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 (?e) 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

- Leyva-Ramos J. and Morales-Saldaña J. A. Sept 1998. A design criteria for the
- Nik Ismail N. F., I. M., R. B. and D. Johari. 2010. Fuzzy Logic Controller on DC/DC

**Index Terms**

Computer Science  
Circuits And Systems

**Keywords**

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