IEC 62969-4

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INTERNATIONAL STANDARD

NORME INTERNATIONALE

Semiconductor devices – Semiconductor interface for automotive vehicles – Part 4: Evaluation method of data interface for automotive vehicle sensors

Dispositifs à semiconducteurs – Interface à semiconducteurs pour les véhicules automobiles – Partie 4: Méthode d'évaluation de l'interface de données destinée aux capteurs de véhicules automobiles

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FOREWORD

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International Standard IEC 62969-4 has been prepared by IEC technical committee 47: Semiconductor devices.

The text of this International Standard is based on the following documents:

FDIS	Report on voting
47/2470/FDIS	47/2487/RVD

Full information on the voting for the approval of this International Standard can be found in the report on voting indicated in the above table.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts in the IEC 62969 series, published under the general title *Semiconductor devices – Semiconductor interface for automotive vehicles*, can be found on the IEC website.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "http://webstore.iec.ch" in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

INTRODUCTION

The IEC 62969 series is composed of four parts as follow:

- IEC 62969-1 *Semiconductor devices – Semiconductor interface for automotive vehicles – Part 1: General requirements of power interface for automotive vehicle sensors*
- IEC 62969-2 *Semiconductor devices – Semiconductor interface for automotive vehicles – Part 2: Efficiency evaluation methods of wireless power transmission using resonance for automotive vehicle sensors*
- IEC 62969-3 *Semiconductor devices – Semiconductor interface for automotive vehicles – Part 3: Shock driven piezoelectric energy harvesting for automotive vehicle sensors*
- IEC 62969-4 *Semiconductor devices – Semiconductor interface for automotive vehicles – Part 4: Evaluation method of data interface for automotive vehicle sensors*

The IEC 62969 series covers power and data interfaces for sensors in automotive vehicles. The first part covers general requirements of test conditions such as temperature, humidity, vibration, etc., for automotive sensor power interface. It also includes various electrical performances of power interface such as voltage drop from power source to automotive sensors, noises, voltage level, etc. The second part covers “Efficiency evaluation methods of wireless power transmission using resonance for automotive vehicle sensors “. The third part covers “Shock driven piezoelectric energy harvesting for automotive vehicle sensors”. The fourth part covers “Evaluation methods of data interface for automotive vehicle sensors”.

SEMICONDUCTOR DEVICES – SEMICONDUCTOR INTERFACE FOR AUTOMOTIVE VEHICLES –

Part 4: Evaluation method of data interface for automotive vehicle sensors

1 Scope

This part of IEC 62969 specifies a method of directly fault injection test for automotive semiconductor sensor interface that can be used to support the conformance assurance in the vehicle communications interface.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

There are no normative references in this document.

3 Terms, definitions and abbreviated terms

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

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- IEC Electropedia: available at http://www.electropedia.org/
- ISO Online browsing platform: available at http://www.iso.org/obp

3.1 Terms and definitions

3.1.1
data interface
transfer of data with electrical signal from a sensor source to another ECU in vehicle such as ECU and sensor via cable or electric and/or magnetic fields through air or medium

3.1.2
fault injection
technique for improving the coverage of a test by introducing faults to device under test

3.1.3
disturbance
temporary change of environmental conditions that can cause a fault to the device under test

3.1.4
crosstalk
appearance of undesired energy in a channel, owing to the presence of a signal in another channel, caused by, for example induction, conduction or non-linearity

[SOURCE: IEC 60050-722:1992, 722-15-03]