

**Digital addressable lighting interface -- Part 204:
Particular requirements for control gears - low voltage
halogen lamps (device type 3)**

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 62386-204:2009 sisaldab Euroopa standardi EN 62386-204:2009 ingliskeelset teksti.

Standard on kinnitatud Eesti Standardikeskuse 30.10.2009 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.

Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 27.08.2009.

Standard on kättesaadav Eesti standardiorganisatsioonist.

This Estonian standard EVS-EN 62386-204:2009 consists of the English text of the European standard EN 62386-204:2009.

This standard is ratified with the order of Estonian Centre for Standardisation dated 30.10.2009 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.

Date of Availability of the European standard text 27.08.2009.

The standard is available from Estonian standardisation organisation.

ICS 29.140.50, 29.140.99

Standardite reprodutseerimis- ja levitamiseõigus kuulub Eesti Standardikeskusele

Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonilisse süsteemi või edastamine ükskõik millises vormis või millisel teel on keelatud ilma Eesti Standardikeskuse poolt antud kirjaliku loata.

Kui Teil on küsimusi standardite autorikaitse kohta, palun võtke ühendust Eesti Standardikeskusega:
Aru 10 Tallinn 10317 Eesti; www.evs.ee; Telefon: 605 5050; E-post: info@evs.ee

Right to reproduce and distribute Estonian Standards belongs to the Estonian Centre for Standardisation

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, without permission in writing from Estonian Centre for Standardisation.

If you have any questions about standards copyright, please contact Estonian Centre for Standardisation:
Aru str 10 Tallinn 10317 Estonia; www.evs.ee; Phone: +372 605 5050; E-mail: info@evs.ee

**Digital addressable lighting interface -
Part 204: Particular requirements for control gear -
Low voltage halogen lamps (device type 3)
(IEC 62386-204:2009)**

Interface d'éclairage
adressable numérique -
Partie 204: Exigences particulières
pour les appareillages de commande -
Lampes à halogène à basse tension
(dispositif de type 3)
(CEI 62386-204:2009)

Digital adressierbare Schnittstelle
für die Beleuchtung -
Teil 204: Besondere Anforderungen
an Betriebsgeräte -
Niedervolt-Halogenlampen (Gerätetyp 3)
(IEC 62386-204:2009)

This European Standard was approved by CENELEC on 2009-07-01. 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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

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

CENELEC

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

Central Secretariat: Avenue Marnix 17, B - 1000 Brussels

Foreword

The text of document 34C/876/FDIS, future edition 1 of IEC 62386-204, prepared by SC 34C, Auxiliaries for lamps, of IEC TC 34, Lamps and related equipment, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 62386-204 on 2009-07-01.

This Part 204 is intended to be used in conjunction with EN 62386-101 and EN 62386-102, which contain general requirements for the relevant product type (control gear or control devices).

The following dates were fixed:

- latest date by which the EN has to be implemented
at national level by publication of an identical
national standard or by endorsement (dop) 2010-04-01
- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 2012-07-01

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 62386-204:2009 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 60598-1	NOTE	Harmonized as EN 60598-1:2008 (modified).
IEC 60669-2-1	NOTE	Harmonized as EN 60669-2-1:2004 (modified).
IEC 60921	NOTE	Harmonized as EN 60921:2004 (not modified).
IEC 60923	NOTE	Harmonized as EN 60923:2005 (not modified).
IEC 60925	NOTE	Harmonized as EN 60925:1991 (not modified).
IEC 60929	NOTE	Harmonized as EN 60929:2006 (not modified).
IEC 61347-1	NOTE	Harmonized as EN 61347-1:2008 (modified).
IEC 61347-2-3	NOTE	Harmonized as EN 61347-2-3:2001 (not modified).
IEC 61547	NOTE	Harmonized as EN 61547:2009 (not modified).
CISPR 15	NOTE	Harmonized as EN 55015:2006 (not modified).

Annex ZA
(normative)

**Normative references to international publications
with their corresponding European publications**

The following referenced documents are indispensable for the application 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 When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 62386-101	2009	Digital addressable lighting interface - Part 101: General requirements - System	EN 62386-101	2009
IEC 62386-102	2009	Digital addressable lighting interface - Part 102: General requirements - Control gear	EN 62386-102	2009

CONTENTS

FOREWORD.....	3
INTRODUCTION.....	5
1 Scope.....	6
2 Normative references	6
3 Terms and definitions	6
4 General	7
5 Electrical specifications	7
6 Interface power supply	7
7 Transmission protocol structure.....	7
8 Timing	7
9 Method of operation	7
10 Declaration of variables	8
11 Definition of commands	9
12 Test procedures	14
Annex A (informative) Examples of algorithms	35
Bibliography.....	36
Figure 1 – Application extended configuration command sequence example.....	10
Figure 2 – Test sequence 'QUERY FEATURES'.....	15
Figure 3 – Test sequence 'QUERY SHORT CIRCUIT'.....	16
Figure 4 – Test sequence 'QUERY OPEN CIRCUIT'.....	17
Figure 5 – Test sequence 'QUERY LOAD DECREASE'.....	18
Figure 6 – Test sequence 'QUERY LOAD INCREASE'.....	19
Figure 7 – 'QUERY CURRENT PROTECTOR ACTIVE: Underload'	20
Figure 8 – 'QUERY CURRENT PROTECTOR ACTIVE: Overload'.....	21
Figure 9 – 'QUERY THERMAL SHUT DOWN'.....	22
Figure 10 – 'QUERY THERMAL OVERLOAD'.....	23
Figure 11 – 'REFERENCE SYSTEM POWER'.....	24
Figure 12 – 'REFERENCE SYSTEM POWER: 100 ms-timeout'	25
Figure 13 – 'REFERENCE SYSTEM POWER: Command in-between'	27
Figure 14 – 'REFERENCE SYSTEM POWER: 15 minutes timer'	27
Figure 15 – 'REFERENCE SYSTEM POWER: failed'.....	28
Figure 16 – 'ENABLE / DISABLE CURRENT PROTECTOR'.....	29
Figure 17 – 'ENABLE DEVICE TYPE: Application extended commands'.....	30
Figure 18 – 'ENABLE DEVICE TYPE: Application extended configuration commands 1'.....	32
Figure 19 – 'ENABLE DEVICE TYPE: Application extended configuration commands 2'.....	32
Figure 20 – 'QUERY EXTENDED VERSION NUMBER'	33
Figure 21 – 'RESERVED APPLICATION EXTENDED COMMANDS'.....	34
Table 1 – Declaration of variables.....	9
Table 2 – Summary of the application extended command set	14

INTRODUCTION

This first edition of IEC 62386-204 is published in conjunction with IEC 62386-101 and 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 recognised.

This International Standard, and the other parts that make up IEC 62386-200 series, in referring to any of the clauses of IEC 62386-101 or IEC 62386-102, 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. All parts that make up the IEC 62386-200 series are self-contained and therefore do not include references to each other.

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 IEC 62386-1XX, clause 'n' apply", 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 204.

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 204: Particular requirements for control gear – Low voltage halogen lamps (device type 3)

1 Scope

This International Standard specifies a protocol and methods of test for the control by digital signals of electronic control gear for use on a.c. or d.c. supplies, associated with low voltage halogen lamps.

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

2 Normative references

The following referenced documents are indispensable for the application 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 62386-101:2009, *Digital addressable lighting interface – Part 101: General requirements – System*

IEC 62386-102:2009, *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 62386-101:2009 and Clause 3 of IEC 62386-102:2009 apply, with the following additions.

3.1

reference measurement

process during which gear determines the actual lamp load with internal procedures and measurements, not specified by this standard

NOTE The details of this process are a matter of detailed design of gear and are outside the scope of this standard.

3.2

detection of load decrease

recognition that the actual lamp load is significantly below the load measured during a successful 'reference measurement'

NOTE The criteria for regarding a load increase or decrease as significant can only be decided by the manufacturer and these criteria should be described in the manual.

3.3

detection of load increase

recognition that the actual lamp load is significantly above the load measured during a successful 'reference measurement'

NOTE The criteria for regarding a load increase or decrease as significant can only be decided by the manufacturer, and these criteria should be described in the manual.