Abstract

In this paper, the two-input fuzzy logic controller (FLC) and proportional–integral–derivative (PID) controller for boost converter output-voltage regulation are proposed by using Siemens Programmable Logic Controller (PLC). Here the output voltage has been used as a closed loop feedback to determine the output voltage error (e) and the change in error (Δe) as two inputs to the controller. The elements of the boost converter as inductance and capacitor have been selected to insure continues operating mode (CCM) and low output voltage ripple. The proposal is implemented by using Programmable Logic Controller (PLC) on 150 watts prototype and compare (FLC) with (PID) results. The experimental results show that the FLC has a good output voltage response compare with PID controller response.

References

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PLC Based Implementation of Fuzzy Controller for Boost Converter


**Index Terms**

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**Keywords**

Fuzzy logic controller (FLC); proportional –integral–derivative (PID) controller; Programmable Logic Controller (PLC)