
Digitalni naslovljivi vmesnik za razsvetljavo - 105. del: Posebne zahteve za krmilja in krmilne naprave - Prenos strojne programske opreme (IEC 62386-105:2020)

Digital addressable lighting interface - Part 105: Particular requirements for control gear and control devices - Firmware Transfer (IEC 62386-105:2020)

Digital adressierbare Schnittstelle für die Beleuchtung - Teil 105: Besondere Anforderungen für Betriebs- und Steuergeräte - Firmware Übertragung (IEC 62386-105:2020)

Interface d'éclairage adressable numérique - Partie 105: Exigences particulières pour appareillages et dispositifs de commande - Transfert du microprogramme (IEC 62386-105:2020)

ITeH STANDARD PREVIEW
(standards.iteh.ai)
SIST EN IEC 62386-105:2020
<https://standards.iteh.ai/catalog/standards/sist/72ade74a-3c02-4b44-9c80-530855dbbbd5/sist-en-iec-62386-105-2020>

Ta slovenski standard je istoveten z: EN IEC 62386-105:2020

ICS:

29.140.50	Instalacijski sistemi za razsvetljavo	Lighting installation systems
35.200	Vmesniška in povezovalna oprema	Interface and interconnection equipment

SIST EN IEC 62386-105:2020 en

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN IEC 62386-105:2020](https://standards.iteh.ai/catalog/standards/sist/72ade74a-3c02-4b44-9c80-530855dbbbd5/sist-en-iec-62386-105-2020)

<https://standards.iteh.ai/catalog/standards/sist/72ade74a-3c02-4b44-9c80-530855dbbbd5/sist-en-iec-62386-105-2020>

EUROPEAN STANDARD

EN IEC 62386-105

NORME EUROPÉENNE

EUROPÄISCHE NORM

May 2020

ICS 29.140.50; 29.140.99

English Version

Digital addressable lighting interface - Part 105: Particular requirements for control gear and control devices - Firmware Transfer
(IEC 62386-105:2020)

Interface d'éclairage adressable numérique - Partie 105: Exigences particulières pour appareillages et dispositifs de commande - Transfert du microprogramme
(IEC 62386-105:2020)

Digital adressierbare Schnittstelle für die Beleuchtung - Teil 105: Besondere Anforderungen für Betriebs- und Steuergeräte - Firmware Übertragung
(IEC 62386-105:2020)

This European Standard was approved by CENELEC on 2020-04-30. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.



European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

EN IEC 62386-105:2020 (E)**European foreword**

The text of document 34/675/FDIS, future edition 1 of IEC 62386-105, prepared by IEC/TC 34 "Lighting" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 62386-105:2020.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2021-01-30
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2023-04-30

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC shall not be held responsible for identifying any or all such patent rights.

iTeh STANDARD PREVIEW
Endorsement notice
(standards.itih.ai)

The text of the International Standard IEC 62386-105:2020 was approved by CENELEC as a European Standard without any modification.

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

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.

NOTE 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 62386-101	2014	Digital addressable lighting interface - Part 101: General requirements - System components	EN 62386-101	2014
+ A1	2018		+ A1	2018
IEC 62386-102	2014	Digital addressable lighting interface - Part 102: General requirements - Control gear	EN 62386-102	2014
+ A1	2018		+ A1	2018
IEC 62386-103	2014	Digital addressable lighting interface - Part 103: General requirements - Control devices	EN 62386-103	2014
+ A1	2018		+ A1	2018

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN IEC 62386-105:2020](https://standards.iteh.ai/catalog/standards/sist/72ade74a-3c02-4b44-9c80-530855dbbbd5/sist-en-iec-62386-105-2020)

<https://standards.iteh.ai/catalog/standards/sist/72ade74a-3c02-4b44-9c80-530855dbbbd5/sist-en-iec-62386-105-2020>



IEC 62386-105

Edition 1.0 2020-03

INTERNATIONAL STANDARD

NORME INTERNATIONALE



**Digital addressable lighting interface –
Part 105: Particular requirements for control gear and control devices –
Firmware transfer**

**Interface d'éclairage adressable numérique –
Partie 105: Exigences particulières pour appareillages et dispositifs de
commande – Transfert du microprogramme**

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

COMMISSION
ELECTROTECHNIQUE
INTERNATIONALE

ICS 29.140.50; 29.140.99

ISBN 978-2-8322-8020-1

**Warning! Make sure that you obtained this publication from an authorized distributor.
Attention! Veuillez vous assurer que vous avez obtenu cette publication via un distributeur agréé.**

CONTENTS

FOREWORD.....	4
INTRODUCTION.....	6
1 Scope.....	7
2 Normative references	7
3 Terms and definitions	7
4 General	8
4.1 General.....	8
4.2 Transmitters and receivers in bus units.....	8
4.3 Logical units in a bus unit	8
5 Electrical specification.....	8
6 Interface power supply	8
7 Transmission protocol structure.....	8
7.1 General.....	8
7.2 32 bit forward frame encoding.....	9
8 Timing	9
9 Method of operation.....	9
9.1 General.....	9
9.2 Data transmission.....	9
9.3 Duration.....	9
9.4 Security	10
9.5 Firmware update features.....	10
9.6 Update process.....	10
9.6.1 Start firmware update.....	10
9.6.2 Data transfer	10
9.6.3 Persistent variables during firmware update	12
9.6.4 Firmware version number	13
9.6.5 Firmware update in a system	13
9.6.6 Error recovery.....	13
10 Declaration of variables	13
11 Definition of commands	14
11.1 General.....	14
11.2 Overview sheets	14
11.3 Commands	16
11.3.1 General	16
11.3.2 Standard commands.....	16
11.3.3 Data transfer commands.....	17
Annex A (normative) Update file description	19
Annex B (normative) CRC16 Calculation.....	20
Annex C (informative) Firmware update process example.....	21
Annex D (informative) Firmware update management check sheet.....	23
Figure 1 – IEC 62386 graphical overview.....	6
Figure C.1 – Example of a firmware update process	21

Table 1 – 32-bit command frame encoding.....	9
Table 2 – Firmware update features.....	10
Table 3 – Block 0 definitions.....	11
Table 4 – Block 1.. <i>n</i> definitions.....	12
Table 5 – Declaration of additional variables.....	14
Table 6 – Standard commands for bus units with firmware update capability.....	15
Table 7 – Data transfer commands for bus units with firmware update capability.....	15

iTeh STANDARD PREVIEW **(standards.iteh.ai)**

[SIST EN IEC 62386-105:2020](#)

<https://standards.iteh.ai/catalog/standards/sist/72ade74a-3c02-4b44-9c80-530855dbbbd5/sist-en-iec-62386-105-2020>

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.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
<https://standards.iteh.ai/catalog/standards/sist/72ade74a-3c02-4b44-9c80-530855dbbbd5/sist-en-iec-62386-105-2020>
- 5) IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with an IEC Publication.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

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.

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.

[SIST EN IEC 62386-105:2020](https://standards.iteh.ai/catalog/standards/sist/72ade74a-3c02-4b44-9c80-530855dbbbd5/sist-en-iec-62386-105-2020)

<https://standards.iteh.ai/catalog/standards/sist/72ade74a-3c02-4b44-9c80-530855dbbbd5/sist-en-iec-62386-105-2020>

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 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 62386-105 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.

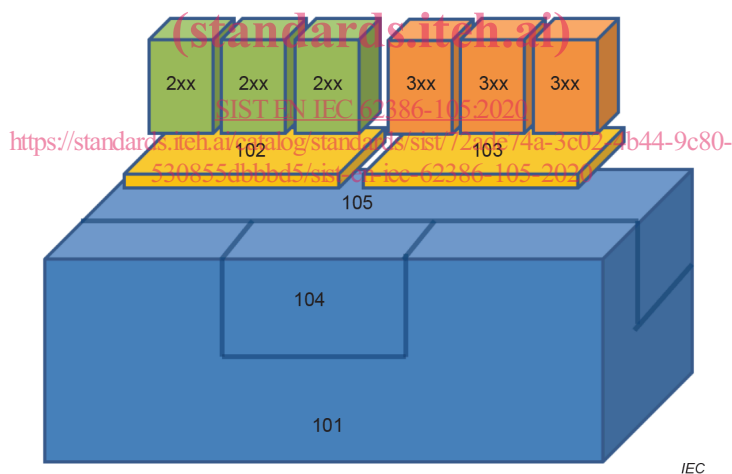


Figure 1 – IEC 62386 graphical overview

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"