

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Controlgear for electric light sources – Safety –
Part 2-10: Particular requirements – Electronic controlgear for high-frequency
operation of tubular cold-cathode discharge lamps (neon tubes)**

**Appareillages de commande pour les sources de lumière électriques – Sécurité –
Partie 2-10: Exigences particulières – Appareillages électroniques destinés à
l'alimentation en haute fréquence des lampes à décharge tubulaires à cathode
froide (tubes néon)**



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INTERNATIONAL ELECTROTECHNICAL COMMISSION

CONTROLGEAR FOR ELECTRIC LIGHT SOURCES – SAFETY –**Part 2-10: Particular requirements –
Electronic controlgear for high-frequency operation of tubular
cold-cathode discharge lamps (neon tubes)**

FOREWORD

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IEC 61347-2-10 has been prepared by subcommittee 34C: Auxiliaries for lamps, of IEC technical committee 34: Lighting. It is an International Standard.

This second edition cancels and replaces the first edition published in 2000 and Amendment 1:2008. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- a) introduction of dated references as appropriate;
- b) clarification of sample item numbers.

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

Draft	Report on voting
34C/1584/CDV	34C/1592/RVC

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/publications.

This document is intended to be used in conjunction with IEC 61347-1:2015 and IEC 61347-1:2015/AMD1:2017. Where the requirements of any of the clauses of IEC 61347-1:2015 and IEC 61347-1:2015/AMD1:2017 are referred to in this document by the phrase "IEC 61347-1:2015, Clause n and IEC 61347-1:2015/AMD1:2017, Clause n apply", this phrase is interpreted as meaning that all the requirements of the clause in question of IEC 61347-1:2015 and IEC 61347-1:2015/AMD1:2017 apply, except any which are clearly inapplicable to the specific type of controlgear covered by this document.

NOTE In this document, the following print type is used:

– *compliance statements: in italic type.*

A list of all parts in the IEC 61347 series, published under the general title *Controlgear for electric light sources – Safety*, can be found on the IEC website.

Future documents in this series will carry the new general title as cited above. Titles of existing documents in this series will be updated at the time of the next edition.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn, or
- revised.

INTRODUCTION

The technical requirements in this document compared to IEC 61347-2-10:2000 and IEC 61347-2-10:2000/AMD1:2008 are essentially unchanged. Nevertheless, a new edition of this document could not be avoided, as without the introduction of dated references to IEC 61347-1:2015 and IEC 61347-1:2015/AMD1:2017, the fourth edition of IEC 61347-1:¹ would have been implicitly applicable due to the undated nature of the references to IEC 61347-1 in IEC 61347-2-10:2000 and IEC 61347-2-10:2000/AMD1:2008.

This document, in referring to any of the clauses of IEC 61347-1:2015 and IEC 61347-1:2015/AMD1:2017, specifies the extent to which such a clause is applicable. Additional requirements are also included, as necessary.

In order to check the safety of controlgear, it is necessary to check their performance. However, since no standardization of the characteristics of neon tubes exists, reference loads are specified in this document to ensure reproducible test results.

¹ Fourth edition under preparation. Stage at the time of publication IEC FDIS 61347-1:2024.

CONTROLGEAR FOR ELECTRIC LIGHT SOURCES – SAFETY –

Part 2-10: Particular requirements – Electronic controlgear for high-frequency operation of tubular cold-cathode discharge lamps (neon tubes)

1 Scope

This part of IEC 61347 specifies safety requirements for electronic controlgear for high-frequency operation of tubular cold-cathode discharge lamps used in signs and luminous discharge tube installations and operating with an output voltage exceeding 1 000 V but not exceeding 10 000 V for direct connection to DC or AC supply voltages not exceeding 1 000 V (at 50 Hz or 60 Hz in case of alternating current).

NOTE 1 Historically, such types of controlgear were referred to as invertors or convertors.

NOTE 2 In Japan, the voltage limit for the application of this document is set to 15 000 V.

This document applies for controlgear of type A and controlgear of type B, which are specified as follows:

- Type A: controlgear operating within the frequency range 20 kHz to 50 kHz, and having an output voltage not exceeding 5 000 V peak between terminals, with a maximum output current limited to 35 mA (RMS) and 50 mA (peak value) and a supply voltage not exceeding 250 V.

NOTE 3 The output current of a type A unit can be considered as not presenting an electric shock hazard due to the limits on the current and frequency range.

NOTE 4 In Japan, the output voltage of 15 000 V is acceptable.

- Type B: controlgear operating within the frequency range 10 kHz to 100 kHz and having a no-load output voltage not exceeding 10 000 V between terminals or not exceeding 5 000 V to earth, with a maximum output current limited to 200 mA (RMS) and 400 mA (peak value).

NOTE 5 In Japan, a type B controlgear providing an output current exceeding 50 mA is not acceptable.

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 60417, *Graphical symbols for use on equipment*, available at <https://www.graphical-symbols.info/equipment>

IEC 60598-1:2020, *Luminaires – Part 1: General requirements and tests*

IEC 61347-1:2015, *Lamp controlgear – Part 1: General and safety requirements*
IEC 61347-1:2015/AMD1:2017

ISO 3864-1:2011, *Graphical symbols – Safety colours and safety signs – Part 1: Design principles for safety signs and safety markings*