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Road vehicles — Electrical disturbances from conduction and coupling —

Part 1:
Vocabulary and general considerations

Véhicules routiers — Perturbations électriques par conduction et par couplage — ~~**Partie 1: Définitions et généralités**~~

Partie 1: Vocabulaire et généralités

FDIS stage

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: + 41 22 749 01 11

~~Fax: +41 22 749 09 47~~

~~Email~~E-mail: copyright@iso.org
Website: www.iso.org

Published in Switzerland

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Foreword

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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~~document 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).

Field Code Changed

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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 fourth edition cancels and replaces the third edition (ISO 7637-1:2015), which has been technically revised.

The main changes are as follows:

— ~~—~~addition of ISO/TS 7637-4 in general aim and practical use;

— ~~—~~addition of supply voltage and tolerances for high voltage electrical systems.

A list of all parts in the ISO 7637 series can be found on the ISO website.

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

Electrical and radio-frequency disturbances occur during normal operation of many items of motor vehicle equipment. They are generated over a wide frequency range and can be distributed to on-board electronic devices and systems by conduction, coupling or radiation.

In recent years, an increasing number of electronic devices for controlling, monitoring and displaying a variety of functions have been introduced into vehicle designs. It is necessary to consider the electrical and electromagnetic environment in which these devices operate and, in particular, the disturbances generated in the vehicle electrical system itself. Such disturbances can cause degradation (temporary malfunction or even permanent damage) of the electronic equipment. Moreover, "worst-case" situations are usually those resulting from disturbances generated inside the vehicle by, for example, ignition systems, generator and alternator systems, electric motors and actuators.

Annex A~~Annex A~~ specifies a general method for function performance status classification (FPSC). Typical severity levels are included in an annex of each of the other parts of the ISO 7637 series.

While narrowband signals generated on or outside the vehicle (by broadcasting and radio-transmitters) can also affect the performance of electronic devices, and recognizing that protection from such potential disturbances has to be considered as part of total system certification, these matters are nevertheless outside the scope of the ISO 7637 series and are not covered by it.

ISO 11451 and ISO 11452 specify test methods for immunity to radiated disturbances for vehicles and for components, respectively. ISO 10605 specifies test methods for immunity to electrostatic discharge (ESD) for vehicle and for components.