

INTERNATIONAL STANDARD

NORME INTERNATIONALE



**Digital addressable lighting interface –
Part 333: Particular requirements for control devices – Manual configuration
(feature type 33)**

**Interface d'éclairage adressable numérique –
Partie 333: Exigences particulières pour les dispositifs de commande –
Configuration manuelle (type de caractéristique 33)**



THIS PUBLICATION IS COPYRIGHT PROTECTED

Copyright © 2018 IEC, Geneva, Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either IEC or IEC's member National Committee in the country of the requester. If you have any questions about IEC copyright or have an enquiry about obtaining additional rights to this publication, please contact the address below or your local IEC member National Committee for further information.

Droits de reproduction réservés. Sauf indication contraire, aucune partie de cette publication ne peut être reproduite ni utilisée sous quelque forme que ce soit et par aucun procédé, électronique ou mécanique, y compris la photocopie et les microfilms, sans l'accord écrit de l'IEC ou du Comité national de l'IEC du pays du demandeur. Si vous avez des questions sur le copyright de l'IEC ou si vous désirez obtenir des droits supplémentaires sur cette publication, utilisez les coordonnées ci-après ou contactez le Comité national de l'IEC de votre pays de résidence.

IEC Central Office
3, rue de Varembe
CH-1211 Geneva 20
Switzerland

Tel.: +41 22 919 02 11
info@iec.ch
www.iec.ch

About the IEC

The International Electrotechnical Commission (IEC) is the leading global organization that prepares and publishes International Standards for all electrical, electronic and related technologies.

About IEC publications

The technical content of IEC publications is kept under constant review by the IEC. Please make sure that you have the latest edition, a corrigendum or an amendment might have been published.

IEC publications search - webstore.iec.ch/advsearchform

The advanced search enables to find IEC publications by a variety of criteria (reference number, text, technical committee,...). It also gives information on projects, replaced and withdrawn publications.

IEC Just Published - webstore.iec.ch/justpublished

Stay up to date on all new IEC publications. Just Published details all new publications released. Available online and once a month by email.

IEC Customer Service Centre - webstore.iec.ch/csc

If you wish to give us your feedback on this publication or need further assistance, please contact the Customer Service Centre: sales@iec.ch.

Electropedia - www.electropedia.org

The world's leading online dictionary on electrotechnology, containing more than 22 000 terminological entries in English and French, with equivalent terms in 16 additional languages. Also known as the International Electrotechnical Vocabulary (IEV) online.

IEC Glossary - std.iec.ch/glossary

67 000 electrotechnical terminology entries in English and French extracted from the Terms and Definitions clause of IEC publications issued since 2002. Some entries have been collected from earlier publications of IEC TC 37, 77, 86 and CISPR.

A propos de l'IEC

La Commission Electrotechnique Internationale (IEC) est la première organisation mondiale qui élabore et publie des Normes internationales pour tout ce qui a trait à l'électricité, à l'électronique et aux technologies apparentées.

A propos des publications IEC

Le contenu technique des publications IEC est constamment revu. Veuillez vous assurer que vous possédez l'édition la plus récente, un corrigendum ou amendement peut avoir été publié.

Recherche de publications IEC - webstore.iec.ch/advsearchform

La recherche avancée permet de trouver des publications IEC en utilisant différents critères (numéro de référence, texte, comité d'études,...). Elle donne aussi des informations sur les projets et les publications remplacées ou retirées.

IEC Just Published - webstore.iec.ch/justpublished

Restez informé sur les nouvelles publications IEC. Just Published détaille les nouvelles publications parues. Disponible en ligne et une fois par mois par email.

Service Clients - webstore.iec.ch/csc

Si vous désirez nous donner des commentaires sur cette publication ou si vous avez des questions contactez-nous: sales@iec.ch.

Electropedia - www.electropedia.org

Le premier dictionnaire d'électrotechnologie en ligne au monde, avec plus de 22 000 articles terminologiques en anglais et en français, ainsi que les termes équivalents dans 16 langues additionnelles. Egalement appelé Vocabulaire Electrotechnique International (IEV) en ligne.

Glossaire IEC - std.iec.ch/glossary

67 000 entrées terminologiques électrotechniques, en anglais et en français, extraites des articles Termes et Définitions des publications IEC parues depuis 2002. Plus certaines entrées antérieures extraites des publications des CE 37, 77, 86 et CISPR de l'IEC.

INTERNATIONAL STANDARD

NORME INTERNATIONALE



**Digital addressable lighting interface –
Part 333: Particular requirements for control devices – Manual configuration
(feature type 33)**

**Interface d'éclairage adressable numérique –
Partie 333: Exigences particulières pour les dispositifs de commande –
Configuration manuelle (type de caractéristique 33)**

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

COMMISSION
ELECTROTECHNIQUE
INTERNATIONALE

ICS 29.140.50; 29.140.99

ISBN 978-2-8322-6568-0

**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.....	8
2 Normative references	8
3 Terms and definitions	8
4 General	9
4.1 General.....	9
4.2 Version number	9
4.3 Insulation	9
5 Electrical specification.....	9
6 Interface power supply	9
7 Transmission protocol structure.....	9
7.1 General.....	9
7.2 Frame format for event messages.....	9
8 Timing	10
9 Method of operation.....	10
9.1 General.....	10
9.2 Feature type	10
9.3 Events	10
9.3.1 General	10
9.3.2 Priority use	10
9.3.3 Bus usage	10
9.3.4 Encoding	10
9.3.5 Event generation	11
9.3.6 Power interruption	12
9.3.7 Manual configuration affecting multiple variables	12
9.4 Configuring the feature.....	12
9.4.1 General	12
9.4.2 Manual capability.....	12
9.4.3 Enable/disable manual configuration	13
9.4.4 Queuing any manual configuration enabled	16
9.4.5 Manual configuration behaviour.....	16
10 Declaration of variables.....	17
11 Definition of commands	18
11.1 General.....	18
11.2 Overview sheets	18
11.2.1 General	18
11.2.2 Standard commands.....	18
11.3 Event messages	20
11.3.1 General	20
11.3.2 Manual configuration event.....	20
11.4 Device control instructions.....	20
11.5 Device configuration instructions.....	20
11.5.1 General	20
11.5.2 RESET	20
11.6 Device queries.....	20

11.7	Instance control instructions	20
11.8	Instance configuration instructions	20
11.9	Instance queries	20
11.10	Special commands	20
11.11	Feature configuration instructions	21
11.11.1	General	21
11.11.2	SET MANUAL CONFIGURATION 103 (<i>DTR0</i>)	21
11.11.3	SET MANUAL CONFIGURATION 3xx (<i>DTR0</i>)	21
11.11.4	SET MANUAL CONFIGURATION FEATURE 3xx (<i>DTR0</i>)	21
11.12	Feature queries	22
11.12.1	General	22
11.12.2	QUERY MANUAL CONFIGURATION CAPABILITY 103	22
11.12.3	QUERY MANUAL CONFIGURATION CAPABILITY 3xx	22
11.12.4	QUERY MANUAL CONFIGURATION CAPABILITY FEATURE 3xx	22
11.12.5	QUERY MANUAL CONFIGURATION 103	22
11.12.6	QUERY MANUAL CONFIGURATION 3xx	23
11.12.7	QUERY MANUAL CONFIGURATION FEATURE 3xx	23
11.12.8	QUERY ANY MANUAL CONFIGURATION ENABLED	23
	Bibliography	24
	Figure 1 – IEC 62386 graphical overview	6
	Table 1 – 24-bit event message frame encoding ‘manual configuration’	9
	Table 2 – Event source information ‘manual configuration’	11
	Table 3 – “ <i>manualCapabilityDevice</i> ” encoding	12
	Table 4 – “ <i>manualCapabilityInstance103</i> ” encoding	13
	Table 5 – “ <i>manualConfigDevice</i> ” encoding	14
	Table 6 – “ <i>manualConfigInstance103</i> ” encoding	14
	Table 7 – Declaration of additions and restrictions to existing device variables	17
	Table 8 – Declaration of additions and restrictions to existing instance variables	17
	Table 9 – Additional feature commands	19

INTERNATIONAL ELECTROTECHNICAL COMMISSION

DIGITAL ADDRESSABLE LIGHTING INTERFACE –**Part 333: Particular requirements for control devices –
Manual configuration (feature type 33)**

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.
- 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.
- 5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, accept IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
- 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 62386-333 has been prepared by IEC technical committee 34: Lamps and related equipment.

This bilingual version (2019-02) corresponds to the monolingual English version, published in 2018-04.

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

CDV	Report on voting
34C/1267/CDV	34C/1350/RVC

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.

The French version of this standard has not been voted upon.

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

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.

This Part 333 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.

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.

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.

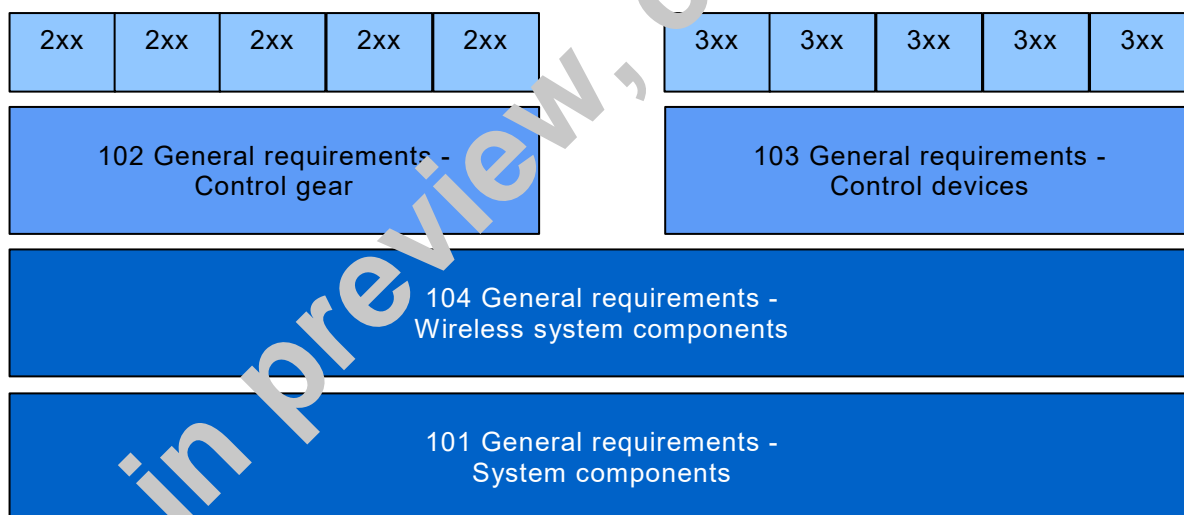
The 2xx parts extend the general requirements for control gear with lamp specific extensions (mainly for backward compatibility with Edition 1 of IEC 62386) and with control gear specific features.

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 62386-333 is intended to be used in conjunction with IEC 62386-101:2014, IEC 62386-101:2014/AMD1:—, IEC 62386-103:2014, IEC 62386-103:2014/AMD1:— and the parts for control devices IEC 62386-3XX. 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 document, and the other parts that make up IEC 62386, in referring to any of the clauses of IEC 62386-1XX, specifies 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.

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



IEC

Figure 1 – IEC 62386 graphical overview

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 manual configuration for 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".

Currently in preview, click buy full version

DIGITAL ADDRESSABLE LIGHTING INTERFACE –

Part 333: Particular requirements for control devices – Manual configuration (feature type 33)

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 (all parts).

This document is applicable to IEC 62386-103:2014 and IEC 62386-103:2014/AMD1:— control devices supporting manual configuration.

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

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:—¹

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

3 Terms and definitions

For the purposes of this document, the terms and definitions given in 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>

3.1 Manual configuration

Configuration of instance variables and/or control device variables and/or feature variables using other means than the bus

EXAMPLE Potentiometer for configuration of the hold time of a movement sensor.

Note 1 to entry: This definition does only cover manual configuration of variables defined within IEC 62386-103 and IEC 62386-3xx. Other manually configurable parameters of a control device are not affected by this document.

¹ Under preparation. Stage at the time of publication: IEC TPUB 62386-101/AMD1:2018.

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