

AS/NZS 62386.105:2021



Australian/New Zealand Standard™

# Digital addressable lighting interface

Part 105: Particular requirements for control gear and control devices  
— Firmware transfer (IEC 62385-105:2020 (ED. 1.0) MOD)



AS/NZS 62386.105:2021

This Joint Australian/New Zealand Standard™ was prepared by Joint Technical Committee EL-041, Lamps and Related Equipment. It was approved on behalf of the Council of Standards Australia on 09 August 2021 and by the New Zealand Standards Approval Board on 04 August 2021.

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The following are represented on Committee EL-041:

Australian Industry Group  
Better Regulation Division (Fair Trading, Safework NSW, TestSafe)  
CHOICE  
Consumer Electronics Suppliers Association  
Consumers Federation of Australia  
Department of Industry, Science, Energy and Resources  
Electrical Compliance Testing Association of Australia  
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Joint Accreditation System of Australia and New Zealand  
Joint Accreditation System of Australia and New Zealand —New Zealand  
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and control devices — Firmware Transfer (IEC  
62385-105:2020 (ED.1.0) MOD)**

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## Preface

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee EL-041, Lamps and Related Equipment.

The objective of this document is to specify requirements for firmware transfer for control gear and control devices.

Typically, a bus unit according to IEC 62386 (all parts) contains firmware. There are circumstances where it might be necessary to change the firmware after production or shipping of the product.

For example, if the bus unit does not operate as intended. In such a case, a firmware update of a bus unit via the interface is beneficial.

This firmware update process is primarily designed to be a bug fix process, not a feature extension process. Nevertheless, the firmware update process can be used for feature extensions. It is important that the risk of negative effects to the complete system is considered in detail.

This document is an adoption with national modifications, and has been reproduced from, IEC 62386-105:2020, *Digital addressable lighting interface — Part 105: Particular requirements for control gear and control devices — Firmware transfer*. The modifications are additional requirements and are set out in [Appendix ZZ](#), which has been added at the end of the source text.

[Appendix ZZ](#) lists the variations to IEC 62386-105:2020 for the application of this document in Australia and New Zealand.

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- (a) In the source text “this part of 62386” should read “this document”.
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Australian or Australian/New Zealand Standard, that are identical adoptions of international normative references may be used interchangeably. Refer to the online catalogue for information on specific Standards.

The terms “normative” and “informative” are used in Standards to define the application of the appendices or annexes to which they apply. A “normative” appendix or annex is an integral part of a Standard, whereas an “informative” appendix or annex is only for information and guidance.

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

## DIGITAL ADDRESSABLE LIGHTING INTERFACE –

**Part 105: Particular requirements for control gear and control devices –  
Firmware transfer**

## FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the 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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International Standard IEC 62386-105 has been prepared by IEC technical committee 34: Lamps and related equipment.

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

FDIS	Report on voting
34/675/FDIS	34/688/RVD

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

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

This Part 105 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 the relevant product type (control gear), and with the appropriate Parts 2xx (particular requirements for control gear);
- Part 103, which contains general requirements for the relevant product type (control devices), and the appropriate Parts 3xx (particular 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 will remain unchanged until the stability date indicated on the IEC website under "<http://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.

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## INTRODUCTION

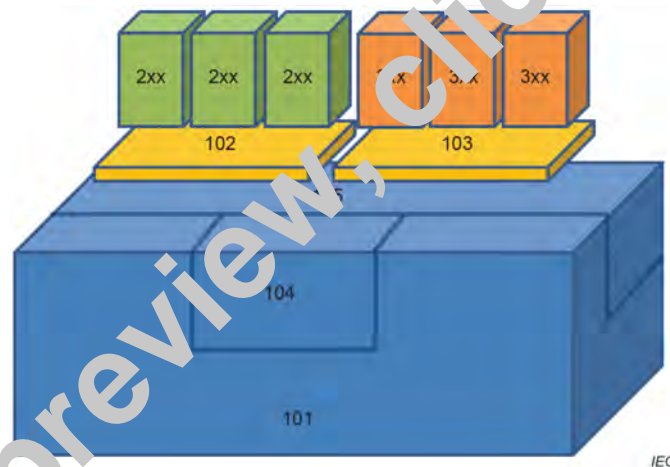
IEC 62386 contains several parts, referred to as series. The IEC 62386 series specifies a bus system for control by digital signals of electronic lighting equipment. The IEC 62386-1xx series includes the basic specifications. Part 101 contains general requirements for system components, Part 102 extends this information with general requirements for control gear and Part 103 extends it further with general requirements for control devices.

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 lamp 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 62386-105 is intended to be used in conjunction with IEC 62386-101, IEC 62386-102 and 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 recognized.

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 and the order in which the tests are to be performed are 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".

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 105: Particular requirements for control gear and control devices – Firmware transfer

#### 1 Scope

This part of IEC 62386 applies to control gear and control devices.

Typically, a bus unit according to IEC 62386 (all parts) contains firmware. There are circumstances where it might be necessary to change the firmware after production or shipping of the product. For example if the bus unit does not operate as intended. In such a case, a firmware update of a bus unit via the interface is beneficial.

This firmware update process is primarily designed to be a bug fix process, not a feature extension process. Nevertheless the firmware update process can be used for feature extensions. But it is important that the risk of negative effects to the complete system is considered in detail.

NOTE Annex D provides a “Firmware update management check sheet” to support risk estimation.

#### 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, *Digital addressable lighting interface – Part 101: General requirements – System components*  
IEC 62386-101:2014/AMD1:2018

IEC 62386-102:2014, *Digital addressable lighting interface – Part 102: General requirements – Control gear*  
IEC 62386-102:2014/AMD1:2018

IEC 62386-103:2014, *Digital addressable lighting interface – Part 103: General requirements – Control devices*  
IEC 62386-103:2014/AMD1:2018

#### 3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 62386-101, IEC 62386-102 and IEC 62386-103 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>