance(불규칙 외란), Piezo actuator(압전소자 작동기), Flexible structure(유연한 구조체)

Abstract: A fuzzy logic controller design technique is proposed to apply to the control of flexible system under irregular disturbance. The fuzzy rules of 「Mode Selecting Fuzzy Controller」 are constructed using displacement, velocity information and modal characteristics of the system. The frequency information of flexible system is picked up from 「Mode Selecting Unit」 based on Fast-Fourier transform algorithm. Experiment is conducted to verify the proposed theoretical approach. Piezo ceramic and laser accelerometer are used as actuator and sensor in the experiments respectively.

PDP 모듈의 소음 저감

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Noise Reduction of PDP Module

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Key Words : PDP, Circuit noise(회로소음), SMPS, Power MOSFET, Heat sink(방열핀), Condenser, Transforme

Abstract : A PDP(Plasma Display Panel) module consists of a discharge panel, a SMPS for power supply, driving boards for panel control, and a logic board. Driving boards supply high voltage pulses to induce glow discharge in the PDP panel. The electrical pulses excite the circuit elements and subsequently acoustic noises. The main sources of the noise in the circuit are the transformer of SMPS and the power MOSFET of driving boards, and the heat sinks often amplify the noise level. The reduction of the acoustic noises was achieved by modifying both the structural and circuit elements.