

# Field Programmable Gate Arrays Based Overcurrent Relays

SUMIT AHUJA\*

LOVE KOTHARI\*

D N VISHWAKARMA\*

S K BALASUBRAMANIAN\*\*

\* Department of Electrical Engineering

\*\* Department of Electronics Engineering

Institute of Technology

Banaras Hindu University

Varanasi – 221005, INDIA

*This Paper presents a novel technique of implementing Overcurrent relays on Field Programmable Gate Arrays (FPGA), which can be used for the protection of distribution lines, large industrial motors and many equipments of the power system. Due to its reconfigurability, it gives an idea to implement many types of relays on the single FPGA board. In case of microprocessor based relays many peripheral devices are require making the operation slower; but in the case of FPGA, the same can be realized with less number of peripherals, thus making the operation faster. The proposed overcurrent relay gives satisfactory results when simulated on the Xilinx FPGA, thus providing the best solution in the existing technologies.*

**Keywords** Overcurrent relay, Relay Protection, Field Programmable Gate Arrays.