

SLOVENSKI STANDARD
oSIST prEN IEC 62386-202:2022
01-januar-2022

**Digitalni naslovljivi vmesnik za razsvetljavo - 202. del: Posebne zahteve za krmilja
- Avtonomna zasilna razsvetljava (naprava tipa 1)**

Digital addressable lighting interface - Part 202: Particular requirements for control gear -
Self-contained emergency lighting (device type 1)

Digital adressierbare Schnittstelle für die Beleuchtung - Teil 202: Besondere
Anforderungen an Betriebsgeräte - Notbeleuchtung mit Einzelbatterie (Gerätetyp 1)

Interface d'éclairage adressable numérique - Partie 202: Exigences particulières pour les
appareillages de commande - Blocs autonomes d'éclairage de secours (dispositifs de
type 1)

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Ta slovenski standard je istoveten z: prEN IEC 62386-202:2021

ICS:

29.140.50	Instalacijski sistemi za razsvetljavo	Lighting installation systems
35.200	Vmesniška in povezovalna oprema	Interface and interconnection equipment

oSIST prEN IEC 62386-202:2022 **en**

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34/879/CDV

COMMITTEE DRAFT FOR VOTE (CDV)

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34/718/CD, 34/785A/CC

IEC TC 34 : LIGHTING	
SECRETARIAT: United Kingdom	SECRETARY: Mr Petar Luzajic
OF INTEREST TO THE FOLLOWING COMMITTEES:	PROPOSED HORIZONTAL STANDARD: <input type="checkbox"/> Other TC/SCs are requested to indicate their interest, if any, in this CDV to the secretary.
FUNCTIONS CONCERNED: <input type="checkbox"/> EMC <input type="checkbox"/> ENVIRONMENT <input type="checkbox"/> QUALITY ASSURANCE <input type="checkbox"/> SAFETY	
<input checked="" type="checkbox"/> SUBMITTED FOR CENELEC PARALLEL VOTING <input type="checkbox"/> NOT SUBMITTED FOR CENELEC PARALLEL VOTING Attention IEC-CENELEC parallel voting The attention of IEC National Committees, members of CENELEC, is drawn to the fact that this Committee Draft for Vote (CDV) is submitted for parallel voting. The CENELEC members are invited to vote through the CENELEC online voting system.	

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TITLE:

Digital addressable lighting interface - Part 202: Particular requirements for control gear - Self-contained emergency lighting (device type 1)

PROPOSED STABILITY DATE: 2024

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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DIGITAL ADDRESSABLE LIGHTING INTERFACE –

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**Part 202: Particular requirements for control gear –
Self-contained emergency lighting (device type 1)**

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FOREWORD

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9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

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217

International Standard IEC 62386-202 has been prepared by subcommittee 34C: Auxiliaries for lamps, of IEC technical committee 34: Lamps and related equipment.

218

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

NP	Report on voting
34C/XX/NP	34C/XX/RVD

219

220

221

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

222

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

223

224

A list of all parts of the IEC 62386 series, under the general title: *DIGITAL ADDRESSABLE LIGHTING INTERFACE*, can be found on the IEC website.

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

- 228 • reconfirmed;
- 229 • withdrawn;
- 230 • replaced by a revised edition, or
- 231 • amended.

232 A bilingual version of this publication may be issued at a later date.

233

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

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236

INTRODUCTION

237

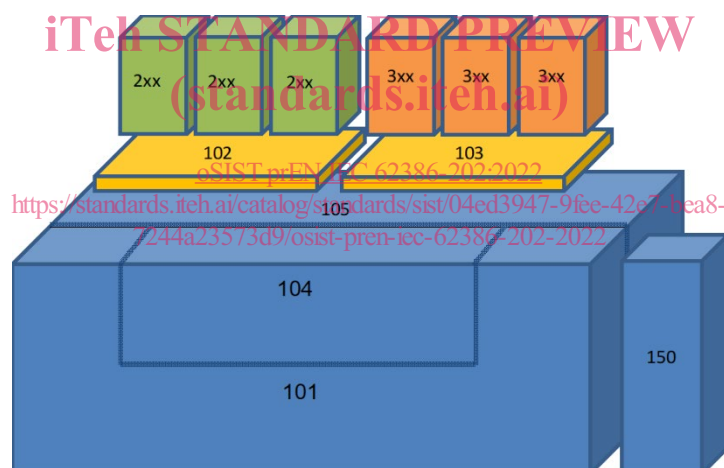
238 IEC 62386 contains several parts, referred to as a series. The 1xx series includes the basic
 239 specifications. Part 101 contains general requirements for system components, Part 102
 240 extends this information with general requirements for control gear and Part 103 extends it
 241 further with general requirements for control devices.

242 The 2xx parts extend the general requirements for control gear with lamp specific extensions
 243 (mainly for backward compatibility with Edition 1 of IEC 62386) and with control gear specific
 244 features.

245 The 3xx parts extend the general requirements for control devices with input device specific
 246 extensions describing the instance types as well as some common features that can be
 247 combined with multiple instance types.

248 This second edition of IEC 62386-202 is published in conjunction with IEC 62386-101:– and
 249 IEC 62386-102:– and with the various parts that make up the IEC 62386-2xx series for control
 250 gear, together with IEC 62386-103:– and the various parts that make up the IEC 62386-3xx
 251 series of particular requirements for control devices. The division into separately published
 252 parts provides for ease of future amendments and revisions. Additional requirements will be
 253 added as and when a need for them is recognised.

254 The setup of the standard is graphically represented in Figure 1 below.



255

256

Figure 1 - IEC 62386 graphical overview

257 When this part of IEC 62386 refers to any of the clauses of the IEC 62386-1xx series, the extent
 258 to which such a clause is applicable is specified. The other parts also include additional
 259 requirements, as necessary.

260 All numbers used in this International Standard are decimal numbers unless otherwise noted.
 261 Hexadecimal numbers are given in the format 0xVV, where VV is the value. Binary numbers are
 262 given in the format XXXXXXXXb or in the format XXXX XXXX, where X is 0 or 1, "x" in binary
 263 numbers means "don't care". Where a variable is referred by a bit number bit 0 is the Least
 264 Significant Bit.

265 The following typographic expressions are used:

266 Variables: *variableName* or *variableName*[3:0], giving only bits 3 to 0 of *variableName*

267 Range of values: [lowest, highest]

268 Command: "COMMAND NAME"

269

DIGITAL ADDRESSABLE LIGHTING INTERFACE –

Part 202: Particular requirements for control gear – Self-contained emergency Operation (device type 1)

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273
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275 **1 Scope**

276 This Part of IEC 62386 is applicable to control gear for control by digital signals of electronic
277 lighting equipment which is associated with self-contained emergency lighting as described in
278 IEC 61347-2-7 with additional control interface for configuring emergency operation.

279 This part is only applicable to control gear complying with IEC 62386-102 Ed.2

280 This part does not apply to centrally supplied emergency lighting control gear, which is specified
281 in IEC-62386-220.

282 **2 Normative references**

283 The following documents, in whole or in part, are normatively referenced in this document and
284 are indispensable for its application. For dated references, only the edition cited applies. For
285 undated references, the latest edition of the referenced document (including any amendments)
286 applies.

287 IEC 62386-101:–, *DIGITAL ADDRESSABLE LIGHTING INTERFACE – Part 101: General*
288 *requirements – System components*

289 IEC 62386-102:–, *DIGITAL ADDRESSABLE LIGHTING INTERFACE – Part 102: General*
290 *requirements – Control gear*

291 IEC 60598-2-22:2014, *Luminaires – Part 2-22: Particular requirements – luminaires for*
292 *emergency lighting.*

293 IEC 60598-2-22:2014/AMD1:2017, *Amendment 1 - Luminaires - Part 2-22:Particular*
294 *requirements - luminaires for emergency lighting*

295 IEC 62034: 2012, *Automatic test systems for battery powered emergency escape lighting.*

296 **3 Terms and definitions**

297 For the purposes of this document, the terms and definitions given in IEC 62386-101 and
298 IEC 62386-102 and the following apply.

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

- 301 • IEC electropedia: available at <http://www.electropedia.org/>
- 302 • ISO online browsing platform: available at <http://www.iso.org/obp>

303

304 **3.1**

305 **normal mode**

306 mode of operation in which normal supply is available and powering the control gear

307 **3.2**

308 **emergency mode**

309 mode of operation in which normal supply has failed and the control gear powers the lamp from
310 the battery

311 [SOURCE: based upon IEC 60598-2-22:2014 22.3.16]

312 **3.3**
313 **rest mode**
314 mode in which the lamp is intentionally extinguished whilst the normal supply is not available

315 [SOURCE: based upon: IEC 60598-2-22:2014 22.3.18]

316 **3.4**
317 **inhibit mode**
318 mode of operation in which the control gear is powered from the normal supply but prevented
319 from switching to emergency mode in the event of normal supply failure

320 [SOURCE: based upon: IEC 60598-2-22 22.3.20/ 22.3.21]

321 **3.5**
322 **battery cut-off**
323 mode of operation in which the normal supply is disconnected and the battery is below the
324 battery cut-off voltage

325 Note 1 to entry: Reaching this point may trigger the device to protect against extensive discharge as defined in
326 IEC 61347-2-7:2011 clause 3.4

327 **3.6**
328 **extended emergency mode**
329 mode of operation in which the normal supply is present, with the control gear operating the
330 lamp(s) at the emergency level and drawing power from either source

331 **3.7**
332 **function test**
333 mode of operation in which a test is performed to check the integrity of the circuit, change over
334 device, battery and function of the emergency lamp(s)

335 [SOURCE: based upon IEC 62034: 2012 clause 3.6]

336 **3.8**
337 **duration test**
338 mode of operation in which a test is performed to check the capability of the self-contained
339 battery to supply the control gear and lamp, within the limits of rated duration of emergency
340 operation

341 [SOURCE: based upon IEC 62034:2012 clause 3.7]

342 **3.9**
343 **extended test duration**
344 additional period of time for which the control gear must operate the lamp during a duration
345 test, before indicating a pass result

346 Note 1 to entry: Jurisdictions such as Australia and New Zealand require initial tests of new control gear and new
347 batteries to be longer than the standard rated duration to allow for possible battery degradation.

348 **3.10**
349 **hardwired inhibit input**
350 optional additional input of the control gear which prevents the control gear from going into the
351 emergency mode while activated

352 Note 1 to entry: The hardwired inhibit input is specified by the manufacturer. The state of the input may be "active"
353 or "inactive"

354 **3.11**
355 **prolong time**
356 time the extended emergency mode will last after restoration of normal supply, before switching
357 to normal mode

358 **3.12**
359 **Type D**
360 non-maintained, non-controllable self-contained emergency control gear which does not
361 operate the lamp(s) in normal or inhibit modes, and does not support level instructions nor
362 corresponding configuration commands

363 Note 1 to entry: Type D control gear may have a Switched Live (SL) input that may control companion gear on a
364 "piggy back" type emergency control gear. For the purpose of this standard this Switched Live input on Type D control
365 gear is not considered a hardwired switch.

366 [SOURCE: based upon IEC 60598-2-22 clause 22.3.6]

367 **3.13**
368 **Type C**
369 maintained, non-controllable self-contained emergency control gear which operates the lamp(s)
370 in all modes, but does not support level instructions nor corresponding configuration commands

371 Note 1 to entry: The lamp may still be controlled by a hardwired switch or separate interface.

372 [SOURCE: based upon IEC 60598-2-22:clause 22.3.5]

373 **3.14**
374 **Type B**
375 maintained, on/off controllable self-contained emergency control gear with PHM equal to 254
376 (100 %)

377 Note 1 to entry: If the normal supply is present, this type acts like a standard dimmable device with its minimum
378 level set to 254. Therefore this type supports execution of level instructions.

379 [SOURCE: based upon IEC 60598-2-22:clause 22.3.5]

380 **3.15**
381 **Type A**
382 maintained, dimming controllable self-contained emergency control gear with PHM < 254
383 (100 %)

384 Note 1 to entry: If the normal supply is present, this type acts like a standard dimmable device. Therefore this type
385 supports execution of level instructions.

386 [SOURCE: based upon IEC 60598-2-22:clause 22.3.5]

387 **3.16**
388 **hardwired switch**
389 optional additional input of Type A, B and C control gear, that is used to switch the lamp on and
390 off in normal or inhibit modes

391 Note 1 to entry: The hardwired switch input is specified by the manufacturer. The state of the switch may be "ON"
392 or "OFF".

393 **3.17**
394 **integral emergency control gear**
395 lamp control gear which forms a non-replaceable part of an emergency luminaire and which
396 cannot be tested separately from the luminaire

397 [SOURCE: based upon IEC 61347 clause 3.1.3]

398 **3.18**
399 **lamp cut-off voltage**
400 battery voltage, below which the battery can no longer power the lamp(s), and which is higher
401 than battery cut-off voltage

402 **3.19**
403 **battery cut-off voltage**
404 battery voltage, below which the battery can no longer power the control gear or lamp(s)

405 **3.20**
406 **emergency level**
407 level for emergency lamp operation, this may be configurable.

408 **3.21**409 **emergency physical maximum level**

410 physical maximum emergency level corresponding to the maximum light output the control gear
411 can operate at when in emergency mode

412 Note 1 to entry: Light Level behaviour in normal mode is not affected by this physical maximum level.

413 **3.22**414 **emergency physical minimum level**

415 physical minimum emergency level corresponding to the minimum light output the control gear
416 can operate at when in emergency mode.

417 Note 1 to entry: Light level behaviour in normal mode is not affected by this physical minimum level

418 **3.23**419 **normal supply**

420 External supply used for normal operation of the control gear. Explicitly excludes the self
421 contained DC source.

422 **3.24**423 **normal supply failure**

424 condition in which the external power supply has failed

425 [SOURCE: based upon IEC 60598-2-22:clause 22.3.13]

426 **4 General**427 **4.1 General**

428 The requirements of IEC 62386-102:— clause 4 apply, with the restrictions, changes and
429 additions identified below.

430 **4.2 Version number**

431 In clause 4.2 of IEC 62386-102:— “102” shall be replaced by “202” “version number” shall be
432 replaced by “extended version number” and “versionNumber” shall be replaced by
433 “extendedVersionNumber”.

434 **4.3 External power supply of bus units**

435 Control gear according to this part shall not be bus powered.

436 **4.4 Power interruption at bus units**437 **4.4.1 General**

438 The requirements of IEC 62386-101:— clause 4.11 apply, with the following, changes and
439 additions.

440 **4.4.2 Power interruptions of external power supply**

441 Interruptions of external power supply shall be defined as the period of time beginning with
442 failure of the normal supply and ending when the normal supply has been re-established within
443 the manufacturer-defined operating range. See IEC62386-101:—, clause 4.11.1

444

445 **4.4.3 Communication requirements in rest mode and emergency mode**

446 During both rest and emergency modes, the control gear shall be capable of processing
447 commands received via the interface. These commands are limited as per section 9.2

448 NOTE 1 It is the responsibility of the manufacturer to show that in case power is drawn from the battery, the
449 additional amount of power needed for communication during the rated emergency operation is considered when
450 designing the capacity.

451 NOTE 2 It is considered that those commands in 9.2 are limited to those required for managing emergency
452 lighting.

453 4.4.4 Endurance of REST MODE

454 With a fully-charged battery, if rest mode is entered from inhibit mode, or from execution of
 455 REST within 1 minute of entering emergency mode, the power consumption whilst in rest mode
 456 shall be sufficiently low such that rest mode continues for at least twice the rated duration time
 457 without battery cut-off mode being entered.

458 NOTE: It is recommended that the control gear and battery combination can operate in rest mode for a time equal to
 459 the rated duration or longer, after being in emergency mode for the rated duration or longer with “*emergencyLevel*”
 460 equal to “*emergencyPhMaxLevel*”.

461 5 Electrical specification

462 5.1 General

463 The requirements of IEC 62386-102:–, Clause 5, apply.

464 6 Interface power supply

465 The requirements of IEC 62386-102:–, Clause 6, apply.

466 7 Transmission Protocol Structure

467 The requirements of IEC 62386-102:–, Clause 7, apply.

468 8 Timing

469 The requirements of IEC 62386-102:–, Clause 8, apply.

470 9 Method of operation

471 9.1 General

472 The requirements of IEC 62386-102:–, Clause 9, apply with the following restrictions, changes
 473 and additions. These restrictions, changes and additions apply to all types (A, B, C and D),
 474 unless specified otherwise.

475 9.2 Command execution

476 To ensure compliance with emergency lighting requirements self-contained emergency control
 477 gear sometimes need to deviate from behaviour specified in IEC 62386-102. Whilst in any of
 478 the following modes:

- 479 • Emergency mode,
- 480 • REST mode,

481 the following restrictions shall apply:

- 482 • The control gear shall discard all instructions, all special commands and all application
 483 extended instructions, including both those defined in this document and those in other 2xx
 484 parts, with the following exceptions (see IEC 62386-102:–, clause 9.7):
 - 485 • “DTR0(*data*)”, “DTR1(*data*)”, “DTR2(*data*)”
 - 486 • “READ MEMORY LOCATION (*DTR1*, *DTR0*)”
 - 487 • “ENABLE DEVICE TYPE (*data*)”
 - 488 • Any command marked in Table 21 as Executed in mode' for the current mode.
- 489 • The control gear shall continue to process query commands. The contents of their answers
 490 shall be adapted according to 10.2.
- 491 • The control gear is not required to provide reliable responses to queries of other 2xx parts
 492 related to light output.

493 NOTE 1 The above requirements imply that as long as one of the mentioned modes of operation is enabled, only
 494 commands according to this specification are executed where applicable. This also applies for all IEC 62386-2xx
 495 parts.

496 Where applicable, these requirements apply in addition to restrictions made in 9.3.2.