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INTERNATIONAL STANDARD

**Plugs and socket-outlets for household and similar purposes -
Part 3-2: Particular requirements for accessories incorporating electronic components to perform additional functions**

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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Plugs and socket-outlets for household and similar purposes - Part 3-2: Particular requirements for accessories incorporating electronic components to perform additional functions

FOREWORD

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IEC 60884-3-2 has been prepared by subcommittee 23B: Plugs, socket-outlets and switches, of IEC technical committee 23: Electrical accessories. It is an International Standard.

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

Draft	Report on voting
23B/1606/FDIS	23B/1609/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/publications.

This document shall be used in conjunction with IEC 60884-1:2022.

This document supplements or modifies the corresponding clauses in IEC 60884-1, so as to convert that publication into the IEC International Standard: Particular requirements for accessories incorporating electronic components to perform additional functions.

Where this document states "addition", "modification" or "replacement", the relevant requirement, test specifications or explanatory matter in IEC 60884-1 shall be adapted accordingly.

Subclauses, figures, tables or notes which are additional to those in IEC 60884-1 are numbered starting from 101. Additional annexes are lettered starting from AA.

A list of all parts in the IEC 60884 series, published under the general title *Plugs and socket-outlets for household and similar purposes*, 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

– reconfirmed,
– withdrawn, or
– revised.

INTRODUCTION

Standard plugs and socket-outlets are now available with various additional features such as Wi-Fi extenders, remote switching, energy saving, etc. For the purposes of this document, these features are called additional functions.

This part of the IEC 60884 series provides particular requirements for plugs and socket-outlets which incorporate electronic components for the purpose of providing additional functions.

The additional functions are categorised into 3 groups:

– additional functions that control the output of the accessory (these products are often called “smart sockets”, “smart socket-outlets” or “smart plugs”);

– additional functions being powered by the accessory which do not control the output;

– additional functions that have protective means (e.g. overvoltage protection) other than Residual Current Devices.

The requirements that are common to all three categories are given in the main part of this document. Specific requirements are given in Annex AA to Annex CC.

This part does not address additional functions that have already been covered by other parts of the IEC 60884 series, for example, socket-outlets incorporating USB power supply which are covered by IEC 60884-3-1.

It is recognised that provision of a dimming function in fixed and portable socket-outlets poses a considerable safety risk to the loads that can be connected to a socket-outlet. Therefore, provision should not be made for dimming function in fixed and portable socket-outlets.

1 Scope

IEC 60884-1:2022, Clause 1 is applicable except as follows:

Replace the first paragraph by the following:

This part of IEC 60884 applies to plugs and fixed or portable socket-outlets for AC only, incorporating electronic components to perform additional functions, with or without earthing contact, with a rated voltage greater than 50 V but not exceeding 440 V and a rated current not exceeding 32 A, intended for household and similar purposes, for use either indoors or outdoors.

This document covers safety and Electromagnetic Compatibility (EMC) requirements for plugs and socket-outlets incorporating electronic components to perform additional functions.

Addition after the third paragraph:

The rated current is limited to 16 A maximum for accessories incorporating electronic components which control the output.

Replace the fourth paragraph by the following:

This document covers only those requirements for mounting boxes which are necessary for the tests on the socket-outlet incorporating electronic components to perform additional functions.

Replace the dash text after NOTE 2 by the following dashes:

– accessories incorporating USB power supply which are covered by IEC 60884-3-1;
– mechanically switched socket-outlets without any electronic function which are covered by IEC 60884-2-3;
– accessories including RCD’s which are covered by IEC 62640 and IEC 61540;
– portable socket-outlets incorporating electronic switches validated according to IEC 61058-1-2;
– switched socket-outlets with interlock for fixed electrical installations, which are covered by IEC 60884-2-6.

Replace the eighth paragraph by the following:

This document applies to plugs and socket-outlets incorporating electronic components for use at ambient temperature not normally exceeding +25 °C but occasionally reaching +35 °C with a lower limit of the ambient air temperature of −5 °C.

Add the following paragraph after the eighth paragraph:

Functional safety aspects are not covered by this document.

Add the following paragraphs after the last paragraph:

This document gives additional tests and requirements for accessories incorporating electronic components for additional functions that control the output of the accessory, see Annex AA (Normative).

This document gives additional tests and requirements for accessories incorporating electronic components for additional functions being powered by the accessory which do not control the output, see Annex BB (Normative).

This document gives additional tests and requirements for accessories incorporating electronic components for additional functions that operate as a protection means, see Annex CC (Normative).

This document is not intended to cover standalone devices within the scope of the IEC 60730 series.

2 Normative references

IEC 60884-1:2022, Clause 2 is applicable except as follows:

Addition:

IEC 60068-2-78, *Environmental testing - Part 2-78: Tests - Test Cab: Damp heat, steady state*

IEC 60127 (all parts), *Miniature fuses*

IEC 60384-14:2023, *Fixed capacitors for use in electronic equipment - Part 14: Sectional specification - Fixed capacitors for electromagnetic interference suppression and connection to the supply mains*

IEC 60664-1:2020, *Insulation coordination for equipment within low-voltage supply systems - Part 1: Principles, requirements and tests*

IEC 60664-3:2016, *Insulation coordination for equipment within low-voltage systems - Part 3: Use of coating, potting or moulding for protection against pollution*

IEC 60670 (all parts), *Boxes and enclosures for electrical accessories for household and similar fixed electrical installations*

IEC 60884-1:2022, *Plugs and socket-outlets for household and similar purposes - Part 1: General requirements*

IEC 60898-1, *Electrical accessories - Circuit-breakers for overcurrent protection for household and similar installations - Part 1: Circuit-breakers for a.c. operation*

IEC 60990, *Methods of measurement of touch current and protective conductor current*

IEC 60934, *Circuit breakers for equipment (CBE)*

IEC 60998 (all parts), *Connecting devices for low-voltage circuits for household and similar purposes*

IEC 60999 (all parts), *Connecting devices - Electrical copper conductors - Safety requirements for screw-type and screwless-type clamping units*

IEC 61000-3-2, *Electromagnetic compatibility (EMC) - Part 3-2: Limits - Limits for harmonic current emissions (equipment input current ≤16 A per phase)*

IEC 61000-4-2:2025, *Electromagnetic compatibility (EMC) - Part 4-2: Testing and measurement techniques - Electrostatic discharge immunity test*

IEC 61000-4-3, *Electromagnetic compatibility (EMC) - Part 4-3: Testing and measurement techniques - Radiated, radio-frequency, electromagnetic field immunity test*

IEC 61000-4-4, *Electromagnetic compatibility (EMC) - Part 4-4: Testing and measurement techniques - Electrical fast transient/burst immunity test*

IEC 61000-4-5, *Electromagnetic compatibility (EMC) - Part 4-5: Testing and measurement techniques - Surge immunity test*

IEC 61000-4-6, *Electromagnetic compatibility (EMC) - Part 4-6: Testing and measurement techniques - Immunity to conducted disturbances, induced by radio-frequency fields*

IEC 61000-4-8, *Electromagnetic compatibility (EMC) - Part 4-8: Testing and measurement techniques - Power frequency magnetic field immunity test*

IEC 61000-4-11, *Electromagnetic compatibility (EMC) - Part 4-11: Testing and measurement techniques - Voltage dips, short interruptions and voltage variations immunity tests for equipment with input current up to 16 A per phase*

IEC 61051-2, *Varistors for use in electronic equipment - Part 2: Sectional specification for surge suppression varistors*

IEC 61558-2-6, *Safety of transformers, reactors, power supply units and combinations thereof - Part 2-6: Particular requirements and tests for safety isolating transformers and power supply units incorporating safety isolating transformers for general applications*

IEC 61558-2-16, *Safety of transformers, reactors, power supply units and combinations thereof - Part 2-16: Particular requirements and tests for switch mode power supply units and transformers for switch mode power supply units for general applications*

IEC 61643-331:2020, *Components for low-voltage surge protection - Part 331: Performance requirements and test methods for metal oxide varistors (MOV)*

IEC 62479, *Assessment of the compliance of low-power electronic and electrical equipment with the basic restrictions related to human exposure to electromagnetic fields (10 MHz to 300 GHz)*

CISPR 32:2015, *Electromagnetic compatibility of multimedia equipment - Emission requirements*
CISPR 32:2015/AMD1: 2019

Bibliography

IEC 60884-1:2022, Bibliography is applicable except as follows:

Addition:

IEC 60050-442:1998, *International Electrotechnical Vocabulary (IEV) - Part 442: Electrical accessories*

IEC 60050-614:2016, *International Electrotechnical Vocabulary (IEV) - Part 614: Generation, transmission and distribution of electricity – Operation*

IEC 60085, *Electrical insulation - Thermal evaluation and designation*

IEC 60364-4-41, *Low-voltage electrical installations - Part 4-41: Protection for safety - Protection against electric shock*

IEC 60715, *Dimensions of low-voltage switchgear and controlgear - Standardized mounting on rails for mechanical support of switchgear, controlgear and accessories*

IEC 60730 (all parts), *Automatic electrical controls*

IEC 60884-2-3, *Plugs and socket-outlets for household and similar purposes - Part 2-3: Particular requirements for switched socket-outlets without interlock for fixed installations*

IEC 60884-2-6, *Plugs and socket-outlets for household and similar purposes - Part 2-6: Particular requirements for switched socket-outlets with interlock for fixed electrical installations*

IEC 60884-3-1, *Plugs and socket-outlets for household and similar purposes - Part 3-1: Particular requirements for socket-outlets incorporating USB power supply*

IEC 61000-4-20:2022, *Electromagnetic compatibility (EMC) - Part 4-20: Testing and measurement techniques - Emission and immunity testing in transverse electromagnetic (TEM) waveguides*

IEC 61058-1-2, *Switches for appliances - Part 1-2: Requirements for electronic switches*

IEC 61140:2016, *Protection against electric shock - Common aspects for installation and equipment*

IEC 62640, *Residual current devices with or without overcurrent protection for socket-outlets for household and similar uses*

IEC 63044-1:2017, *Home and Building Electronic Systems (HBES) and Building Automation and Control Systems (BACS) - Part 1: General requirements*
IEC 63044-1:2017/AMD1:2021

IEC 63044-3:2017, *Home and Building Electronic Systems (HBES) and Building Automation and Control Systems (BACS) - Part 3: Electrical safety requirements*
IEC 63044-3:2017/AMD1:2021

IEC 63044-5 (all parts), *Home and Building Electronic Systems (HBES) and Building Automation and Control Systems (BACS)*

EN 50065-1, *Signalling on low-voltage electrical installations in the frequency range 3 kHz to 148,5 kHz - Part 1: General requirements, frequency bands and electromagnetic disturbances*

EN 50065-2-2, *Signalling on low-voltage electrical installations in the frequency range 3 kHz to 148,5 kHz - Part 2-2: Immunity requirements for mains communications equipment and systems operating in the range of frequencies 95 kHz to 148,5 kHz and intended for use in industrial environments*

EN 50065-2-3, *Signalling on low-voltage electrical installations in the frequency range 3 kHz to 148,5 kHz - Part 2-3: Immunity requirements for mains communications equipment operating in the range of frequencies 3 kHz to 95 kHz and intended for use by electricity suppliers and distributors*

EN 50561-1, *Power line communication apparatus used in low-voltage installations - Radio disturbance characteristics - Limits and methods of measurement - Part 1: Apparatus for in-home use*

EN 50561-2, *Power line communication apparatus used in low voltage installations - Radio disturbance characteristics - Limits and methods of measurement - Part 2: Apparatus for access-network use*

EN 50561-3, *Power line communication apparatus used in low-voltage installations - Radio disturbance characteristics - Limits and methods of measurement - Part 3: Apparatus operating above 30 MHz*

ETSI EN 300 328, *Wideband transmission systems; Data transmission equipment operating in the 2,4 GHz band; Harmonised Standard for access to radio spectrum*

ETSI EN 300 220-1, *Short Range Devices (SRD) operating in the frequency range 25 MHz to 1 000 MHz - Part 1: Technical characteristics and methods of measurement*

ETSI EN 300 220-2, *Short Range Devices (SRD) operating in the frequency range 25 MHz to 1 000 MHz - Part 2: Harmonised Standard for access to radio spectrum for non specific radio equipment*

ETSI EN 300 440, *Short Range Devices (SRD); Radio equipment to be used in the 1 GHz to 40 GHz frequency range; Harmonised Standard covering the essential requirements of article 3.2 of Directive 2014/53/EU*

ETSI EN 301 489-1, *Electro Magnetic Compatibility (EMC) standard for radio equipment and services - Part 1: Common technical requirements; Harmonised Standard for Electro Magnetic Compatibility*

ETSI EN 301 489-3, *Electro Magnetic Compatibility (EMC) standard for radio equipment and services - Part 3: Specific conditions for Short-Range Devices (SRD) operating on frequencies between 9 kHz and 246 GHz; Harmonised Standard covering the essential requirements of article 3.1(b) of Directive 2014/53/EU*

ETSI EN 301 489-4, *Electro Magnetic Compatibility (EMC) standard for radio equipment and services - Part 4: Specific conditions for fixed radio links and ancillary equipment; Harmonised Standard for electromagnetic compatibility*

ETSI EN 301 489-17, *Electro Magnetic Compatibility (EMC) standard for radio equipment and services - Part 17: Specific conditions for Broadband Data Transmission Systems; Harmonised Standard for Electro Magnetic Compatibility*

BS 4662*, Boxes for flush mounting of electrical accessories. Requirements, test methods and dimensions*

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