

Development of an Application Specific Integrated Circuit for Reduction of Contact Bounce in 3-Phase Contactors

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Abstract:

This paper presents a miniature control device capable of reducing contact bounce in 3-phase contactors. The device is implemented using Alcatel-Mietec 2 μ m integrated circuit technology and operates by controlling the strength of kinetic energy of the field flux by timing the coil energisation periods.

The performance of the device is evaluated through a series of tests with line to line voltages of 75 and 300 volts and a gap-length of 2 mm. On completion of 5000 switching operations, the results suggest that with the appropriate input settings to the control device, it is possible to eliminate contact bounce substantially in all three phases. The mechanical characteristics of the contactor system determine the required setting for zero bounce.

Index Term: ASIC, Contactor Control, Contact Bounce, Erosion

