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Responsible committee: EPL/108 Safety of electronic equipment within the field of audio/video, information technology and communication technology

Interested committees:

Title: BS EN 63316 Ed.1.0 Audio/video, information and communication technology equipment - Safety - Power transfer between Communications equipment ports using Communications cabling at # 60 Vd.c. and AC

Please notify the secretary if you are aware of any keywords that might assist in classifying or identifying the standard or if the content of this standard

- i) has any issues related to 3rd party IPR, patent or copyright
- ii) affects other national standard(s)
- iii) requires additional national guidance or information

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Introduction

This draft standard is based on national and international discussions. Your comments on this draft are invited and will assist in the preparation of the consequent standard.

For international standards, comments will be reviewed by the relevant UK national committee before sending the consensus UK vote and comments to the international committee, which will then decide appropriate action. If the international standard is approved, it is usual for the text to be published as a British Standard.

For national standards, comments will be reviewed by the relevant UK national committee and the resulting standards published as a British Standard.

UK Vote

Please indicate whether you consider the UK should submit a negative (with supporting technical reasons) or positive vote on this draft. Please indicate if you are aware of any reason why this draft standard should not be published as a British Standard.

Submission of Comments

- **Annotated drafts are not acceptable and will be rejected.**
- All comments should be submitted online at <https://standardsdevelopment.bsigroup.com/>. You will need to register in order to comment.

Template for comments and secretariat observations

Date: xx/xx/20xx	Document: ISO/DIS xxxx
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1	2	(3)	4	5	(6)	7
MB	Clause No./ Subclause No./Annex (e.g. 3.1)	Paragraph/Figure/ Table/Note	Type of comment	Commend (justification for change) by the MB	Proposed change by the MB	Secretariat observations on each comment submitted
	3.1	Definition 1	ed	Definition is ambiguous and needs clarifying.	Amend to read '...so that the mains connector to which no connection...'	
	6.4	Paragraph 2	te	The use of the UV photometer as an alternative cannot be supported as serious problems have been encountered in its use in the UK.	Delete reference to UV photometer.	



108/773/CD

COMMITTEE DRAFT (CD)

PROJECT NUMBER:

IEC 63316 ED1

DATE OF CIRCULATION:

2022-05-13

CLOSING DATE FOR COMMENTS:

2022-08-05

SUPERSEDES DOCUMENTS:

108/730/NP, 108/737/RVN

IEC TC 108 : SAFETY OF ELECTRONIC EQUIPMENT WITHIN THE FIELD OF AUDIO/VIDEO, INFORMATION TECHNOLOGY AND COMMUNICATION TECHNOLOGY

SECRETARIAT:

United States of America

SECRETARY:

Ms Valara Davis

OF INTEREST TO THE FOLLOWING COMMITTEES:

PROPOSED HORIZONTAL STANDARD:



Other TC/SCs are requested to indicate their interest, if any, in this CD to the secretary.

FUNCTIONS CONCERNED:

☐ EMC

☐ ENVIRONMENT

☐ QUALITY ASSURANCE

☒ SAFETY

This document is still under study and subject to change. It should not be used for reference purposes.

Recipients of this document are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

TITLE:

AUDIO/VIDEO, INFORMATION AND COMMUNICATION TECHNOLOGY EQUIPMENT – SAFETY – Power transfer between Communications equipment ports using Communications cabling at ≥ 60 Vd.c. and AC

NOTE FROM TC/SC OFFICERS:

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FOREWORD

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IEC 63316 was prepared by IEC Technical Committee 108, Safety of electronic equipment within the field of audio/video, information technology and communication technology. This standard is intended to replace parts of IEC 62368-3 upon publication.

In the case of a new edition replacing a previous edition, complete the following text. In the case of a first edition, delete it, as it does not apply.

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

Draft	Report on voting

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

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.

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,
- replaced by a revised edition, or
- amended.

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INTRODUCTION

This standard is intended to be used with [IEC 62368-1](#) and other standards requiring this information. More TBD

1 Scope

The Scope clause is a mandatory element of the text. For rules on the drafting of the Scope, refer to the ISO/IEC Directives, Part 2:2018, Clause 14.

This standard applies to equipment ports intended to supply and receive operating power from communications equipment ports using communication wires and cables. It covers particular requirements for circuits that are designed to transfer AC or DC power from a power sourcing equipment (PSE) to a powered device (PD), including repeaters, amplifiers, Optical Network Units, Remote DSLAMS, service provider terminating equipment, remote telecommunications cabinets and equipment, and midspan passive equipment connected to the PSE and PD.

The power transfer of equipment ports covered by this standard uses non-mains AC voltages or DC voltages ≥ 60 V DC classified as ES2 as defined in [IEC 62368-1:2018](#) or, in some very controlled cases, classified as ES3 as defined in [IEC 62368-1:2018](#).

EXAMPLES

- DC power transfer using voltages ≥ 60 V DC but ≤ 120 V DC, classified as ES2;
- Some telecommunications networks where the voltage was formerly called TNV-3, typically used for line/span/express powering outside North America, Long Range Reverse Power Feeding, HDSLx line powering ISDN, Line Powering Primary Rate E1.
- Some North American telecommunications networks between the utility service providers' [PSE \(3.1.2\)](#) and service providers side of the [PD \(3.1.3\)](#) at the PNI.
- For DC power transfer using voltages ≥ 120 V DC at ES3:
[RFT circuits \(RFT-circuit \(RFT circuits \(RFT-C circuit \(RFT circuits \(RFT circuit \(RFT Circuits \(RFT circuits \(RFT circuit \(3.1.5\)\)\)\)\)\)\)\)](#)
 and the associated telecommunications network equipment and cabling used by communications service providers and communications utilities (for example, line powered E1/T1, HDSLx, SHDSLx, xDSL, repeaters, and telecommunications line powering up/down converters), Optical Network Units, remote DSLAMS, etc. These
[RFT circuits \(RFT-circuit \(RFT circuits \(RFT-C circuit \(RFT circuits \(RFT circuit \(RFT Circuits \(RFT circuits \(RFT circuit \(3.1.5\)\)\)\)\)\)\)\)](#)
 are used between the utility service providers [PSE \(3.1.2\)](#) and service providers side of the [PD \(3.1.3\)](#) at the PNI. The customer facing ports of this equipment are ≤ 60 V DC that are covered by [IEC 62368-1](#), see [Annex A](#) for deployment topologies.
- For AC/DC remote powering voltage above ES1 over coaxial cable in circuits used by cable television utility service providers for repeaters, amplifiers, Optical Network Units. The customer facing ports of this equipment are ≤ 60 V DC that are covered by [IEC 62368-1](#).

NOTE 1 Any communications cable that permits power transfer between communications equipment is considered a communication cable even if communication does not take place. For example, a line-powering upconverter/downconverter used to power remote telecommunications equipment, may just provide limited communications RFT power and not necessarily any superimposed data or signalling.

This standard does not cover equipment ports within the scope of [IEC 63315](#), which covers equipment intended to supply and/or receive charging and/or operating power from ICT ports such as PoE, USB, HDMI, audio/visual, etc. This standard does not cover ringing signals that are in the scope of [IEC 62949:2017](#).

This standard does not cover traditional telecommunications technologies which operate at ≤ 60 V DC (classified as ES1 and external port ID1 in IEC 62368-1:2018) with or without ringing signals (classified as ES2 and external port ID1 in IEC 62368-1:2018) as those are adequately covered in IEC 62368-1:2018. Examples include Analogue Telephony, ISDN, T1, E1, VDSL, SHDSL, DDS, etc.

NOTE 2 Communications over mains and high-voltage power transmission and distribution lines are beyond the scope of this standard.

2 Normative references

The Normative references clause is a mandatory element of the text.

For rules on the drafting of the Normative references, refer to the ISO/IEC Directives, Part 2:2018, Clause 15.

This clause cannot be deleted. It will be filled in automatically. As you draft your text, you will be asked to confirm whether the references you use are informative or normative. If they are normative, they will appear here. If they are informative, they will appear in the bibliography.

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.

220	
221	<u>ATIS 0600337</u> : , <i>Requirements for Maximum Voltage, Current, and Power Levels Used in Communications</i>
222	<i>Transport Circuits</i>
223	<u>DIN VDE 0800.3</u> : , <i>Sicherheit von Anlagen mit Fernspeisung Art/Status</i>
224	
225	<u>DIN VDE 0800-3</u> : , <i>Part 3: Safety of installations with remote power feeding</i>
226	
227	<u>IEC 60479-1:2018</u> , <i>Effects of current on human beings and livestock - Part 1: General aspects</i>
228	
229	<u>IEC 60479-2</u> : , <i>Effects of current on human beings and livestock - Part 2: Special aspects</i>
230	
231	<u>IEC 60664-1:2020</u> , <i>Insulation coordination for equipment within low-voltage supply systems - Part 1:</i>
232	<i>Principles, requirements and tests</i>
233	<u>IEC 60695-11-5:2016</u> , <i>Fire hazard testing - Part 11-5: Test flames - Needle-flame test method - Apparatus,</i>
234	<i>confirmatory test arrangement and guidance</i>
235	<u>IEC 60728-11</u> : , <i>Cable networks for television signals, sound signals and interactive services - Part 11: Safety</i>
236	
237	<u>IEC 60749-11</u> : , <i>Semiconductor devices - Mechanical and climatic test methods - Part 11: Rapid change of</i>
238	<i>temperature - Two-fluid-bath method</i>
239	<u>IEC 60950-1:2005+AMD1:2009+AMD2:2013 CSV</u> : , <i>Information technology equipment - Safety - Part 1:</i>
240	<i>General requirements</i>
241	<u>IEC 62368-1</u> : , <i>Audio/video, information and communication technology equipment - Part 1: Safety</i>
242	<i>requirements</i>
243	<u>IEC 62368-1:2018</u> , <i>Audio/video, information and communication technology equipment - Part 1: Safety</i>
244	<i>requirements</i>
245	<u>IEC 62368-1:2018</u> , <i>Audio/video, information and communication technology equipment - Part 1: Safety</i>
246	<i>requirements</i>
247	<u>IEC 62368-3</u> : , <i>Audio/video, information and communication technology equipment - Part 3: Safety aspects</i>
248	<i>for DC power transfer through communication cables and ports</i>
249	<u>IEC 62949:2017</u> , <i>Particular safety requirements for equipment to be connected to information and</i>
250	<i>communication technology networks</i>
251	<u>IEC 62949:2017</u> , <i>Particular safety requirements for equipment to be connected to information and</i>
252	<i>communication technology networks</i>
253	<u>IEC 63315</u> : , <i>Title to be added</i>
254	
255	<u>IEC TS 60479-1:2005/AMD1:2016</u> , <i>Amendment 1 - Effects of current on human beings and livestock - Part</i>
256	<i>1: General aspects</i>
257	<u>IEC TS 60479-1:2005/COR2</u> : , <i>Corrigendum 2 - Effects of current on human beings and livestock - Part 1:</i>
258	<i>General aspects</i>
259	<u>IEEE 802.3</u> : , <i>IEEE Standard for Ethernet</i>
260	
261	<u>ISO/IEC/IEEE 8802-3:2021</u> , <i>Telecommunications and exchange between information technology systems -</i>
262	<i>Requirements for local and metropolitan area networks - Part 3: Standard for Ethernet</i>
263	<u>ITU-T K.50</u> : , <i>Safe limits for operating voltages and currents of telecommunication systems powered over the</i>
264	<i>network</i>
265	<u>ITU-T K.50:2018</u> , <i>Safe limits for operating voltages and currents of telecommunication systems powered</i>
266	<i>over the network</i>
267	
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ITU-T K.64: , *Safe working practices for outside equipment installed in particular environments*

NFPA 70: , *National Electrical Code*

Telcordia GR-1089-CORE: , *Electromagnetic Compatibility and Electrical Safety*

UL 2391: , *UL LLC Outline of Investigation for Equipment with Remote Feeding Telecommunication Circuits Intended for Backwards Compatibility in Legacy Telecommunication Equipment*

UL 2391: , *UL LLC Outline of Investigation for Equipment with Remote Feeding Telecommunication Circuits Intended for Backwards Compatibility in Legacy Telecommunication Equipment*

UL 60950-1: , *Information Technology Equipment - Safety - Part 1: General Requirements*

UL 62368-1: , *Standard For Audio/Video, Information And Communication Technology Equipment - Part 1: Safety Requirements*

3 Terms and definitions

The Terms and definitions clause is a mandatory element of the text.

For rules on the drafting of the Terms and definitions, refer to the ISO/IEC Directives, Part 2:2018, Clause 16.

*To insert a new terminological entry, go to the *Structure* tab and click on *Insert Term entry*.*

3.1 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 62368-1:2018, as well as the following apply. Terms and definitions from IEC 62368-1:2018 are indicated in **bold**.

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

302- IEC Electropedia: available at <http://www.electropedia.org/>

303- ISO Online browsing platform: available at <http://www.iso.org/obp>

3.1.1

building wiring

ICT and AV wires or cables that are intended to be installed wholly within a structure

EXAMPLE

Note 1 to entry: Examples include LAN cables, telecommunication cables, data cables, patch panels, connectors, etc.

Note 2 to entry: Under certain circumstances, [building wiring \(3.1.1\)](#) may run outside the building for connection to equipment (for example, a video camera outside of the building).

Note 3 to entry: Within this standard [building wiring \(3.1.1\)](#) excludes dedicated controlled wires and cables for connecting known equipment on each end at the time of installation.

3.1.2**power sourcing equipment PSE**

equipment, other than dedicated external power supply unit intended to supply specific equipment, supplying AC or DC power from a communications port to other communications equipment through communications wiring or cables

Note 1 to entry: It should be noted that [ISO/IEC/IEEE 8802-3:2021](#) has a similar but different definition, however PoE is not covered by this document.

3.1.3**powered device PD**

equipment supplied with AC or DC power by a [PSE \(3.1.2\)](#) into a communications port from communications wiring or cables

Note 1 to entry: It should be noted that [ISO/IEC/IEEE 8802-3:2021](#) has a similar but different definition, however PoE is not covered by this standard

Note 2 to entry: Some in-line devices may just function as a [PSE \(3.1.2\)](#) to inject power into the cable connecting to [PD \(3.1.3\)](#) equipment. [ISO/IEC/IEEE 8802-3:2021](#) identifies such devices as Midspan [PSE \(3.1.2\)](#), however PoE is not covered by this document.

Note 3 to entry: Some [PD \(3.1.3\)](#) equipment may also have a [PSE \(3.1.2\)](#) output to pass on unused power to other [PD \(3.1.3\)](#) equipment, such as repeaters and in-line amplifiers.

3.1.4**information and communication technology network ICT network**

metallically terminated transmission medium and its associated equipment and ICT wiring and communication cables

Note 1 to entry: The cable or wiring consists of two or more conductors intended for communication and/or power transfer between the various pieces of communications related equipment. The equipment may be located within the same or separate structures, buildings or locations, excluding: the mains system for supply, transmission and distribution of electrical power, if used as a communication transmission medium; a dedicated HBES/BACS network. End customer terminal equipment and associated wiring and cabling that is operating at ES1 DC voltages, as defined in [IEC 62368-1:2018](#).

Note 2 to entry: This may include twisted pairs, and may include circuits, that are subjected to transients as indicated by Table 13 of [IEC 62368-1:2018](#) (assumed to be 1,5 kV).

Note 3 to entry: An ICT network may be: - publicly or privately owned; - subject to longitudinal (common mode) as well as transverse (differential) voltages and currents induced from nearby power lines or electric traction lines.

Note 4 to entry: Examples of ICT networks addressed within this standard are:

- a telecommunication service provider or utility's RFT T1/E1, HDSLx, or span/line-powering network that is metallically isolated from the end customers terminal equipment (see [Annex A](#));
- a RFT public data network located in the service providers utility space;
- a Long Range reverse powering network operating above 60 V DC;
- a private RFT network with electrical interface characteristics similar to the above;
- a cable television network located in the service providers utility space;

Note 5 to entry: For information about circuit voltages and signals, which may be present, see Annex B of [IEC 62949:2017](#). For RFT, see [ITU-T K.50](#). For high voltage coax, see [IEC 60728-11](#).