

Erosion Dependency of 3-Phase Contactor Contacts on Configuration of Loads

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Abstract:

This paper discusses derived expressions for the voltage across non-arcing open contacts of three-phase contactors used with various load configurations from the concept of symmetrical components. The validity of derived relations is examined experimentally. A phase current of 20 A at a line to line voltage of 415 V_{rms} and a gap-length of 2mm on Ag SnO₂ contacts is used for 5000 operations with loads arranged in delta and star. An inspection of SEM photographs demonstrates the dependency of erosion upon load configurations.

Index Term: Symmetrical Components, Load Configurations, Erosion