

Irish Standard I.S. EN IEC 60730-2-11:2020

Automatic electrical controls - Part 2-11: Particular requirements for energy regulators

© CENELEC 2020 No copying without NSAI permission except as permitted by copyright law.

#### I.S. EN IEC 60730-2-11:2020

Incorporating amendments/corrigenda/National Annexes issued since publication:

The National Standards Authority of Ireland (NSAI) produces the following categories of formal documents:

I.S. xxx: Irish Standard — national specification based on the consensus of an expert panel and subject to public consultation.

S.R.~xxx: Standard~Recommendation-recommendation~based~on~the~consensus~of~an~expert~panel~and~subject~to~public~consultation.

SWiFT xxx: A rapidly developed recommendatory document based on the consensus of the participants of an NSAI workshop.

This document replaces/revises/consolidates the NSAI adoption of the document(s) indicated on the CEN/CENELEC cover/Foreword and the following National document(s):

NOTE: The date of any NSAI previous adoption may not match the date of its original CEN/CENELEC document.

This document is based on:

Published:

EN IEC 60730-2-11:2020

2020-05-01

This document was published under the authority of the NSAI and comes into effect on:

ICS number:

2020-05-18

NSAI

97.120

NOTE: If blank see CEN/CENELEC cover page

1 Swift Square, Northwood, Santry Dublin 9 T +353 1 807 3800 F +353 1 807 3838 E standards@nsai.ie W NSAl.ie Sales: T +353 1 857 6730 F +353 1 857 6729 W standards.ie

Údarás um Chaighdeáin Náisiúnta na hÉireann

This is a free page sample. Access the full version online.

#### **National Foreword**

I.S. EN IEC 60730-2-11:2020 is the adopted Irish version of the European Document EN IEC 60730-2-11:2020, Automatic electrical controls - Part 2-11: Particular requirements for energy regulators

This document does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

For relationships with other publications refer to the NSAI web store.

Compliance with this document does not of itself confer immunity from legal obligations.

In line with international standards practice the decimal point is shown as a comma (,) throughout this document.

This is a free page sample. Access the full version online.

This page is intentionally left blank

This is a free page sample. Access the full version online. I.S. EN IEC 60730-2-11:2020

**EUROPEAN STANDARD** 

EN IEC 60730-2-11

NORME EUROPÉENNE

**EUROPÄISCHE NORM** 

May 2020

ICS 97.120

Supersedes EN 60730-2-11:2008 and all of its amendments and corrigenda (if any)

#### **English Version**

# Automatic electrical controls - Part 2-11: Particular requirements for energy regulators (IEC 60730-2-11:2019)

Dispositifs de commande électrique automatiques Partie 2-11: Exigences particulières pour les régulateurs d'énergie (IEC 60730-2-11:2019) Automatische elektrische Regel- und Steuergeräte für den Hausgebrauch und ähnliche Anwendungen - Teil 2-11: Besondere Anforderungen an Energieregler (IEC 60730-2-11:2019)

This European Standard was approved by CENELEC on 2019-06-21. 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 CEN-CENELEC Management Centre 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 CEN-CENELEC Management Centre has the same status as the official versions.

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



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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

#### EN IEC 60730-2-11:2020 (E)

#### **European foreword**

The text of document 72/1137/CDV, future edition 3 of IEC 60730-2-11, prepared by IEC/TC 72 "Automatic electrical controls" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 60730-2-11:2020.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement
- latest date by which the national standards conflicting with the document have to be withdrawn

This document supersedes EN 60730-2-11:2008 and all of its amendments and corrigenda (if any).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC shall not be held responsible for identifying any or all such patent rights.

This document has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association.

#### **Endorsement notice**

The text of the International Standard IEC 60730-2-11:2019 was approved by CENELEC as a European Standard without any modification.



IEC 60730-2-11

Edition 3.0 2019-05

# INTERNATIONAL STANDARD

# NORME INTERNATIONALE

**Automatic electrical controls** 

Part 2-11: Particular requirements for energy regulators

Dispositifs de commande électrique automatiques Partie 2-11: Exigences particulières pour les régulateurs d'énergie





## THIS PUBLICATION IS COPYRIGHT PROTECTED Copyright © 2019 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 Tel.: +41 22 919 02 11

3, rue de Varembé info@iec.ch CH-1211 Geneva 20 www.iec.ch

#### About the IEC

Switzerland

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.



IEC 60730-2-11

Edition 3.0 2019-05

# INTERNATIONAL STANDARD

# NORME INTERNATIONALE

**Automatic electrical controls** 

Part 2-11: Particular requirements for energy regulators

Dispositifs de commande électrique automatiques Partie 2-11: Exigences particulières pour les régulateurs d'énergie

INTERNATIONAL ELECTROTECHNICAL COMMISSION

COMMISSION ELECTROTECHNIQUE INTERNATIONALE

ICS 97.120 ISBN 978-2-8322-6877-3

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.

### - 2 - IEC 60730-2-11:2019 © IEC 2019

### CONTENTS

FOF	REWORD	3			
1	Scope and normative references	5			
2	Terms and definitions	6			
3	General requirements	7			
4	General notes on tests	7			
5	Rating	7			
6	Classification	7			
7	Information	7			
8	Protection against electric shock	8			
9	Provision for protective earthing	8			
10	Terminals and terminations	8			
11	Constructional requirements	8			
12	Moisture and dust resistance	8			
13	Electric strength and insulation resistance	8			
14	Heating	8			
15	Manufacturing deviation and drift	9			
16	Environmental stress	9			
17	Endurance	9			
18	Mechanical strength	10			
19	Threaded parts and connections	11			
20	Creepage distances, clearances and distances through solid insulation	11			
21	Resistance to heat, fire and tracking	11			
22	Resistance to corrosion	11			
23	Electromagnetic compatibility (EMC) requirements – Emission	11			
24	Components	11			
25	Normal operation	11			
26	Electromagnetic compatibility (EMC) requirements – Immunity	11			
27	Abnormal operation	11			
28	Guidance on the use of electronic disconnection	11			
Ann	ex H (normative) Requirements for electronic controls	12			
Ann	Annex AA (normative) Regional differences15				

IEC 60730-2-11:2019 © IEC 2019

- 3 -

### INTERNATIONAL ELECTROTECHNICAL COMMISSION

#### **AUTOMATIC ELECTRICAL CONTROLS**

### Part 2-11: Particular requirements for energy regulators

#### **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 provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with an IEC Publication.
- 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 60730-2-11 has been prepared by IEC technical committee 72: Automatic electrical controls.

This third edition cancels and replaces the second edition published in 2006. This edition constitutes a technical revision. This edition includes the following significant technical changes with respect to the previous edition:

- a) revision to the title to remove "for household and similar use";
- b) changes to the scope and related modifications;
- c) changes to definitions in Annex H.

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

CDV	Report on voting	
72/1137/CDV	72/1167/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.

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

- 4 - IEC 60730-2-11:2019 © IEC 2019

This Part 2-11 is intended to be used in conjunction with IEC 60730-1. It was established on the basis of the fifth edition of that standard (2013) including Amendment 1 (2015). Consideration may be given to future editions of, or amendments to, IEC 60730-1.

This Part 2-11 supplements or modifies the corresponding clauses in IEC 60730-1 so as to convert that publication into the IEC standard: Particular requirements for energy regulators.

Where this Part 2-11 states "addition", "modification" or "replacement", the relevant requirement, test specification or explanatory matter in Part 1 should be adapted accordingly.

Where no change is necessary, this Part 2-11 indicates that the relevant clause or subclause applies.

In this publication, the following print types are used:

- requirements proper: in roman type,
- test specifications: in italic type,
- explanatory matter: in smaller roman type,
- defined terms: bold type.

Subclauses, notes, tables and figures which are additional to those in Part 1 are numbered starting from 101.

A list of all parts of the IEC 60730 series, under the general title *Automatic electrical controls*, can be found on the IEC website.

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

The committee has decided that the contents of this publication will remain unchanged until the maintenance result date indicated on the IEC web site under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

- · reconfirmed;
- withdrawn;
- replaced by a revised edition, or
- amended.

IEC 60730-2-11:2019 © IEC 2019

- 5 -

#### **AUTOMATIC ELECTRICAL CONTROLS**

### Part 2-11: Particular requirements for energy regulators

#### 1 Scope and normative references

This clause of Part 1 is applicable except as follows:

#### 1.1 Scope

#### Replacement:

In general, this part of IEC 60730 applies to energy regulators for use in, on, or in association with equipment, including energy regulators for heating, air conditioning and similar applications. The equipment may use electricity, gas, oil, solid fuel, solar thermal energy, etc. or a combination thereof.

NOTE These energy regulators can be thermally, mechanically or electrically operated.

This standard applies to the inherent safety, to the operating values, operating times and operating sequence where these are associated with equipment safety, and to the testing of automatic electrical energy regulator devices used in, or in association with, equipment.

This standard is also applicable to energy regulators for appliances within the scope of IEC 60335-1.

Throughout this standard the word "equipment" means "appliance and equipment".

This standard also applies to automatic electrical energy regulators for equipment that may be used by the public, such as equipment intended to be used in shops, offices, hospitals, farms and commercial and industrial applications.

This standard does not apply to automatic electrical energy regulators designed exclusively for industrial process applications unless explicitly mentioned in the equipment standard.

This standard does not apply to equipment that are specifically within the scope of building automation equipment.

This standard is also applicable to individual energy regulators utilized as part of a control system or energy regulators which are mechanically integral with multi-functional controls having non-electrical outputs.

This standard applies to **controls** powered by primary or secondary batteries, requirements for which are contained within the standard, including Annex V.

1.1.1 This International Standard applies to the inherent safety, to the **operating values**, **operating times**, and **operating sequences** where such are associated with equipment safety, and to the testing of automatic **electrical control** devices used in, or in association with, equipment.

This standard applies to **controls** using **thermistors**, see also Annex J.

This standard is also applicable to the functional safety of low complexity safety related systems and controls.



	This is a free preview.	Purchase the e	entire publication	at the link below:
--	-------------------------	----------------	--------------------	--------------------

**Product Page** 

- Dooking for additional Standards? Visit Intertek Inform Infostore
- Dearn about LexConnect, All Jurisdictions, Standards referenced in Australian legislation