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Road vehicles — Durability test method of starter relay for stop and start system

National foreword

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Foreword

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This document was prepared by Technical Committee ISO/TC 22, *Road vehicles*, Subcommittee SC 32, *Electrical and electronic components and general system aspects*.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

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Introduction

A stop and start system requires more frequent engine starting therefore, the starter relay used in such an engine should be durable. Currently, there is no common durability test method for starter relays, and most individual durability test methods of vehicle manufacturers and relay suppliers use actual starter solenoids as electrical loads of the relay. However, heat mass of the starter solenoid is not sufficient, so cooling equipment and/or a longer test cycle time are necessary to prevent starter solenoid damage.

This document provides a test method using a simulated electrical load which can shorten the test period or eliminate cooling equipment.

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INTERNATIONAL STANDARD **ISO 22565:2019(E)**

Road vehicles — Durability test method of starter relay for stop and start system

1 Scope

This document defines the durability test methods of a starter relay for passenger vehicles (12 V) with a stop and start system. It uses a simulated electrical load to represent the starter solenoid.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

3.1
stop and start system
system to stop the engine automatically when its operation is not needed, and to start the engine automatically when its operation is needed

3.2
starter solenoid
mechanical switch equipped with a solenoid that supplies current to the DC motor of the starter motor and/or shifts starter motor pinion to engage the ring gear of internal combustion engine

3.3
starter relay
relay that opens and closes the circuit to the starter solenoid

3.4
simulated load
electric load used as a substitute for the starter solenoid

4 Structure of starting circuit

The starting circuit is shown in the Figure 1. The starter relay opens and closes the circuit to the starter solenoid.

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