INTERNATIONAL STANDARD

ISO 7637-3

Second edition
2007-07-01

Road vehicles — Electrical disturbances from conduction and coupling —

Part 3: Electrical transient transmission by capacitive and inductive coupling via lines other than supply lines

Véhicules routiers — Perturbations électriques par conduction et par couplage —

Partie 3: Transmission des perturbations électriques par couplage capacitif ou inductif le long des lignes autres que les lignes d'alimentation

Reference number
ISO 7637-3:2007(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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 7637-3 was prepared by Technical Committee ISO/TC 22, *Road vehicles*, Subcommittee SC 3, *Electrical and electronic equipment*.

This second edition cancels and replaces the first edition (ISO 7637-3:1995), which has been technically revised. It also incorporates the Technical Corrigendum ISO 7637-3:1995/Cor.1:1995.

ISO 7637 consists of the following parts, under the general title *Road vehicles — Electrical disturbances from conduction and coupling*:

— *Part 1: Definitions and general considerations*

— *Part 2: Electrical transient conduction along supply lines only*

— *Part 3: Electrical transient transmission by capacitive and inductive coupling via lines other than supply lines*

Introduction

Experience collected over a long period of immunity testing of instruments, equipment and devices under test (DUTs) shows that a test simulating transient coupling phenomena is needed for a sufficient coverage of the wide range of electric and electromagnetic interferences. The knowledge of these facts is common among electomagnetic conductivity (EMC) experts, and many companies have developed such coupling tests.

The fast transient test uses bursts composed of a number of fast transients, which are coupled into lines of electronic equipment, in particular input/output (I/O) lines. The fast rise time, the repetition rate and the low energy of the fast transient bursts are significant to the test.

The slow transient test uses a single pulse similar to that used for conducted transient, applied a number of times to the DUT.

During system development, the production wiring harness is not available and the vehicle's electrical noises are not known. The test shall therefore be performed with the worst case situation, which is represented by the capacitive and inductive coupling described in this part of ISO 7637.