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2004-09-15

**Road vehicles — Electrical disturbances
from conduction and coupling —**

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

*Véhicules routiers — Perturbations électriques par conduction et par
couplage —*

*Partie 2: Transmission des perturbations électriques transitoires par
conduction uniquement le long des lignes d'alimentation*



Reference number
ISO 7637-2:2004(E)

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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 7637-2 was prepared by Technical Committee ISO/TC 22, *Road vehicles*, Subcommittee SC 3, *Electrical and electronic equipment*.

This second edition of ISO 7637-2 cancels and replaces ISO 7637-1:1990 and ISO 7637-2:1990, of which it constitutes a technical revision. Note that ISO 7637-1:2002 cancelled and replaced ISO 7637-0:1990.

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: Vehicles with nominal 12 V or 24 V supply voltage — Electrical transient transmission by capacitive and inductive coupling via lines other than supply lines*

This corrected version of ISO 7637-2:2004 incorporates the following corrections.

- In Table 4, the value for the parameter t_r has been corrected from " $\left(10 \begin{smallmatrix} 0 \\ -0,5 \end{smallmatrix}\right) \mu\text{s}$ " to " $\left(1 \begin{smallmatrix} 0 \\ -0,5 \end{smallmatrix}\right) \mu\text{s}$ ".
- Some typographical corrections have been made.

Road vehicles — Electrical disturbances from conduction and coupling —

Part 2: Electrical transient conduction along supply lines only

1 Scope

This part of ISO 7637 specifies bench tests for testing the compatibility to conducted electrical transients of equipment installed on passenger cars and light commercial vehicles fitted with a 12 V electrical system or commercial vehicles fitted with a 24 V electrical system — for both injection and the measurement of transients. Failure mode severity classification for immunity to transients is also given. It is applicable to these types of road vehicle, independent of the propulsion system (e.g. spark ignition or diesel engine, or electric motor).

2 Normative references

The following referenced documents are indispensable for the application 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.

ISO 7637-1:2002, *Road vehicles — Electrical disturbances from conduction and coupling — Part 1: Definitions and general considerations*

ISO 8854:1988, *Road vehicles — Alternators with regulators — Test methods and general requirements*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 7637-1 apply.

4 Test procedure

4.1 General

These tests for measuring the transient emission on supply lines and the immunity of devices against such transients are called “bench tests”, made in the laboratory.

The methods, some of which require the use of the artificial network, will provide comparable results between laboratories. They will also give the basis for the development of devices and systems, and may be used during the production phase (see Annex B).

A bench test method for the evaluation of the immunity of a device against supply line transients may be performed by means of a test pulse generator; this may not cover all types of transients which can occur in a vehicle. Therefore, the test pulses described in 5.6 are characteristic of typical pulses.