

# INTERNATIONAL STANDARD



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**Semiconductor devices – Semiconductor interface for automotive vehicles –  
Part 1: General requirements of power interface for automotive vehicle sensors**



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## CONTENTS

FOREWORD.....	3
INTRODUCTION.....	5
1 Scope.....	6
2 Normative references .....	6
3 Terms and definitions .....	7
4 General system .....	8
4.1 General system blocks.....	8
4.2 Classification .....	8
4.2.1 Sensors in automotive vehicles.....	8
4.2.2 Power sources.....	9
4.3 Data interface .....	10
4.3.2 Reset.....	10
4.3.3 Monitoring .....	10
5 Environmental conditions and requirements.....	10
5.1 General.....	10
5.2 Test conditions and items .....	10
5.2.1 General .....	10
5.2.2 Temperature range .....	11
5.2.3 Humidity .....	11
5.2.4 Damp heat.....	11
5.2.5 Temperature cycling .....	11
5.2.6 Mechanical impact and vibration.....	12
5.2.7 EMC .....	12
5.2.8 IP ratings.....	12
5.3 Test setup.....	12
6 Power interfaces and checking items .....	13
6.1 Input voltage level.....	13
6.2 Main error sources.....	14
6.2.1 AC noise.....	14
6.2.2 Voltage drop.....	14
6.3 Redundancy of power interface.....	14
Annex A (informative) General description of power interface for automotive vehicle sensors .....	15
Bibliography.....	16
Figure 1 – Power supply chains to the vehicle sensors .....	8
Figure 2 – Example of test conditions and items .....	10
Figure 3 – Test setup for checking the power level to sensors .....	13
Figure 4 – Checking input voltage level to sensors (12 V sensors).....	13
Figure A.1 – Sensor-based system in automotive vehicles .....	15
Table 1 – Sensors for automotive vehicles.....	9
Table 2 – Power sources to sensors in automotive vehicles .....	9

## INTERNATIONAL ELECTROTECHNICAL COMMISSION

SEMICONDUCTOR DEVICES –  
SEMICONDUCTOR INTERFACE FOR AUTOMOTIVE VEHICLES –

**Part 1: General requirements of power interface  
for automotive vehicle sensors**

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

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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 the 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

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## INTRODUCTION

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

- 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 methods 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. This part 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 1: General requirements of power interface for automotive vehicle sensors

### 1 Scope

This part of IEC 62969 provides general requirements for performance evaluations and environmental conditions for the power interface of automotive vehicle sensors. For performance evaluations, various electrical performances such as voltage drop from power source to automotive sensors, AC noises and voltage level are included. For environmental conditions, various test conditions such as temperature, humidity and vibration are included. In addition, terms, definitions, symbols and configurations are covered in this part.

NOTE Additional information on power interface for automotive vehicle sensors is provided in Annex A.

### 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.

IEC 60068-2-1, *Environmental testing – Part 2-1: Tests – Test A: Cold*

IEC 60068-2-2, *Environmental testing – Part 2-2: Tests – Test B: Dry heat*

IEC 60068-2-14, *Environmental testing – Part 2-14: Tests – Test N: Change of temperature*

IEC 60068-2-30, *Environmental testing – Part 2-30: Tests – Test Db: Damp heat, cyclic (12 h + 12 h cycle)*

IEC 60529, *Degrees of protection provided by enclosures (IP Code)*

IEC 60721 (all parts), *Classification of environmental conditions*

IEC 60749-10, *Semiconductor devices – Mechanical and climatic test methods – Part 10: Mechanical shock*

IEC 60749-12, *Semiconductor devices – Mechanical and climatic test methods – Part 12: Vibration, variable frequency*

IEC 61851-1, *Electric vehicle conductive charging system – Part 1: General requirements*

IEC 61967-1, *Integrated circuits – Measurement of electromagnetic emissions, 150 kHz to 1 GHz – Part 1: General conditions and definitions*

IEC 61967-2, *Integrated circuits – Measurement of electromagnetic emissions, 150 kHz to 1 GHz – Part 2: Measurement of radiated emissions – TEM cell and wideband TEM cell method*