

INTERNATIONAL STANDARD

NORME INTERNATIONALE



**Measurement procedures of magnetic field levels generated by electronic and electrical equipment in the automotive environment with respect to human exposure –
Part 1: Low-frequency magnetic fields**

**Procédures de mesure de l'exposition humaine aux niveaux de champs magnétiques générés par les accessoires électroniques et électriques dans l'environnement automobile –
Partie 1: Champs magnétiques à basse fréquence**



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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**MEASUREMENT PROCEDURES OF MAGNETIC FIELD LEVELS
GENERATED BY ELECTRONIC AND ELECTRICAL EQUIPMENT IN THE
AUTOMOTIVE ENVIRONMENT WITH RESPECT TO HUMAN EXPOSURE –**

Part 1: Low-frequency magnetic fields

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

Draft	Report on voting
106/575/FDIS	106/579/RVD

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/standardsdev/publications.

A list of all parts in the IEC 62764 series, published under the general title *Measurement procedures of magnetic field levels generated by electronic and electrical equipment in the automotive environment with respect to human exposure*, 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 webstore.iec.ch in the data related to the specific document. At this date, the document will be

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INTRODUCTION

This document specifies a methodology for determining the exposure to multiple magnetic field sources for passenger cars and light commercial vehicles including standardized operating conditions and measurement volumes and/or surfaces.

MEASUREMENT PROCEDURES OF MAGNETIC FIELD LEVELS GENERATED BY ELECTRONIC AND ELECTRICAL EQUIPMENT IN THE AUTOMOTIVE ENVIRONMENT WITH RESPECT TO HUMAN EXPOSURE –

Part 1: Low-frequency magnetic fields

1 Scope

This part of IEC 62764 applies to the assessment of human exposure to low-frequency magnetic fields generated by automotive vehicles. For plug-in vehicles, this includes the electric vehicle supply equipment (EVSE) and associated cables provided by the car manufacturer. This excludes the charging station.

This document specifies the measurement procedure for the evaluation of magnetic field exposures generated by electronic and electrical equipment (excluding intentionally transmitting radio frequency antennas) in selected automotive environments, for passenger cars and commercial vehicles of categories M1 and N1 as defined in ECE/TRANS/WP.29/78/Rev.3 [1]¹, with respect to human exposure. It provides standardized operating conditions and defines recommended measurements to assess compliance with the applicable exposure requirements.

This document covers the frequency range 1 Hz to 100 kHz and is applicable to any type of engine and/or internal energy source.

This document does not include procedures for assessment of human exposure to electromagnetic fields generated by wireless power transfer (WPT) equipment operating in automotive environments. Exposure assessment procedures for WPT equipment are covered by IEC PAS 63184 [2]. Magnetic field transients shorter than 200 ms occurring when electrical functions are activated are not considered in this document.

Abnormal operation of the vehicle or its equipment is not taken into consideration.

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 61786-1, *Measurement of DC magnetic, AC magnetic and AC electric fields from 1 Hz to 100 kHz with regard to exposure of human beings – Part 1: Requirements for measuring instruments*

IEC 62311:2019, *Assessment of electronic and electrical equipment related to human exposure restrictions for electromagnetic fields (0 Hz to 300 GHz)*

¹ Numbers in square brackets refer to the Bibliography.