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Building intercom systems - Part 1-1: General requirements

Gebäude-Sprechanlagen - Teil 1-1: Generelle Systemanforderungen

Systèmes d'interphone de bâtiment - Partie 1-1: Exigences du système - Généralités

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TITLE:

Building intercom systems - Part 1-1: System requirements - General

PROPOSED STABILITY DATE: 2030

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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BUILDING INTERCOM SYSTEMS –

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Part 1-1: System requirements – General

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FOREWORD

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170 International Standard IEC 62820-1-1 has been prepared by IEC technical committee 79: Alarm
 171 and electronic security systems.

172 The text of this standard is based on the following documents:

FDIS	Report on voting

173

174 Full information on the voting for the approval of this standard can be found in the report on
 175 voting indicated in the above table.

176 This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

177 A list of all parts in the IEC 62820 series, published under the general title *Building intercom*
 178 *systems*, can be found on the IEC website.

179 The committee has decided that the contents of this publication will remain unchanged until the
180 stability date indicated on the IEC website under "<http://webstore.iec.ch>" in the data related to
181 the specific publication. At this date, the publication will be

- 182 • reconfirmed,
- 183 • withdrawn,
- 184 • replaced by a revised edition, or
- 185 • amended.

186

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INTRODUCTION

190 This part of IEC 62820 specifies the technical requirements for building intercom systems and
191 equipment used for building entry. Building intercom systems can function independently and
192 may be extendable to support building security management functions, e.g. extendable with
193 security management unit (SMU) operated by security staff (door-man, concierge,
194 security-guard, porter, etc.), or in conjunction with other systems as per the security
195 requirements of the building. It may consist of: Visitor call unit (VCU), user receiver unit (URU),
196 SMU, power supply, auxiliary device as well as interface-unit to other security-systems.

197 The IEC 62820 series of standards set out the technical requirements for the composition,
198 functions, performance, test methods of building intercom systems for building entry and
199 application guidelines and consist of five parts:

200 Part 1-1: System requirements – General

201 Part 1-2: System requirements – Building intercom systems using the internet protocol (IP)

202 Part 2: Requirements for advanced security building intercom systems

203 Part 3-1: Application guidelines – General

204 Part 3-2: Application guidelines – Advanced security building intercom systems

205 The Part 1-1 of IEC 62820 is based on Chinese standard GB/T 31070.1-2014 and European
206 standard EN 50486:2008.

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BUILDING INTERCOM SYSTEMS –

Part 1-1: System requirements – General

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215 **1 Scope**

216 This Part of IEC 62820 specifies the technical requirements for the composition, functions,
217 performance, and test methods of general building intercom systems.

218 This part is applicable to the general intercom systems for building entry in residential or
219 commercial buildings.

220 Door-Entry-System (DES) is a simple kind of convenient Building-Intercom-System (BIS) mainly
221 for user's comfort. This document has classified the general building intercom systems into two
222 grades in Part 1-1. Grade 1 adopts lower requirements to cover DES not used for relevant
223 security applications while grade 2 adopts higher requirements for building intercom systems for
224 security applications. Each grade may adopt different functional and performance requirements,
225 test methods and normative references.

226 NOTE The different requirements between grade 1 and grade 2 are summarized in Table C.1.

227 **2 Normative references**

228 The following documents are referred to in the text in such a way that some or all of their content
229 constitutes requirements of this document. For dated references, only the edition cited applies.
230 For undated references, the latest edition of the referenced document (including any
231 amendments) applies.

232 IEC 60065:2014, *Audio, video and similar electronic apparatus – Safety requirements* – iec-62820-1-1-2025

233 IEC 60529:1989, *Degrees of protection provided by enclosures (IP Code)*

234 IEC 60529:1989/AMD1:1999

235 IEC 60529:1989/AMD2:2013

236 IEC 60950-1:2005, *Information technology equipment – Safety – Part 1: General requirements*

237 IEC 61000-6-1, *Electromagnetic compatibility (EMC) – Part 6-1: Generic standards – Immunity*
238 *for residential, commercial and light-industrial environments*

239 IEC 61000-6-3, *Electromagnetic compatibility (EMC) – Part 6-3: Generic standards – Emission*
240 *standard for residential, commercial and light-industrial environments*

241 IEC 62262, *Degrees of protection provided by enclosures for electrical equipment against*
242 *external mechanical impacts (IK code)*

243 IEC 62368-1:2018, *Audio/video, information and communication technology equipment – Part 1:*
244 *Safety requirements*

245 IEC 62599-1, *Alarm systems – Part 1: Environmental test methods*

246 IEC 62599-2, *Alarm systems – Part 2: Electromagnetic compatibility – Immunity requirements*
247 *for components of fire and security alarm systems*

248 ISO 12233:2017, *Photography – Electronic still picture imaging – Resolution and spatial*
249 *frequency responses*

250 ITU-T P.50, *Artificial voices*

251 ITU-T P.79-2007, *Calculation of loudness ratings for telephone sets*

252 ITU-T P.501, *Test signals for use in telephony*

253 **3 Terms, definitions and abbreviations**

254 **3.1 Terms and definitions**

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

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

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

260 **3.1.1**

261 **2-way speech**

262 speech between any two units (VCU, URU or SMU) in each direction which may be simultaneous
263 or non-simultaneous

264 **3.1.2**

265 **acoustic distortion**

266 distortion of signals at the receiving terminal of the system as a result of system transmission
267 non-linearity and ground noise, expressed as a ratio percentage of the harmonic signal and
268 ground noise at the receiving terminal in proportion to the overall sound pressure

269 **3.1.3**

270 **acoustic pressure level**

271 measurement of the acoustic pressure level generated by the equipment under test (EUT) in
272 normal conditions

273 **3.1.4**

274 **artificial ear**

275 device used to calibrate the receiver and containing an acoustic coupler and a calibrated
276 microphone used to measure sound pressure

277 Note 1 to entry: Its overall acoustic impedance within a given frequency band is similar to that of the average human
278 ear, and its characteristics comply with the requirements of type 1 or type 3.2 provided by Article 5 of
279 ITU-T P.57-2011.

280 **3.1.5**

281 **artificial mouth**

282 analogue device the sound characteristics of which are similar to the directivity and radiation
283 pattern of the average human mouth

284 Note 1 to entry: It conforms to the requirements set forth in Article 5 of ITU-T P.51-1996.

285 **3.1.6**

286 **auxiliary device**

287 device which extends or facilitates additional functions and interfaces of a building intercom
288 system, such as communications, remote control, 3rd party devices interfaces etc.

289 **3.1.7**
290 **building intercom system**
291 **BIS**
292 system designed for entry communication in residential or commercial buildings which provides
293 addressing calls, speech and optional video function and is equipped with an electronic
294 unlocking device

295 **3.1.8**
296 **channel S/N**
297 sound pressure ratio between signal and ground noise at the receiving terminal under excitation
298 of the nominal sound pressure at the transmitting terminal, expressed in dB

299 **3.1.9**
300 **handset unit**
301 device typically coupled to the ear by hand as can be a handset URU or handset SMU

302 **3.1.10**
303 **hands-free unit**
304 device that does not need to use the hand during the communication as can be a VCU,
305 hands-free URU or hands-free SMU

306 **3.1.11**
307 **idle channel noise**
308 noise expressed in dB(A) which is received in the terminal after the channel connection is
309 established when no signal is transferred

310 **3.1.12**
311 **loudness rating guard-ring position**
312 **LRGP**
313 fixed position in which the handset of the URU or SMU is used to measure the rating of system
314 loudness

315 [SOURCE: adapted from ITU-T P.64:2007]

316 **3.1.13**
317 **overall loudness rating**
318 **OLR**
319 measurement of the loudness in the entire channel from the reference point of the mouth at the
320 transmitting terminal to the ear reference point (ERP) at the receiving terminal, expressed in dB

321 [SOURCE: adapted from ITU-T P.79:2007]

322 **3.1.14**
323 **overall sensitivity**
324 gain of the sound pressure at the reference point of the ear at the reception terminal relative to
325 the excitation sound pressure at the mouth reference point (MRP) at the transmitting terminal,
326 expressed in dB

327 Note 1 to entry: It is a function of frequency.

328 **3.1.15**
329 **security management unit**
330 **SMU**
331 device which can be addressed from the call unit (VCU, URU or SMU), provides the means of
332 addressing the calling signal to the desired receiver unit(s) which can be URU or SMU, 2-way
333 speech, the activation of the audio and/or video connection with the VCU and the means to
334 initiate remote unlocking of the controlled entrance