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Interested committees:

Title: BS EN IEC 63474 Electrical and electronic household and office equipment # Measurement of networked standby power consumption of edge equipment

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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 Please indicate if you are aware of any reason why this draft standard should not be published as a British Standard.

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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.	

PROJECT NUMBER: IEC 63474 ED2	
DATE OF CIRCULATION: 2024-08-09	CLOSING DATE FOR COMMENTS: 2024-11-01
SUPERSEDES DOCUMENTS: 100/3921/RR	

IEC TA 19 : ENVIRONMENTAL AND ENERGY ASPECTS FOR MULTIMEDIA SYSTEMS AND EQUIPMENT	
SECRETARIAT: Germany	SECRETARY: Mr Andreas Schneider
OF INTEREST TO THE FOLLOWING COMMITTEES: TC 59,ACEE	HORIZONTAL FUNCTION(S):
ASPECTS CONCERNED: Energy Efficiency,Environment	

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.

Recipients of this document are invited to submit, with their comments, notification of any local regulations or technical reasons that may exist and should be considered should this proposal proceed, recognizing that failure to address such requirements could result in the need for new or existing "In Some Countries" clauses. (SEE [AC/22/2007](#) OR [NEW GUIDANCE DOC](#)).

TITLE:
Electrical and electronic household and office equipment – Measurement of networked standby power consumption of edge equipment

NOTE FROM TC/SC OFFICERS:

This document was developed under the horizontal energy efficiency (EE) function assigned to TC 100/TA 19, Environmental and energy aspects for multimedia systems and equipment.

TC 59/MT 9 and TC 100/TA 19/JWG 2 closely cooperate to align the specifications of IEC 62301 (ED3) and IEC 63474 (ED2) and to make both documents complementary.

The attached draft white paper 'IEC62301 – Measurement of standby power: Measurement Method and Power Stability Requirements' introduces the revised method and requirements also applicable for IEC 63474 (ED2).

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**ELECTRICAL AND ELECTRONIC HOUSEHOLD AND OFFICE EQUIPMENT –
MEASUREMENT OF NETWORKED STANDBY POWER CONSUMPTION OF
EDGE EQUIPMENT –**

FOREWORD

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IEC 63474 has been prepared by technical area 19: Environmental and energy aspects for multimedia systems and equipment, of IEC technical committee 100: Audio, video and multimedia systems and equipment. It is an International Standard, and IEC technical committee 59: Performance of household and similar electrical appliances.

IEC 63474:2023 (ED1) is based on [EN 50643:2018 \[1\]](#). It was submitted to the National Committees for voting under the Fast Track Procedure.

This second edition cancels and replaces the first edition published in 2023. This edition constitutes a technical revision.

147 This edition includes the following significant technical changes with respect to the previous
148 edition:

- 149 a) The scope and the measurement method were extended to battery operated products.
150 b) Terms and definitions, and measurement conditions have been updated and aligned for both
151 IEC 62301 (ED3) and IEC 63474 (ED2).

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

Draft	Report on voting
100/xxxx/CDV	100/xxxx/RVC

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

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

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

160 The committee has decided that the contents of this document will remain unchanged until the
161 stability date indicated on the IEC website under webstore.iec.ch in the data related to the
162 specific document. At this date, the document will be

- 163 • reconfirmed,
164 • withdrawn,
165 • replaced by a revised edition, or
166 • amended.

167

168

INTRODUCTION

169 The methods defined in this document are intended to define requirements for the measurement
170 of power used by equipment having one or more wired or wireless network port(s) in those
171 modes that are able to resume a function by way of a remotely initiated trigger or reactivation
172 trigger from a network connection ([networked standby mode](#)).

173 For the measurement of power used in [non-active mode](#) other than [networked standby mode](#)
174 reference is made to IEC 62301.

175 This document also provides a method to test power management and whether it is possible to
176 deactivate wireless network connection(s).

177

ELECTRICAL AND ELECTRONIC HOUSEHOLD AND OFFICE EQUIPMENT – MEASUREMENT OF NETWORKED STANDBY POWER CONSUMPTION OF EDGE EQUIPMENT –

1 Scope

This document specifies methods of measurement of electrical power in [networked standby mode](#) and the reporting of the results for [edge equipment](#).

The measurement of power and energy use in [non-active mode](#), other than networked standby mode, is covered by IEC 62301, including the input voltage range.

This document applies to edge equipment that are powered by:

- low voltage mains AC power ($LV \leq 1000$ V AC), or
- an external power supply that uses low voltage mains AC power, or
- extra low voltage DC power ($ELV \leq 50$ V DC), or
- an internal main battery.

NOTE 1 Conditions that are out of scope:

- [active mode](#) ([primary function](#))
- other [non-active mode](#) (which are either covered by IEC 62301 or by specific product group standards)
- conditions where main batteries are being charged
- disconnected condition of the equipment.

This document applies to the following product groups where a [networked standby mode](#) is present:

- [edge equipment](#) with a [network reactivation function](#), such as household appliances, information technology equipment, audio, video and multimedia systems and equipment,
- digital radio receivers with an emergency warning function,
- gas burning equipment.

NOTE 2 The measurement of power, energy use and performance of products during their intended use (primary functions) are generally specified in product standards and are not covered by this document.

NOTE 3 [interconnecting equipment](#) (equipment that provides network infrastructure and function) is out of scope. Measurement of electrical power in networked standby mode for interconnecting equipment is the subject of ETSI standard [EN 303 423](#) [2].

This document also provides a method to test power management and to test whether it is possible to deactivate wireless network connection(s).

NOTE 4 Edge equipment can also include [auxiliary battery](#).

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 62104, *Characteristics of DAB receivers*

220 IEC 62301, *Household electrical appliances - Measurement of standby power*

221 **3 Terms, definitions and abbreviations**

222 **3.1 Terms and definitions**

223 For the purposes of this document, the terms and definitions given in IEC 62301 as well as the
224 following apply. [Annex A](#) shows the conceptual framework of power modes and functions.

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

- 227 • ISO Online browsing platform: available at <https://www.iso.org/obp>
- 228 • IEC Electropedia: available at <http://www.electropedia.org/>

229 **3.1.1 Function related terms and definitions**

230 **3.1.1.1**

231 **function**

232 <of a product> predetermined operation undertaken by a product

233 Note 1 to entry: Functions can be controlled by an interaction of the user, of other technical systems, of the system
234 itself, from measurable inputs from the environment and/or time.

235 Note 2 to entry: A functions can be classified as primary function, secondary function or tertiary function, which are
236 broad categories.

237 **3.1.1.2**

238 **primary function**

239 <of a product> function providing a main intended purpose

240 EXAMPLE Cleaning of clothes by a washing machine, displaying of video and providing sound by a television.

241 Note 1 to entry: Products can have more than one primary function.

242 Note 2 to entry: [Figure A.1](#) provides a structured overview as an aid to understanding functional relationships and
243 energy use applicable in electrotechnical products. Additional terms and definitions to fulfil the particular needs of
244 product sectors should be defined within the structure of the concepts shown in [Figure A.1](#).

245 [SOURCE: IEC 60050-904:2014 [3], IEC 904-03-02 modified: 'main', Example and new 'Note 1
246 to entry' added, and Table 1 replaced by Figure A.1 in Note 2 to entry.]

247 **3.1.1.3**

248 **secondary function**

249 <of a product> function that enables, supplements or enhances a primary function

250 EXAMPLE Secondary functions can include information functions, sensor-based functions, reactivation functions
251 or network integrity functions.

252 EXAMPLE Timer informing the remaining time for completion of the washing program or the delay start function of
253 a washing machine.

254 Note 1 to entry: [Figure A.1](#) provides a structured overview as an aid to understanding functional relationships and
255 energy use applicable in electrotechnical products. Additional terms and definitions to fulfil the particular needs of
256 product sectors should be defined within the structure of the concepts shown in [Figure A.1](#).

257 [SOURCE: IEC 60050-904:2014 [3], IEC 904-03-03 modified: Examples added, in Note 1 to
258 entry 'Table 1' replaced by 'Figure A.1'.]

259 **3.1.1.4**

260 **tertiary function**

261 <of a product> function other than a primary function or a secondary function

262 EXAMPLE An EMC filter, if present, can provide its function in [non-active mode](#) and [active mode](#).

263 EXAMPLE Event and failure data recorder in a washing machine for service purposes.

264 Note 1 to entry: A tertiary function does not provide a service directly to the user of the product.

265 Note 2 to entry: The distinction between primary functions, secondary functions and tertiary functions is not a
266 distinction between necessary functions and non-necessary functions since tertiary functions can be necessary
267 functions.

268 Note 3 to entry: [Figure A.1](#) provides a structured overview as an aid to understanding functional relationships and
269 energy use applicable in electrotechnical products. Additional terms and definitions to fulfil the particular needs of
270 product sectors should be defined within the structure of the concepts shown in [Figure A.1](#).

271 [SOURCE: [IEC 60050-904:2014 \[3\]](#), IEC 904-03-04 modified: in Example 1 'off mode, partial on
272 mode and on mode' replaced by 'non-active modes and active modes', Example 2 was
273 amended, new 'Note 1 to entry' and 'Note 2 to entry' added. In Note 3 to entry 'Table 1' replaced
274 by 'Figure A.1'.]

275 3.1.1.5

276 status information function

277 <of a product> function by which the product provides usage-orientated information

278 EXAMPLE Date, time, timer information, or past or future operation.

279 Note 1 to entry: Displayed content that relates to the primary function of a display, e.g. displaying moving images,
280 is not status information. The primary display of a product can provide status information in active mode.

281 Note 2 to entry: [Figure A.1](#) provides a structured overview as an aid to understanding functional relationships and
282 energy use applicable in electrotechnical products. Additional terms and definitions to fulfil the particular needs of
283 product sectors should be defined within the structure of the concepts shown in [Figure A.1](#).

284 [SOURCE: [IEC 60050-904:2014 \[3\]](#), IEC 904-03-07 modified: 'equipment provides simple use-
285 oriented' replaced by 'product provides usage-oriented', original 'Note 1 to entry' was changed
286 to 'EXAMPLE', new 'Note 1 to entry' added, in Note 2 to entry 'Table 1' replaced by 'Figure A.1'.]

287 3.1.1.6

288 network integrity function

289 <of a product> function to maintain a [network](#) communication path that is external to the product

290 Note 1 to entry: The communication can be via wired or wireless interfaces.

291 Note 2 to entry: In order to communicate, it is necessary for the product to have at least one network port activated.

292 Note 3 to entry: [Figure A.1](#) provides a structured overview as an aid to understanding functional relationships and
293 energy use applicable in electrotechnical products. Additional terms and definitions to fulfil the particular needs of
294 product sectors should be defined within the structure of the concepts shown in [Figure A.1](#).

295 [SOURCE: [IEC 60050-904:2014 \[3\]](#), IEC 904-03-08 modified: 'equipment' replaced by 'product',
296 original 'Note 3 to entry' deleted, in Note 3 to entry 'Table 1' replaced by 'Figure A.1'.]

297 3.1.1.7

298 reactivation function

299 <of a product> function allowing a product to be switched into a different mode via an internal
300 signal, manually using a control on the product, with its remote control unit, or via an externally
301 initiated signal

302 EXAMPLE A timer could provide the internal signal leading to reactivation.

303 Note 1 to entry: The reactivation function can be indicated using a simple optical device (e.g. a light-emitting diode
304 (LED)).

305 Note 2 to entry: [Figure A.1](#) provides a structured overview as an aid to understanding functional relationships and
306 energy use applicable in electrotechnical products. Additional terms and definitions to fulfil the particular needs of
307 product sectors should be defined within the structure of the concepts shown in [Figure A.1](#). [Figure A.2](#) provides a
308 concept diagram.

309 [SOURCE: IEC 60050-904:2014 [3], IEV 904-03-06 modified: definition extended to cover both
310 internal reactivation function and 'network reactivation function', original 'Note 2 to entry'
311 deleted, in Note 2 to entry 'Table 1' replaced by 'Figure A.1' and 'Figure A.2 provides a concept
312 diagram.' added.]

313 3.1.1.8

314 internal reactivation function

315 <of a product> **reactivation function** where the product is switched into a different mode via an
316 internal signal, with its remote control unit, or manually using a control on the product

317 Note 1 to entry: **Figure A.1** provides a structured overview as an aid to understanding functional relationships and
318 energy use applicable in electrotechnical products. Additional terms and definitions to fulfil the particular needs of
319 product sectors should be defined within the structure of the concepts shown in **Figure A.1**. **Figure A.2** provides a
320 concept diagram.

321 3.1.1.9

322 network reactivation function

323 <of a product> **reactivation function** where the product is switched into a different mode via an
324 external signal through a **network**

325 Note 1 to entry: **Figure A.1** provides a structured overview as an aid to understanding functional relationships and
326 energy use applicable in electrotechnical products. Additional terms and definitions to fulfil the particular needs of
327 product sectors should be defined within the structure of the concepts shown in **Figure A.1**. **Figure A.2** provides a
328 concept diagram.

329 3.1.1.10

330 sensor-based function

331 <of a product> function using a sensor to monitor a certain condition, internally or externally to
332 the product

333 3.1.1.11

334 emergency warning & alert function

335 EWF

336 <of a radio receiver> automatic receiver switching and emergency reactivation by alarm
337 announcement broadcast signal

338 3.1.1.12

339 power management

340 power management function

341 automatic control mechanism that achieves within a preset timeframe, or other conditions, a
342 certain power demand consistent with a pre-determined level of functionality

343 [SOURCE: IEC 60050-904:2014 [3], IEV 904-03-01, modified - 'the smallest input power'
344 replaced by 'within a preset timeframe, or other conditions, a certain power demand' by ', Note
345 1 to entry has been omitted.]

346 3.1.1.13

347 power supply function

348 <of a battery powered product> ability of the charging circuitry or power supply to directly power
349 some or all of the functions of the battery powered product without drawing power from the
350 battery

351 Note 1 to entry: This can include main batteries charging or main batteries removed.

352 Note 2 to entry: Chargers with a power supply function do not show the typical recharging pattern of chargers
353 without a power supply function as the batteries are not permanently discharged by internal processes, display
354 information and networked standby consumption. This consumption can be supplied exclusively from the power
355 supply unit or also proportionally from the battery and the power supply unit.

3.1.2 Mode related terms and definitions

3.1.2.1

mode

condition that has any combination of functions

Note 1 to entry: A mode with one or no functions could be a valid combination.

Note 2 to entry: Any transition of a product to a different mode, either through user intervention or automatically initiated, is not be considered to form part of either mode.

Note 3 to entry: A mode can have some functions with variable power draw.

Note 4 to entry: [Figure A.1](#) provides a structured overview as an aid to understanding functional relationships and energy use applicable in electrotechnical products. Additional terms and definitions to fulfil the particular needs of product sectors should be defined within the structure of the concepts shown in [Figure A.1](#).

3.1.2.2

active mode

on mode

mode in which the product is connected to a power source and provides at least one [primary function](#)

Note 1 to entry: The terms “on”, “in-use”, and “operation” also describe this mode.

Note 2 to entry: [Figure A.1](#) provides a structured overview as an aid to understanding functional relationships and energy use applicable in electrotechnical products. Additional terms and definitions to fulfil the particular needs of product sectors should be defined within the structure of the concepts shown in [Figure A.1](#).

3.1.2.3

non-active mode

non-active

mode in which the product is connected to a power source and provides no [primary function](#)

Note 1 to entry: This can include modes such as off mode, standby mode, active standby mode and networked standby mode, as applicable.

Note 2 to entry: [Figure A.1](#) provides a structured overview as an aid to understanding functional relationships and energy use applicable in electrotechnical products. Additional terms and definitions to fulfil the particular needs of product sectors should be defined within the structure of the concepts shown in [Figure A.1](#).

3.1.2.4

standby mode

standby

[non-active mode](#) providing at least one [secondary function](#)

Note 1 to entry: [Figure A.1](#) provides a structured overview as an aid to understanding functional relationships and energy use applicable in electrotechnical products. Additional terms and definitions to fulfil the particular needs of product sectors should be defined within the structure of the concepts shown in [Figure A.1](#).

3.1.2.5

networked standby mode

networked standby

[non-active mode](#) in which the edge equipment is able to switch into a different mode via a [network reactivation function](#)

Note 1 to entry: [Figure A.1](#) provides a structured overview as an aid to understanding functional relationships and energy use applicable in electrotechnical products. Additional terms and definitions to fulfil the particular needs of product sectors should be defined within the structure of the concepts shown in [Figure A.1](#).

3.1.2.6

off mode

off

[non-active mode](#) in which the product is providing no [secondary function](#)