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# TECHNICAL SPECIFICATION

**Power quality management -**
**Part 4: Harmonic analysis on public electric power network**

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# Power quality management - Part 4: Harmonic analysis on public electric power network

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IEC TS 63222-4 has been prepared by IEC technical committee 8: System aspects of electrical energy supply. It is a Technical Specification.

The text of this Technical Specification is based on the following documents:

| Draft | Report on voting |
|---|---|
| 8/1747/DTS | 8/1791/RVDTS |

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 Technical Specification 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/publications.

A list of all parts in the IEC 63222 series, published under the general title *Power quality management*, can be found on the IEC website.

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– reconfirmed,

– withdrawn, or

– revised.

## 1 Scope

This part of IEC 63222 is a Technical Specification. IEC TS 63222-4 specifies the requirements of the models, methods and procedures for harmonic analysis on the public electric power network. This document is applicable to harmonic analysis up to 40$^{th}$ harmonic at high, medium and low voltage of the public electric power network with nominal frequency of 50 Hz or 60 Hz.

NOTE 1 The boundaries between the various voltage levels can be different in different countries/regions. In this document, the following terms for system nominal voltage $U_N$ are used:

– Low voltage (LV) refers to $U_N \leq 1$ kV;

– Medium voltage (MV) refers to 1 kV < $U_N \leq 35$ kV;

– High voltage (HV) refers to 35 kV < $U_N \leq 230$ kV.

NOTE 2 Because of existing network structures, the boundary between medium and high voltage can be different in some countries/regions.

## 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 TR 61000-3-6:2008, *Electromagnetic compatibility (EMC) - Part 3-6: Limits - Assessment of emission limits for the connection of distorting installations to MV, HV and EHV power systems*

## 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

– IEC Electropedia: available at https://www.electropedia.org/

– ISO Online browsing platform: available at https://www.iso.org/obp

**3.1**
**harmonic order**
***h***
integral number given by the ratio of the frequency of a harmonic to the fundamental frequency

[SOURCE: IEC 60050-161:1990, 161-02-19]

**3.2**
**harmonic frequency**
***f***
frequency which is an integer multiple greater than one of the fundamental frequency or of the reference fundamental frequency

[SOURCE: IEC 60050-551-20:2001, 551-20-05]