SLOVENSKI STANDARD

SIST EN 60929:1995/A1:2002

december 2002

A.C. supplied electronic ballasts for tubular fluorescent lamps – Performance requirements - Amendments A1 (IEC 60929:1990/A1:1994)

ICS 29.140.30

Referenčna številka
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EUROPEAN STANDARD

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English version

A.C. supplied electronic ballasts for tubular fluorescent lamps Performance requirements (IEC 929:1990/A1:1994)

Ballasts électroniques alimentés en courant alternatif pour lampes tubulaires à fluorescence Prescriptions de performances (CEI 929:1990/A1:1994)

Wechselstromversorgte elektronische Vorschaltgeräte für röhrenförmige Leuchtstofflampen Anforderungen an die Arbeitsweise (IEC 929:1990/A1:1994)

This amendment A1 modifies the European Standard EN 60929:1992; it was approved by CENELEC on 1995-02-15. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this amendment 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 amendment 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, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CENELEC

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

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Foreword

The text of document 34C(CO)276, future amendment 1 to IEC 929:1990, prepared by SC 34C, Auxiliaries for discharge lamps, of IEC TC 34, Lamps and related equipment, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as amendment A1 to EN 60929:1992 on 1995-02-15.

The following dates were fixed:

- latest date by which the amendment has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 1996-02-15
- latest date by which the national standards conflicting with the amendment have to be withdrawn (dow) 1996-02-15

For products which have complied with EN 60929:1992 before 1996-02-15, as shown by the manufacturer or by a certification body, this previous standard may continue to apply for production until 2001-02-15.

Endorsement notice

The text of amendment 1:1994 to the International Standard IEC 929:1990 was approved by CENELEC as an amendment to the European Standard without any modification.

NORME INTERNATIONALE
INTERNATIONAL STANDARD

CEI
IEC
929

1990

AMENDEMENT 1
AMENDMENT 1

1994-11

Amendement 1

Ballasts électroniques alimentés en courant alternatif pour lampes tubulaires à fluorescence – Prescriptions de performances

Amendment 1

A.C.-supplied electronic ballasts for tubular fluorescent lamps – Performance requirements

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Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

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FOREWORD

This amendment has been prepared by sub-committee 34C: Auxiliaries for discharge lamps, of IEC technical committee 34: Lamps and related equipment.

The text of this amendment is based on the following documents:

DIS	Report on voting
34C(CO)276	34C/293/RDV

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

Page 3

CONTENTS

Add the title of the new annex E as follows:

Annex E – Control interface for controllable ballasts

Page 7

INTRODUCTION

Delete the first sentence in the second paragraph and replace by the following:

These ballasts are intended to operate lamps at various frequencies including high frequencies, and at various lamp powers.

Page 9

1 Scope

Delete note 2

Page 15

7 Starting conditions

After the second paragraph, add the following new note:

NOTE – Preheat current or voltage requirements also apply to controllable ballasts in any dimming position.

Page 21

8 Operating conditions

Delete, page 23, the existing text of subclause 8.3 and replace by the following:

8.3 *Requirements for dimming*

8.3.1 *Lamp cathode heating*

When operating lamps at lower lumen levels than the optimum design point, care shall be taken that the ballast provides cathode heating continuously to the lamp(s) so that the lamp life is not degraded.

8.3.2 *Lamp power control*

Requirements are specified in annex E.

There are presently also other non-standardized interfaces which can lead to problems of interchangeability between interfaces. These have to be tested according to the manufacturers' specifications. The type of interface shall be marked on the ballast.

Page 23

9 Circuit power factor

Add a new paragraph at the end of this clause as follows:

For controllable ballasts the power factor is measured at full power.

10 Supply current

Add a new paragraph at the end of this clause as follows:

For controllable ballasts the supply current shall not exceed the value marked on the ballast by more than 10 % in any dimming position.

Page 29

17 Endurance

Add the following new subclause:

17.3 The mentioned t_c is the t_c measured at the most onerous dimming position. This dimming position may be given by consultation with the manufacturer.

NOTE – When testing the t_c temperature within the luminaire the same onerous dimming position applies.

Page 73

Add the following new annex E:

Annex E
(normative)

Control interface for controllable ballasts

E.1 Scope

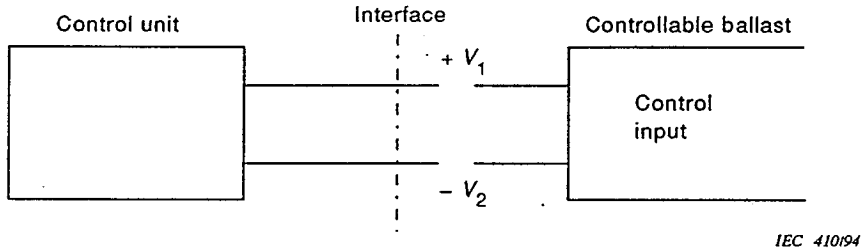
This annex specifies the control interface for controllable ballasts. The lamp power (light output) of the electronic ballast is controlled between minimum/off and maximum values by the control signal applied to the control terminals of the ballast.

If the control signal is not connected, the ballast shall give the maximum value of lamp power as defined in IEC 928.

This annex does not cover any requirements for the control unit.

E.2 Control by d.c. voltage

E.2.1 *Circuit diagram; functional specification for d.c. voltage control*



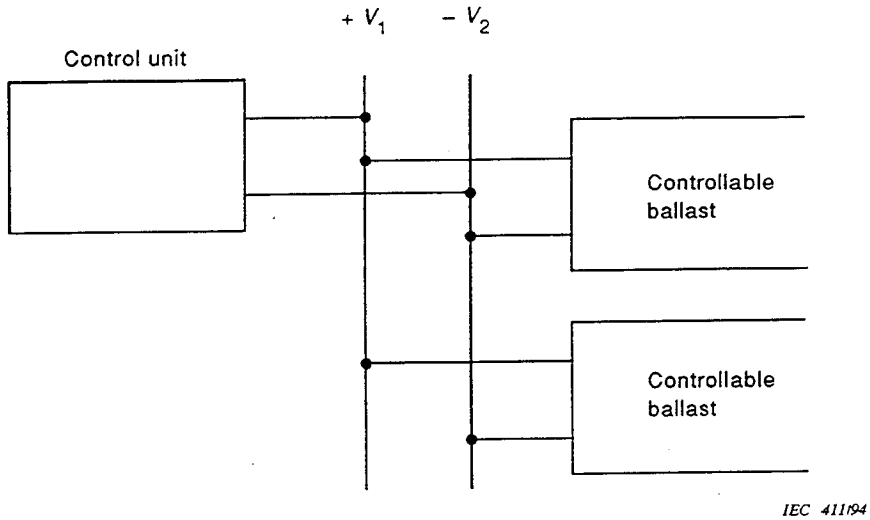
The lamp power (light output) of a controllable ballast is controlled by the d.c. voltage on the control input of the controllable ballast. The d.c. voltage has the following characteristics:

Control signal range

$V_{1,2}$ = 10 V:	maximum value of lamp power
$V_{1,2}$ = 1 V:	minimum value of lamp power
$V_{1,2}$ between 1 V and 10 V:	lamp power rising from minimum to maximum value
$V_{1,2}$ between 0 V and 11 V:	stable lamp output
$V_{1,2}$ between 0 V and 1 V:	minimum light output

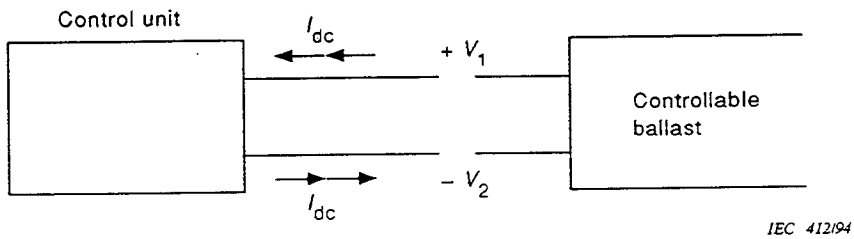
E.2.2 *Connection diagram*

Depending on current-carrying capacity, several controllable ballasts can be connected to one control unit in the following way:



E.2.3 *Electrical specifications*

E.2.3.1 *The controllable ballast is current sourcing.*



E.2.3.2 *Control input voltage limits*

The ballast shall not be damaged when the control input voltage $V_{1,2}$ is between –20 V and +20 V.