

Third edition
2023-06

Road vehicles — Test methods for electrical disturbances from electrostatic discharge

*Véhicules routiers — Méthodes d'essai des perturbations électriques
provenant de décharges électrostatiques*



Reference number
ISO 10605:2023(E)

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Published in Switzerland

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

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

This third edition cancels and replaces the second edition (ISO 10605:2008), which has been technically revised. It also incorporates the Amendment ISO 10605:2008/Amd 1 2014 and the Technical Corrigendum ISO 10605:2008/Cor 1:2010.

The main changes are as follows:

- introduction of alternative test set-up with field coupling plane for direct and indirect discharges on component (powered-up test);
- minimum number of discharges changed from 50 to 10 for indirect discharge on component (powered-up test);
- interval between successive single discharges changed from 50 ms to 1 s for indirect discharge on component (powered-up test);
- addition of a ground connection for discharges on DUT pins for component packaging and handling test method (unpowered test);
- optional test set-up and procedure for electronic modules (powered-up test) moved from Annex to main body;
- addition of new [Annex G](#).

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.

Introduction

The electrostatic discharge, due to former charge build-ups generated, for example, when moving about inside a vehicle or getting out of it, has assumed greater significance with the increase of vehicle electronic modules. Tests simulating the electrostatic discharge of humans, in common use by various industries, were examined and it was determined that they were not fully applicable to the automotive environment. As a consequence, tests tailored to the automotive environment were developed.

Tests that simulate an electrostatic discharge (ESD) into a vehicle electrical system are based on the human ESD model. Sensitive electrical devices can be adversely affected by energy either coupled or radiated from electrostatic discharges.

This document describes ESD tests that are applicable to both automotive electronic modules and vehicles.