



IEC 62386-302

Edition 1.1 2024-04  
CONSOLIDATED VERSION

# INTERNATIONAL STANDARD



Digital addressable lighting interface –  
Part 302: Particular requirements – Input devices – Absolute input devices

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INTERNATIONAL  
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**DIGITAL ADDRESSABLE LIGHTING INTERFACE –****Part 302: Particular requirements – Input devices –  
Absolute input devices**

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**IEC 62386-302 edition 1.1 contains the first edition (2017-05) [documents 34C/1312/FDIS and 34C/1332/RVD] and its amendment 1 (2024-04) [documents 34/1012/CDV and 34/1077A/RVC].**

**In this Redline version, a vertical line in the margin shows where the technical content is modified by amendment 1. Additions are in green text, deletions are in strikethrough red text. A separate Final version with all changes accepted is available in this publication.**

International Standard IEC 62386-302 has been prepared by subcommittee 34C: Auxiliaries for lamps, of IEC technical committee 34: Lamps and related equipment.

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

This Part 302 of IEC 62386 is intended to be used in conjunction with:

- Part 101, which contains general requirements for system components;
- Part 103, which contains general requirements for 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 and its amendment will remain unchanged until the stability date indicated on the IEC website under [webstore.iec.ch](http://webstore.iec.ch) in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn, or
- revised.

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### INTRODUCTION

IEC 62386 contains several parts, referred to as 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 first edition of IEC 62386-302 is intended to be used in conjunction with ~~IEC 62386-101:2014, IEC 62386-101:2014/AMD1:~~ IEC 62386-101:2022, ~~IEC 62386-103:2014 and IEC 62386-103:2014/AMD1:~~ IEC 62386-103:2022. The division of IEC 62386 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.

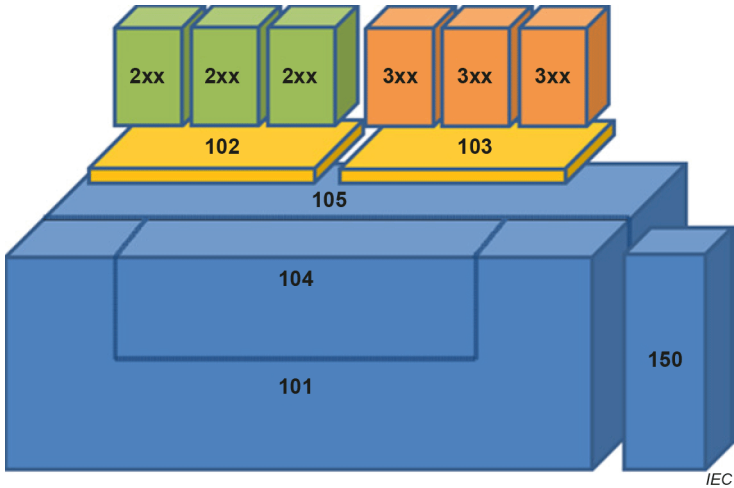
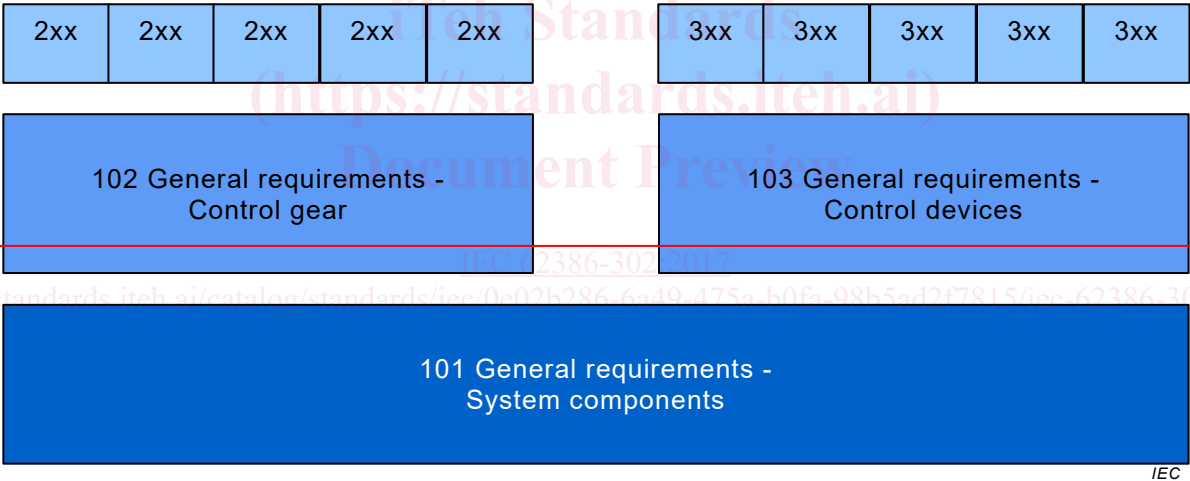


Figure 1 – IEC 62386 graphical overview



This document, and the other parts that make up the IEC 62386-300 series, in referring to any of the clauses of IEC 62386-1XX, specifies the extent to which such a clause is; the parts also include additional requirements, as necessary.

Where the requirements of any of the clauses of IEC 62386-1XX are referred to in this document by the sentence “The requirements of IEC 62386-1XX, Clause “n” apply”, this sentence is to be interpreted as meaning that all requirements of the clause in question of Part 1XX apply, except any which are clearly inapplicable.

The standardization of the control interface for control devices is intended to achieve compatible co-existence and multi-master operation between electronic control gear and lighting control devices, below the level of building management systems. This document describes a method of implementing control devices.

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”.

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”

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## DIGITAL ADDRESSABLE LIGHTING INTERFACE –

### Part 302: Particular requirements – Input devices – Absolute input devices

#### 1 Scope

~~This part of IEC 62386 specifies a bus system for control by digital signals of electronic lighting equipment which is in line with the requirements of IEC 61347, with the addition of DC supplies.~~

~~This document is only applicable to IEC 62386-103:2014 and IEC 62386-103:2014/AMD1:— input devices that make the lighting control system sensitive to absolute input devices such as switches or sliders. An absolute input device always has a deterministic state, such as a position between start and end point.~~

~~NOTE—Requirements for testing individual products during production are not included.~~

This part of IEC 62386 is applicable to input devices that provide the lighting control system with absolute switch, slider or rotary switch information, such as a position between start and end points.

This document is only applicable to input devices complying with IEC 62386-103:2022.

#### 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:~~2014~~2022, *Digital addressable lighting interface – Part 101: General requirements – System components*

~~IEC 62386-101:2014/AMD1:—<sup>1</sup>~~

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

~~IEC 62386-103:2014/AMD1—<sup>2</sup>~~

IEC 62386-333:~~—<sup>3</sup>~~2018, *Digital addressable lighting interface – Part 333: Particular requirements for control devices – Manual configuration (feature type 33)*

#### 3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 62386-101 and IEC 62386-103 and the following apply.

<sup>1</sup>~~—Under preparation. Stage at the time of publication: IEC ACDV 62386-101/AMD1:2017.~~

<sup>2</sup>~~—Under preparation. Stage at the time of publication: IEC ACDV 62386-103/AMD1:2017.~~

<sup>3</sup>~~—Under preparation. Stage at the time of publication: IEC CCDV 62386-333:2017.~~

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

#### **instance**

analogue or binary signal processing unit of an input device

[SOURCE: IEC 62386-101:2014/2022, 3.29, modified — addition of “analogue or binary”]

### 3.2

#### **analogue input**

means for the environment to interact with the lighting control system and known to be represented by a specific value relative to the known upper and lower boundary

### 3.3

#### **binary input**

means for the environment to interact with the lighting control system and known to be in open or closed state

### 3.4

#### **bouncing**

tendency of any two contacts in an electronic device to generate multiple signals as the contacts close or open

### 3.5

#### **debouncing**

any kind of hardware device or software that ensures that only a single signal will be acted upon for a single opening or closing of a contact

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### 3.6

#### **slider**

means for the end user to interact with a control lighting system and known to be in a specific position

### 3.7

#### **strictly monotonic**

either entirely increasing or decreasing without repeating values

~~Note 1 to entry: Function  $f$  defined on a subset of the real numbers with real values is called monotonically increasing, if for all  $x$  and  $y$  such that  $x < y$  one has  $f(x) < f(y)$ , so  $f$  preserves the order. Likewise, a function is called monotonically decreasing if, whenever  $x < y$ , then  $f(x) > f(y)$  so it reverses the order. For this document strictly monotonic is defined as either monotonically increasing or monotonically decreasing.~~

### 3.8

#### **switch**

means for the end user to interact with the lighting control system and known to be in open or closed state

## 4 General

### 4.1 General

The requirements of ~~IEC 62386-103:2014 and IEC 62386-103:2014/AMD1:~~ IEC 62386-103:2022, Clause 4 apply, with the restrictions, changes and additions identified below.

## 4.2 Version number

In 4.2 of ~~IEC 62386-103:2014 and IEC 62386-103:2014/AMD1:~~ IEC 62386-103:2022, “103” shall be replaced by “302”, “version number” shall be replaced by “extended version number” and “*versionNumber*” shall be replaced by “*extendedVersionNumber*”.

## 4.3 Insulation

According to ~~IEC 61347-1~~ applicable safety standards, it ~~might~~ can be required that the input device has at least supplementary insulation to accessible parts. This depends on the connected components. ~~In case internal sliders or switches are used, the input device shall have at least supplementary insulation. In case of external connected components, it depends on the requirements imposed on these components.~~ In this case special attention should be paid with respect to the switches, sliders, rotaries or other sensor input components being used.

NOTE ~~IEC 62386-103:2014 and IEC 62386-103:2014/AMD1:~~ IEC 62386-103:2022 requires system components to have at least basic insulation. Sliders and switches are intended to be safely operable by end users.

## 5 Electrical specification

The requirements of ~~IEC 62386-103:2014 and IEC 62386-103:2014/AMD1:~~ IEC 62386-103:2022, Clause 5 apply.

## 6 Interface power supply

The requirements of ~~IEC 62386-103:2014 and IEC 62386-103:2014/AMD1:~~ IEC 62386-103:2022, Clause 6 apply.

## 7 Transmission protocol structure

The requirements of ~~IEC 62386-103:2014 and IEC 62386-103:2014/AMD1:~~ IEC 62386-103:2022, Clause 7 apply.

NOTE Subclause 9.3.3.2 provides detailed event information applicable to instances.

## 8 Timing

The requirements of ~~IEC 62386-103:2014 and IEC 62386-103:2014/AMD1:~~ IEC 62386-103:2022, Clause 8 apply.

## 9 Method of operation

### 9.1 General

The requirements of ~~IEC 62386-103:2014 and IEC 62386-103:2014/AMD1:~~ IEC 62386-103:2022, Clause 9 apply, with the following restrictions and additions.

### 9.2 Instance type

The instance type (“*instanceType*”) shall be equal to 2.