IEC 62386-101

Edition 3.0 2022-11
COMMENTED VERSION

INTERNATIONAL STANDARD

colour inside

Digital addressable lighting interface – Part 101: General requirements – System components

IEC 62386-101:2022-11 CMV(en)

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FOREWORD

1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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This commented version (CMV) of the official standard IEC 62386-101:2022 edition 3.0 allows the user to identify the changes made to the previous IEC 62386-101:2014+ AMD1:2018 CSV edition 2.1. Furthermore, comments from IEC TC 34 experts are provided to explain the reasons of the most relevant changes, or to clarify any part of the content.

A vertical bar appears in the margin wherever a change has been made. Additions are in green text, deletions are in strikethrough red text. Experts' comments are identified by a blue-background number. Mouse over a number to display a pop-up note with the comment.

This publication contains the CMV and the official standard. The full list of comments is available at the end of the CMV.

IEC 62386-101 has been prepared by IEC technical committee 34: Lighting. It is an International Standard.

This third edition cancels and replaces the second edition published in 2014 and Amendment 1:2018. This edition constitutes a technical revision.

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

a) the scope has been updated;
b) safety and earthing have been updated and extended;
c) references have been updated;
d) the use of bus-power and external-power has been clarified;
e) polarity sensitivity for bus units including a bus power supply has been updated;
f) frame sizes of 32 bits are no longer reserved.

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

Draft	Report on voting
34/947/FDIS	34/988/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 101 of IEC 62386 is intended to be used in conjunction with:

- Part 102, which contains general requirements for the relevant product type (control gear), and with the appropriate Part 2xx (particular requirements for control gear);
- Part 103, which contains general requirements for the relevant product type (control devices), and the appropriate Part 3xx (particular requirements for control devices);
- Part 104, which contains general requirements for wireless and alternative wired system components;
- Part 105, which contains particular requirements for firmware transfer for control gear and control devices.

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

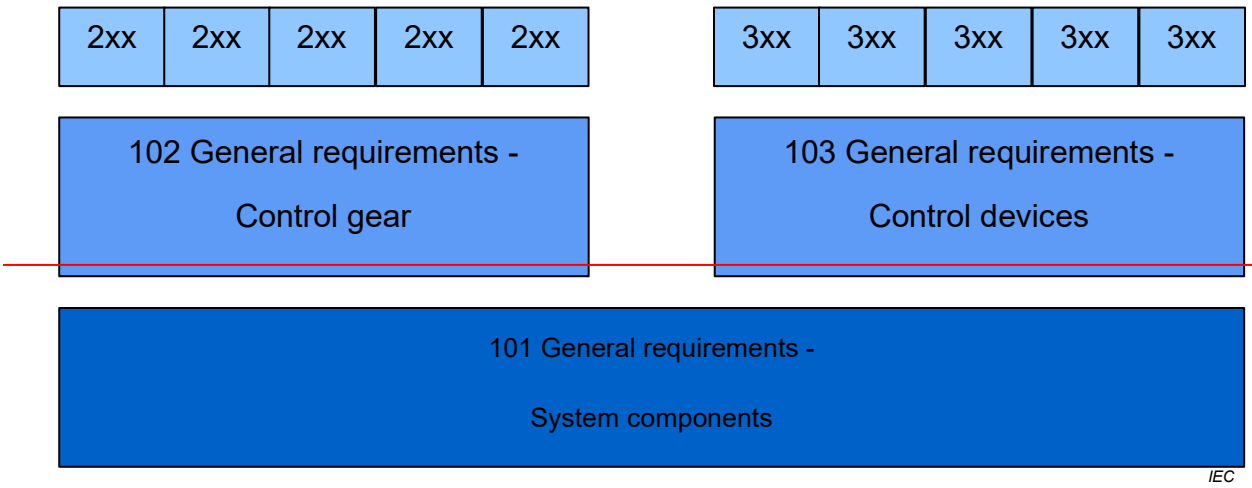
IEC 62386 contains several parts, referred to as series. The IEC 62386 series specifies a bus system for control by digital signals of electronic lighting equipment. The IEC 62386-1xx series includes the basic specifications. Part 101 contains general requirements for system components, Part 102 extends this information with general requirements for control gear and Part 103 extends it further with general requirements for control devices. Parts 104 and 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~~ third edition of IEC 62386-101 is intended to be used in conjunction with IEC 62386-102~~:2014 and IEC 62386-102:2014/AMD1:—~~ and with the various parts that make up the IEC 62386-2xx series for control gear, together with IEC 62386-103~~:2014 and IEC 62386-103:2014/AMD1 —~~ 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 recognized.

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



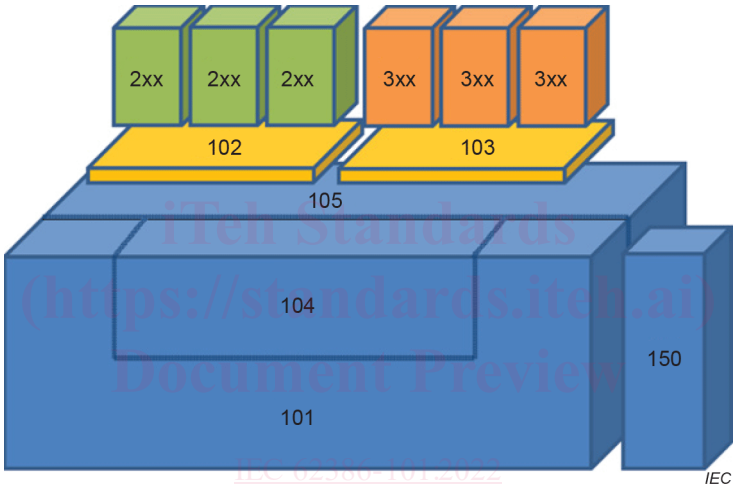


Figure 1 – IEC 62386 graphical overview 1

When this part of IEC 62386 refers to any of the clauses of the other ~~two~~ parts of the IEC 62386-1xx series, the extent to which such a clause is applicable ~~and the order in which the tests are to be performed are~~ 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, "x" in binary numbers means "don't care".

DIGITAL ADDRESSABLE LIGHTING INTERFACE –

Part 101: General requirements – System components

1 Scope

This part of IEC 62386 is applicable to system components in a bus system for control by digital signals of electronic lighting equipment ~~which is in line with the requirements of IEC 61347 (all parts), with the addition of DC supplies~~.

~~NOTE Tests in this standard are type tests. Requirements for testing individual bus units during production are not included.~~

The control methods, algorithms and data exchange methods of application controllers used for lighting control are not within the scope of the IEC 62386 series. EMC requirements are not within the scope of the IEC 62386 series. **2**

2 Normative references **3**

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 61347-1:2015, *Lamp controlgear – Part 1: General and safety requirements*
IEC 61347-1:2015/AMD1:2017

IEC 62386-102:~~2014~~2022, *Digital addressable lighting interface – Part 102: General requirements – Control gear*
~~IEC 62386-102:2014/AMD1:–~~ [1]

IEC 62386-103:~~2014~~2022, *Digital addressable lighting interface – Part 103: General requirements – Control devices*
~~IEC 62386-103:2014/AMD1:–~~ [2]

IEC 62386-104, *Digital addressable lighting interface – Part 104: General requirements – Wireless and alternative wired system components*

IEC 62386-105, *Digital addressable lighting interface – Part 105: Particular requirements for control gear and control devices – Firmware Transfer*

IEC 62386-2xx (all parts), *Digital addressable lighting interface – Part 2xx: Particular requirements for control gear*

IEC 62386-3xx (all parts), *Digital addressable lighting interface – Part 3xx: Particular requirements for control devices*

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[1] ~~Under preparation. Stage at the time of publication: IEC DECFDIS 62386-102/AMD1:2018.~~

[2] ~~Under preparation. Stage at the time of publication: IEC RFDIS 62386-103/AMD1:2018.~~