IEC 62386-202

Edition 2.0 2022-12

INTERNATIONAL STANDARD

NORME INTERNATIONALE

colour inside

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



IEC 62386-202:2022-12(en-fr)



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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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IEC 62386-202 has been prepared by IEC technical committee 34: Lighting. It is an International Standard.

This second edition cancels and replaces the first edition published in 2009. This edition constitutes a technical revision.

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

a) scope updated,
b) hardwired switch operation can be disabled,
c) installation inhibit feature added,
d) memory bank added,
e) modes of operation clarified, with some changes and additions,
f) command added to enter extended emergency mode,

g) command added to extend time in duration test mode.

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

Draft	Report on voting
34/986/FDIS	34/1000/RVD

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

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

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.

This Part 202 of IEC 62386 is intended to be used in conjunction with:

- Part 101, which contains general requirements for system components;
- Part 102, which contains general requirements for control gear.

A list of all parts in the IEC 62386 series, published under the general title *Digital addressable lighting interface*, can be found on the IEC website.

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.

IMPORTANT – The "colour inside" logo on the cover page of this document 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 series. The IEC 62386 series specifies a bus system for control by digital signals of electronic lighting equipment. The IEC 62386-1xx 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. Part 104 and Part 105 can be applied to control gear or control devices. Part 104 gives requirements for wireless and alternative wired system components. Part 105 describes firmware transfer. Part 150 gives requirements for an auxiliary power supply which can be stand-alone, or built into control gear or control devices.

The IEC 62386-2xx series extends 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 IEC 62386-3xx series extends 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 intended to be used 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, and can be used 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 standards is graphically represented in Figure 1 below.

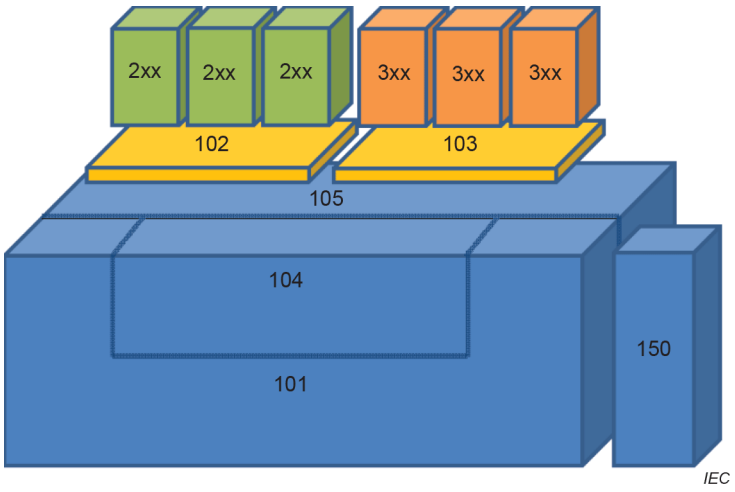


Figure 1 – IEC 62386 graphical overview

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 document 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 and "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 lighting (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 document is only applicable to control gear complying with IEC 62386-102.

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

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 62386-101:2022, *Digital addressable lighting interface – Part 101: General requirements – System components*

IEC 62386-102:2022, *Digital addressable lighting interface – Part 102: General requirements – Control gear*

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 terminology databases for use in standardization at the following addresses:

- IEC Electropedia: available at https://www.electropedia.org/
- ISO Online browsing platform: available at https://www.iso.org/obp

3.1
battery cut-off
mode of operation in which the normal supply is disconnected and the battery voltage is below the battery cut-off voltage

Note 1 to entry: Reaching this point can trigger the device to protect against extensive discharge as defined in IEC 61347-2-7:2011, 3.4 and IEC 61347-2-7:2011/AMD2:2021, 3.4.

3.2
battery cut-off voltage
battery voltage, below which the battery can no longer power the control gear or lamp(s)

3.3
duration test
DT
mode of operation in which a test is performed to check the capability of the battery to supply the control gear and lamp, within the limits of rated duration of emergency operation

[SOURCE: IEC 62034:2012, 3.7, modified – The definition has been revised to clarify that this is a mode of operation.]

3.4
emergency level
value representing the light output for emergency lamp operation

Note 1 to entry: In some control gear, the emergency level is configurable.

3.5
emergency mode
mode of operation in which the normal supply has failed and the control gear powers the lamp from the battery

[SOURCE: IEC 60598-2-22:2021, 22.3.17, modified – The definition has been revised to apply to the control gear.]

3.6
emergency physical maximum level
level corresponding to the maximum light output the control gear can operate at when in emergency mode

Note 1 to entry: The light level behaviour in normal mode is not affected by the emergency physical maximum level.

3.7
emergency physical minimum level
level corresponding to the minimum light output the control gear can operate at when in emergency mode

Note 1 to entry: The light level behaviour in normal mode is not affected by the emergency physical minimum level.

3.8
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

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

3.10
function test
FT
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: IEC 62034:2012, 3.6, modified – The existing term "functional test" has been replaced with "function test" and the definition has been revised to clarify that this is a mode of operation.]

3.11
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 can be "active" or "inactive".

3.12
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 can be "ON" or "OFF".

3.13
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: IEC 60598-2-22:2021, 22.3.21, modified – The definition of "remote inhibiting mode" has been modified to apply to the control gear.]

3.14
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: IEC 61347-1:2015, 3.1.3, modified – In the term "lamp controlgear" has been replaced with "emergency control gear" and in the definition, "emergency" has been added.]

3.15
lamp cut-off voltage
battery voltage, below which the battery can no longer power the lamp(s), and which is higher than the battery cut-off voltage

3.16
normal mode
mode of operation in which the normal supply is available and powers the control gear

3.17
normal supply
external supply used for normal operation of the control gear that explicitly excludes the self-contained DC source

3.18
normal supply failure
condition in which the normal supply has failed

3.19
prolong time
time the extended emergency mode will last after restoration of normal supply, before switching to normal mode

3.20
rest mode
mode in which the lamp is intentionally extinguished whilst the normal supply is not available

[SOURCE: IEC 60598-2-22:2021, 22.3.18, modified – The definition has been revised to apply to the control gear.]

3.21
type A control gear
maintained, dimming controllable self-contained emergency control gear with PHM (physical minimum level) < 254 (100 %)

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

3.22
type B control gear
maintained, on/off controllable self-contained emergency control gear with PHM (physical minimum level) equal to 254 (100 %)

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

3.23
type C control gear
maintained, non-controllable self-contained emergency control gear which operates the lamp(s) in normal and inhibit modes, but does not support level instructions nor corresponding configuration commands

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

[SOURCE: IEC 60598-2-22:2021, 22.3.5, modified – The term "maintained emergency luminaire" has been replaced with "type C control gear"; the definition has been revised and the note to entry has been added.]

3.24
type D control gear
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 can have a switched live (SL) input that can control companion gear on a "piggyback" type emergency control gear. For the purposes of this document this switched live input on type D control gear is not considered a hardwired switch.

[SOURCE: IEC 60598-2-22:2021, 22.3.6, modified – The term "non-maintained emergency luminaire" has been replaced with "type D control gear"; the definition has been revised and the note to entry has been added.]

4 General

4.1 General

The requirements of IEC 62386-102:2022, Clause 4 apply, with the restrictions, changes and additions identified below.

4.2 Version number

In 4.2 of IEC 62386-102:2022, "102" shall be replaced by "202", "version number" shall be replaced by "extended version number", "*versionNumber*" shall be replaced by "*extendedVersionNumber*" and "Table 16" shall be replaced by "Table 20".

4.3 Power supply of bus units

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