

Reliability Analysis and Failure Prediction Study of Dynamic Contact Resistance on Contact

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Abstract - In previous research, a new testing instrument for dynamic contact resistance of low capacity contact is developed. And, by means of this testing instrument, we carried on a series of experiments. In the experiments, we tested several types of industrial control relays under different environmental conditions, and accumulated plenty of experimental data. In this paper, our further research mainly focuses on the dynamic changing principle of dynamic contact resistances on contact while time and operation times increase. Several characteristic values are distilled in the experimental data. We analyze these characteristic values using statistic method of time sequence and draw some statistic conclusions. According to these, the reliability analysis and failure prediction method are further discussed.

Keywords - Dynamic Contact Resistance, Testing Instrument, Reliability of Electrical Apparatus