

电机电工

接触器式继电器的可靠性验证试验抽样方案的研究

刘帼巾¹; 陆俭国¹; 赵靖英¹

河北工业大学电器研究所¹

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摘要

为定量分析接触器式继电器的可靠性水平, 借鉴目前国内外标准和可靠性研究成果, 确定了失效率作为它的可靠性特征量; 根据国内接触器式继电器的实际生产水平, 划分了失效率等级作为可靠性指标来确定产品可靠性水平; 为分析接触器式继电器的工作特点和失效模式, 进行多组试验结果表明接触器式继电器接触不良和断开不良的失效模式有偶然失效和永久失效两种表现型式; 不同表现对可靠性的影响不同, 根据可靠性抽样理论, 由操作时间与允许失效数之间的关系推导出可靠性验证试验抽样方案。按照该文的可靠性验证试验抽样方案抽取样品进行检测, 可确定接触器式继电器的可靠性水平。

关键词 [接触器式继电器](#) [可靠性](#) [抽样方案](#) [可靠性指标](#) [控制电器](#)

分类号 [TM58](#)

Study on Sample Plan of Reliability Compliance Test of Contactor Relay

Abstract

In order to analyze reliability level of contactor relay, the fault ratio is considered as the reliability characteristic which is the same as the international and national standards of electrical apparatus. The fault ratio ranks are established as index based on the product level. The operational features and the fault modes of contactor relay are analyzed from the result of experiments. The contactor relay is frequently-operated control electrical apparatus and has two kinds of failures, poor contact and poor break that may happen occasionally or permanently. That may have different effect on its reliability. The sample plan of reliability compliance test is gained from the relation of operation time and the acceptable fault time on base of reliability theory. The sample according to reliability compliance test plan introduced can ensure and measure the reliability level.

Key words [contactor relay](#) [reliability](#) [sample plan](#) [reliability index](#) [control electrical apparatus](#)

DOI:

通讯作者 刘帼巾 liuguojin72@163.com

作者个人主页 刘帼巾 陆俭国 赵靖英

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