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| **Abstract:** |  |
| Abstract— In the case of an ac servo driver, there are needs for both speed/position and direction control. Conventionally, ac servo drives use two-phase motors where the speed/position is controlled by pulse width modulation and the direction change is undertaken by phase reversals. Contrary to the conventional techniques, this paper proposes a phase modulator where the PWM scheme controls both the output voltage and phase angle between two phases. Because of the computation-intensive nature of the scheme, it is implemented with a TMS320C50 digital signal processor. The PWM scheme adopted for the two-phase inverter optimizes the pattern for minimum third harmonic content. The performance of the scheme is tested on a prototype two-phase inverter with a two-phase motor as a load. The experimental waveforms resemble the simulated ones validating the theoretical model of the proposed scheme. | |