Australian/New Zealand Standard™

Lamp controlgear

Part 2.10: Particular requirements for electronic invertors and convertors for high-frequency operation of cold start tubular discharge lamps (neon tubes) (IEC 61347-2-10:2000 MOD)

STANDARDS AUSTRALIA

STANDARDS NEW ZEALAND
Paerewa Aotearoa

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The following are represented on Committee EL-041:

Association of Consulting Engineers, Australia
Australian Chamber of Commerce and Industry
Australian Electrical and Electronic Manufacturers Association
Consumer Federation of Australia
Electrical Compliance Testing Association of Australia
Electrical Regulatory authorities council (Australia)
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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 Standard is to specify particular safety requirements for electronic invertors and convertors for high-frequency operation of tubular cold-cathode discharge lmaps used in signs and luminous discharge tube installations.

This Standard is an adoption with national modifications and has been reproduced from, IEC 61347-2-10:2000, *Lamp controlgear – Part 2-10: Particular requirements for electronic invertors and convertors for high-frequency operation of cold start tubular discharge lamps (neon tubes)*, and has been varied as indicated to take account of Australian/New Zealand conditions.

Variations to IEC 61347-2-10:2000 are indicated at the appropriate places throughout this Standard. Strikethrough (~~example~~) identifies IEC text, tables and figures which, for the purposes of this Australian/New Zealand Standard, are deleted. Where text, tables or figures are added, each is set in its proper place and identified by shading (example). Added figures are not themselves shaded, but are identified by a shaded border.

This Standard is a section of Part 2 of AS/NZS 61347 *Lamp controlgear*. Currently this Series consists of the following parts. Additional parts will be added from time to time.

AS/NZS	
61347.1	Part 1: General and safety requirements
61347.2.1	Part 2.1: Particular requirements for starting devices (other than glow starters)
61347.2.2	Part 2.2: Particular requirements for d.c. or a.c. supplied electronic step-down convertors for filament lamps
61347.2.3	Part 2.3: Particular requirements for a.c. supplied electronic ballasts for fluorescent lamps
61347.2.4	Part 2.4: Particular requirements for d.c. electronic ballasts for general lighting
61347.2.5	Part 2.5: Particular requirements for d.c. supplied electronic ballasts for public transport lighting
61347.2.6	Part 2.6: Particular requirements for d.c. supplied electronic ballasts for aircraft lighting
61347.2.8	Part 2.8: Particular requirements for ballasts for fluorescent lamps
61347.2.9	Part 2.9: Particular requirements for ballasts for discharge lamps (excluding fluorescent lamps)
61347.2.10	Part 2.10: Particular requirements for electronic invertors and convertors for high-frequency operation of cold start tubular discharge lamps (neon tubes) (this Standard)
61347.2.11	Part 2.11: Particular requirements for miscellaneous electronic circuits used with luminaires

This Standard is to be read in conjunction with AS/NZS 61347.1.

It is to be noted that AS/NZS 61347.1 has variations from IEC and hence product complying with IEC 61347-1 may not comply with AS/NZS 61347.1.

As this Standard is reproduced from an International Standard, the following applies:

(a) Its number does not appear on each page of text and its identity is shown only on the cover and title page.

(b) In the source text ‘this international standard’ should read ‘this Australian/New Zealand Standard’.

(c) A full point should be substituted for a comma when referring to a decimal marker.

(d) Any French text on figures should be ignored.

The terms ‘normative’ and ‘informative’ are used to define the application of the annex to which they apply. A normative annex is an integral part of a standard, whereas an informative annex is only for information and guidance.

CONTENTS

INTRODUCTION

This part of AS/NZS 61347, and the parts which make up AS/NZS 61347.2, in referring to any of the clauses of AS/NZS 61347.1, specify the extent to which such a clause is applicable and the order in which the tests are to be performed; they also include additional requirements, as necessary. All parts which make up AS/NZS 61347.2 are self-contained and, therefore, do not include references to each other.

Where the requirements of any of the clauses of AS/NZS 61347.1 are referred to in this standard by the phrase ”The requirements of clause n of AS/NZS 61347.1 apply”, this phrase is interpreted as meaning that all requirements of the clause in question of part 1 apply, except any which are clearly inapplicable to the specific type of lamp controlgear covered by this particular part of AS/NZS 61347.2.

NOTES

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Australian/New Zealand Standard

Lamp controlgear
Part 2.10: Particular requirements for electronic invertors and convertors for high-frequency operation of cold start tubular discharge lamps (neon tubes)
(IEC 61347-2-10:2000 MOD)

1 Scope

This part of AS/NZS 61347 specifies particular requirements for electronic invertors and convertors 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 supply voltages not exceeding 1 000 V at 50 Hz or 60 Hz or 1 000 V d.c.

NOTE 1 In Japan, the output voltage of 15 000 V is acceptable.

The requirements for two types of invertors and convertors, types A and B, are specified as follows:

– Type A unit: an invertor or convertor operating within the frequency range 20 kHz to 50 kHz, and having an output voltage (between terminals) not exceeding 5 000 V peak, a maximum output current limited to 35 mA (r.m.s.) and 50 mA (peak value). The supply voltage does not exceed 250 V at 50 Hz or 60 Hz or 250 V d.c.

NOTE 2 The output current of a type A unit may be considered as not presenting an electric shock hazard due to the limits on the current and frequency range.

NOTE 3 In Japan, the output voltage of 15 000 V is acceptable.

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

NOTE 4 Type B units require additional protection in the output circuit.

NOTE 5 In Japan, a type B unit exceeding 50 mA and/or the secondary grounded is not acceptable.

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

The rated maximum operating temperature of the winding, t_w, is not applicable to this standard.

2 Normative references

For the purpose of this part of AS/NZS 61347, the normative references given in clause 2 of AS/NZS 61347.1 which are mentioned in this standard apply, together with the following normative references:

~~IEC 61347.1, *Lamp controlgear – Part 1: General and safety requirements*~~

AS/NZS 61347.1, *Lamp controlgear—General and safety requirements*

ISO 3864:1984, *Safety colours and safety signs*