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)

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**

34/879/CDV

COMMITTEE DRAFT FOR VOTE (CDV)

PROJECT NUMBER: **IEC 62386-202 ED2**	
DATE OF CIRCULATION: **2021-11-19**	CLOSING DATE FOR VOTING: **2022-02-11**
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IEC TC 34 : LIGHTING

SECRETARIAT: United Kingdom	SECRETARY: Mr Petar Luzajic
OF INTEREST TO THE FOLLOWING COMMITTEES:	PROPOSED HORIZONTAL STANDARD: ☐ Other TC/SCs are requested to indicate their interest, if any, in this CDV to the secretary.

FUNCTIONS CONCERNED:

☐ EMC ☐ ENVIRONMENT ☐ QUALITY ASSURANCE ☐ SAFETY

☒ SUBMITTED FOR CENELEC PARALLEL VOTING ☐ 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.

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:

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

PROPOSED STABILITY DATE: 2024

NOTE FROM TC/SC OFFICERS:

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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DIGITAL ADDRESSABLE LIGHTING INTERFACE –

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

FOREWORD

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

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

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

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

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

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.

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

- reconfirmed;
- withdrawn;
- replaced by a revised edition, or
- amended.

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

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.

INTRODUCTION

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

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

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

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

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

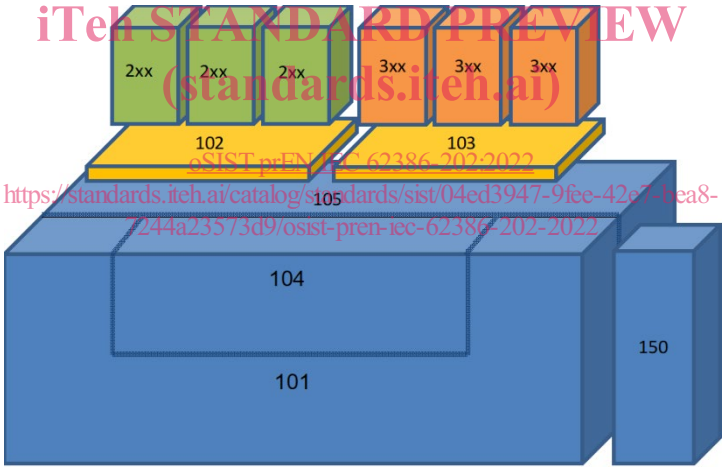

Figure 1 - IEC 62386 graphical overview

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

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

The following typographic expressions are used:

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

Range of values: [lowest, highest]

Command: “COMMAND NAME”

DIGITAL ADDRESSABLE LIGHTING INTERFACE –

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

1 Scope

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

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

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

2 Normative references

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

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

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

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

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

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

3 Terms and definitions

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

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

- IEC electropedia: available at http://www.electropedia.org/
- ISO online browsing platform: available at http://www.iso.org/obp

3.1
normal mode
mode of operation in which normal supply is available and powering the control gear

3.2
emergency mode
mode of operation in which normal supply has failed and the control gear powers the lamp from the battery

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

3.3
rest mode
mode in which the lamp is intentionally extinguished whilst the normal supply is not available

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

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

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

3.5
battery cut-off
mode of operation in which the normal supply is disconnected and the battery is below the battery cut-off voltage

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

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

3.7
function test

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

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

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

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

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

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

3.10
hardwired inhibit input
optional additional input of the control gear which prevents the control gear from going into the emergency mode while activated

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

3.11
prolong time
time the extended emergency mode will last after restoration of normal supply, before switching to normal mode

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

[SOURCE: based upon IEC 61347 clause 3.1.3]

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

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

3.20
emergency level
level for emergency lamp operation, this may be configurable.

3.21
emergency physical maximum level
physical maximum emergency level corresponding to the maximum light output the control gear can operate at when in emergency mode

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

3.22
emergency physical minimum level
physical minimum emergency level corresponding to the minimum light output the control gear can operate at when in emergency mode.

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

3.23
normal supply
External supply used for normal operation of the control gear. Explicitly excludes the self contained DC source.

3.24
normal supply failure
condition in which the external power supply has failed

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

4 General

4.1 General

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

4.2 Version number

In clause 4.2 of IEC 62386-102:–, "102" shall be replaced by "202", "version number" shall be replaced by "extended version number" and "*versionNumber*" shall be replaced by "*extendedVersionNumber*".

4.3 External power supply of bus units

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

4.4 Power interruption at bus units

4.4.1 General

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

4.4.2 Power interruptions of external power supply

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

4.4.3 Communication requirements in rest mode and emergency mode

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

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

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

4.4.4 Endurance of REST MODE

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

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

5 Electrical specification

5.1 General

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

6 Interface power supply

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

7 Transmission Protocol Structure

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

8 Timing

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

9 Method of operation

9.1 General

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

9.2 Command execution

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

- Emergency mode,
- REST mode,

the following restrictions shall apply:

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

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

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