IEC 62386-201

Edition 2.0 2015-05

INTERNATIONAL STANDARD

colour inside

Digital addressable lighting interface – Part 201: Particular requirements for control gear – Fluorescent lamps (device type 0)

IEC 62386-201:2015-05(en)

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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FOREWORD

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International Standard IEC 62386-201 has been prepared by subcommittee 34C: Auxiliaries for lamps, of IEC technical committee 34: Lamps and related equipment.

This second edition cancels and replaces the first edition published in 2009 and constitutes a technical revision. The essential changes with respect to the first edition are:

- references to subclauses in IEC 62386-101 and IEC 62386-102 updated to the new structure of the standard;
- test sequence reworked and description of the test sequences in form of a pseudo code instead of flow charts.

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

CDV	Report on voting
34C/1082/CDV	34C/1103/RVC

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 Part 201 of IEC 62386 is intended to be used in conjunction with:

- IEC 62386-101, which contains general requirements for system components;
- IEC 62386-102, which contains general requirements for the control gear.

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

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- withdrawn,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 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.

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

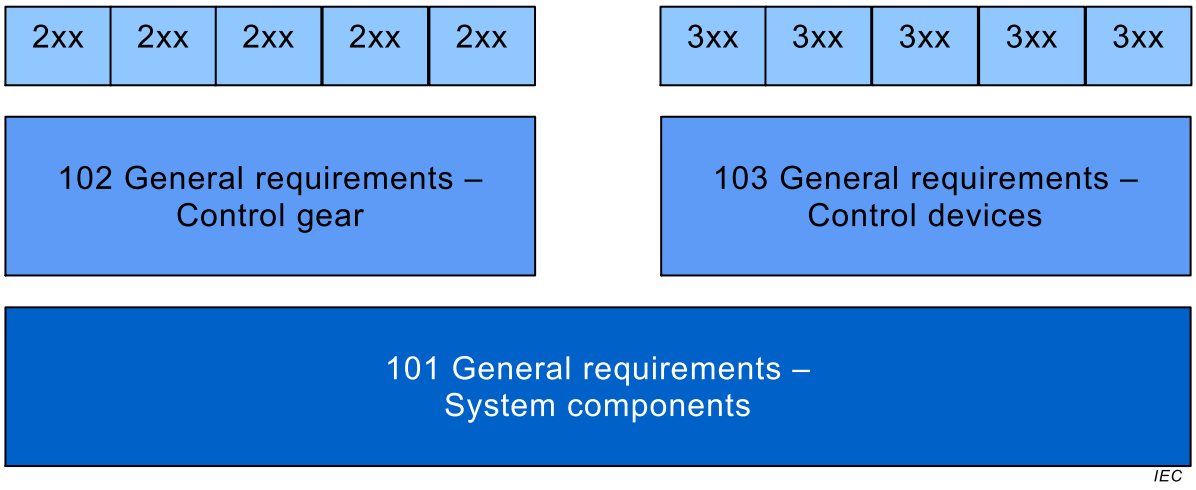

Figure 1 – IEC 62386 graphical overview

This second edition of IEC 62386-201 is published in conjunction with the second edition of IEC 62386-101 and the second edition of IEC 62386-102. 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.

This International Standard, and the other parts that make up the IEC 62386-200 series, in referring to any of the clauses of IEC 62386-101 or IEC 62386-102, specify the extent to which such a clause is applicable and the order in which the tests are to be performed; the parts also include additional requirements, as necessary.

Where the requirements of any of the clauses of IEC 62386-101 or IEC 62386-102 are referred to in this International Standard by the sentence "The requirements of fluorescent lamp control gear (device type 0) shall conform to IEC 62386-1xx, Clause “n”, this sentence is to be interpreted as meaning that all requirements of the clause in question of Part 101 or Part 102 apply, except any which are inapplicable to the specific type of lamp control gear covered by Part 201.

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".

DIGITAL ADDRESSABLE LIGHTING INTERFACE –

Part 201: Particular requirements for control gear – Fluorescent lamps (device type 0)

1 Scope

This part of IEC 62386 specifies a bus system for control by digital signals of electronic lighting equipment. This electronic lighting equipment should be in line with the requirements of IEC 61347.

This document is applicable to control gear associated with fluorescent lamps.

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

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 61347 (all parts), *Lamp controlgear*

IEC 62386-101:2014, *Digital addressable lighting interface – Part 101: General requirements – System components*

IEC 62386-102:2014, *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 Clause 3 of IEC 62386-101:2014 and Clause 3 of IEC 62386-102:2014 apply.

4 General

The requirements of IEC 62386-102:2014, Clause 4 apply, with the following exception:

Replace Subclause 4.2 by the following:

4.2 Extended version number

The extended version number of this document shall be in the format "x.y", where the major extended version number x is in the range of 0 to 62 and the minor extended version number y is in the range of 0 to 2. When the extended version number is encoded into a byte, the major extended version number x shall be placed in bits 7 to 2 and the minor extended version number y shall be placed in bits 1 to 0.

At each amendment to an edition of IEC 62386-201, the minor extended version number shall be incremented by one.

At a new edition of IEC 62386-201, the major extended version number shall be incremented by one and the minor extended version number shall be set to 0.

The current extended version number is "2.0" and is encoded in *extendedVersionNumber*.

NOTE IEC allows normally for 2 amendments before a new edition is created.

5 Electrical specification

The requirements of IEC 62386-101:2014, Clause 5 apply.

6 Interface power supply

If a power supply is integrated into a control gear, the requirements of IEC 62386-101:2014, Clause 6 apply.

7 Transmission protocol structure

7.1 General

The requirements of Subclause 7.1 of IEC 62386-101:2014 apply.

7.2 Bit encoding

The requirements of Subclause 7.2 of IEC 62386-101:2014 apply.

7.3 Frame description

The requirements of Subclause 7.3 of IEC 62386-101:2014 apply.

7.4 Frame types

The requirements of Subclause 7.4 of IEC 62386-101:2014 apply.

7.5 16 bit forward frame encoding

The requirements of Subclause 7.2 of IEC 62386-102:2014 apply.

8 Timing

The requirements of IEC 62386-101:2014, Clause 8 apply.

9 Method of operation

The requirements of IEC 62386-102:2014, Clause 9 apply.

10 Declaration of variables

The requirements of IEC 62386-102:2014, Clause 10 apply, with the following additional variables for this device type, as indicated in Table 1.

Table 1 – Declaration of additional variables

Variable	Default value (factory)	Reset value	Power-on value	Range of validity	Memory type
"*extendedVersionNumber*"	2.0	no change	no change	00001000b	ROM
"*deviceType*"	0	no change	no change	0	ROM

11 Definition of commands

The requirements of IEC 62386-102:2014, Clause 11 apply, with the following exceptions:

Amendment of Subclause 11.6 of IEC 62386-102:2014 as follows:

11.6 APPLICATION EXTENDED COMMANDS

11.6.1 General

Amendment:

Replace *data* by *deviceType*.

11.6.2 QUERY EXTENDED VERSION NUMBER

Replacement:

The answer shall be *extendedVersionNumber* when device type *deviceType* has been enabled.

Refer to Subclause 4.1 for further information.

Amendment of Subclause 11.7 of IEC 62386-102 as follows:

11.7 Special commands

11.7.14 ENABLE DEVICE TYPE (*data*)

Addition:

data shall be equal to *deviceType* to enable the command set as defined in this standard.

12 Test procedures

The requirements of IEC 62386-102:2014, Clause 12 apply, with the following exceptions:

Additional subclause:

12.1 Application extended commands tests

12.1.1 Check extended version number

The answer to QUERY EXTENDED VERSION NUMBER shall be checked. The correct answer is 8, which represents extended version number 2.0.

NOTE the principle mechanism of correct enabling different device types is checked by sequences defined in part 102 of this standard.

Test description:

```
// get extended version number using QUERY EXTENDED VERSION NUMBER
ENABLE DEVICE TYPE 0
answer = QUERY EXTENDED VERSION NUMBER
if (answer == NO)
        error 1 DUT did not answer QUERY EXTENDED VERSION NUMBER
else
        answerMajor = answer >> 2
        answerMinor = answer & 0x03
        if ((answerMajor == 2) AND (answerMinor == 0))
                report 1 Reported extended version number is
                        answerMajor.answerMinor.
        else
                error 2 Incorrect extended version number.
                        Actual: answerMajor.answerMinor. Expected: 2.0.
        endif
endif
```

12.1.2 Reserved application extended commands

The test sequence checks if the control gear answers to reserved application extended commands, which shall not be the case.

Test description:

```
// check reaction on reserved application extended commands
RESET
wait 300 ms
for (j = 0; j <31; j++)
        // calculate opcode byte
        opcode = (224 + j)
        ENABLE DEVICE TYPE 0
        // send broadcast application extended command
        answer = COMMAND[0xFF, opcode]
        if (answer != NO)
                error 1 Answer to reserved application extended command opcode.
        endif
endfor
```

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