



NSAI
Standards

Irish Standard
I.S. EN IEC 60730-2-8:2020

Automatic electrical controls for household and similar use - Part 2-8: Particular requirements for electrically operated water valves, including mechanical requirements

I.S. EN IEC 60730-2-8:2020

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:

EN IEC 60730-2-8:2020

Published:

2020-05-01

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

2020-05-18

ICS number:

97.120

NOTE: If blank see CEN/CENELEC cover page

NSAI
1 Swift Square,
Northwood, Santry
Dublin 9

T +353 1 807 3800
F +353 1 807 3838
E standards@nsai.ie
W NSAI.ie

Sales:
T +353 1 857 6730
F +353 1 857 6729
W standards.ie

Údarás um Chaighdeáin Náisiúnta na hÉireann

National Foreword

I.S. EN IEC 60730-2-8:2020 is the adopted Irish version of the European Document EN IEC 60730-2-8:2020, Automatic electrical controls for household and similar use - Part 2-8: Particular requirements for electrically operated water valves, including mechanical requirements

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 page is intentionally left blank

EUROPEAN STANDARD

EN IEC 60730-2-8

NORME EUROPÉENNE

EUROPÄISCHE NORM

May 2020

ICS 97.120

Supersedes EN 60730-2-8:2002 and all of its
amendments and corrigenda (if any)

English Version

**Automatic electrical controls for household and similar use - Part
2-8: Particular requirements for electrically operated water
valves, including mechanical requirements
(IEC 60730-2-8:2018)**

Dispositifs de commande électrique automatiques à usage
domestique et analogue - Partie 2-8: Règles particulières
pour les électrovannes hydrauliques, y compris les
prescriptions mécaniques
(IEC 60730-2-8:2018)

Automatische elektrische Regel- und Steuergeräte - Teil 2-
8: Besondere Anforderungen an elektrisch betriebene
Wasserventile, einschließlich mechanischer Anforderungen
(IEC 60730-2-8:2018)

This European Standard was approved by CENELEC on 2018-10-02. 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 60730-2-8:2020 (E)

European foreword

The text of document 72/1077/CDV, future edition 3 of IEC 60730-2-8, prepared by IEC/TC 72 "Automatic electrical controls" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 60730-2-8:2020.

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 (dop) 2020-11-01
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2023-05-01

This document supersedes EN 60730-2-8:2002 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 60730-2-8:2018 was approved by CENELEC as a European Standard without any modification.

Annex ZA

(normative)

Normative references to international publications with their corresponding European publications

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.

NOTE 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

Annex ZA of EN 60730-1 is applicable with the following additions:

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
ISO 7-1	1994	Pipe threads where pressure-tight joints are made on the threads – Part 1: Dimensions, tolerances and designation	-	-
ISO 65	1981	Carbon steel tubes suitable for screwing in accordance with ISO 7/1	-	-
ISO 228-1	-	Pipe threads where pressure-tight joints are not made on the threads -- Part 1: Dimensions, tolerances and designation	EN ISO 228-1	-
ISO 630	-	Structural steels - Plates, wide flats, bars, sections and profiles	-	-
ISO 1179-1	-	Connections for general use and fluid power – Ports and stud ends with ISO 228-1 threads with elastomeric or metal-to-metal sealing – Part 1: Threaded ports	EN ISO 1179-1	-
ISO 4144	-	Pipework - Stainless steel fittings threaded in accordance with ISO_7-1	-	-

This page is intentionally left blank



IEC 60730-2-8

Edition 3.0 2018-08

INTERNATIONAL STANDARD

**Automatic electrical controls –
Part 2-8: Particular requirements for electrically operated water valves,
including mechanical requirements**



THIS PUBLICATION IS COPYRIGHT PROTECTED

Copyright © 2018 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.

IEC Central Office
3, rue de Varembe
CH-1211 Geneva 20
Switzerland

Tel.: +41 22 919 02 11
info@iec.ch
www.iec.ch

About the IEC

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 corrigenda or an amendment might have been published.

IEC Catalogue - webstore.iec.ch/catalogue

The stand-alone application for consulting the entire bibliographical information on IEC International Standards, Technical Specifications, Technical Reports and other documents. Available for PC, Mac OS, Android Tablets and iPad.

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 also once a month by email.

Electropedia - www.electropedia.org

The world's leading online dictionary of electronic and electrical terms containing 21 000 terms and definitions 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.

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.



IEC 60730-2-8

Edition 3.0 2018-08

INTERNATIONAL STANDARD

**Automatic electrical controls –
Part 2-8: Particular requirements for electrically operated water valves,
including mechanical requirements**

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

ICS 97.120

ISBN 978-2-8322-5917-7

Warning! Make sure that you obtained this publication from an authorized distributor.

CONTENTS

FOREWORD.....	4
1 Scope and normative references.....	7
2 Terms and definitions	9
3 General requirements	13
4 General notes on tests.....	13
5 Rating	13
6 Classification.....	13
7 Information	16
8 Protection against electric shock.....	17
9 Provision for protective earthing.....	18
10 Terminals and terminations.....	18
11 Constructional requirements	19
12 Moisture and dust resistance	19
13 Electric strength and insulation resistance.....	19
14 Heating	20
15 Manufacturing deviation and drift	21
16 Environmental stress	21
17 Endurance.....	22
18 Mechanical strength.....	23
19 Threaded parts and connections	26
20 Creepage distances, clearances and distances through insulation	26
21 Resistance to heat, fire and tracking	26
22 Resistance to corrosion	26
23 Electromagnetic compatibility (EMC) requirements – Emission.....	26
24 Components	27
25 Normal operation	27
26 Electromagnetic compatibility (EMC) requirements – Immunity.....	27
27 Abnormal operation	27
28 Guidance on the use of electronic disconnection	30
Annex H (normative) Requirements for electronic controls	31
Annex AA (informative) Relation between different flow coefficients	36
Annex BB (normative) Arrangement for the measurement of transient pressures caused by water valves	37
Annex CC (normative) Long term pressure test for thermoplastic bodied valves	40
Annex DD (normative) Torque	42
Annex EE (normative) Arrangement for the measurement of transient pressures caused by water valves with a declared pressure of up to and including 1,0 MPa (10 bar)	46
Bibliography	48
Figure BB.1 – Transient pressure measurement test rig schematic diagram	38
Figure DD.1 – Arrangements for carrying out the torque test.....	42

Figure EE.1 – Transient pressure measurement test rig for valves with a declared pressure of up to and including 1,0 MPa (10 bar) schematic diagram	46
Table 1 – Required information and methods of providing information	16
Table 101 – Nominal size and thread size of end connections.....	16
Table 102 – Torque test requirement for metal valves with internal threaded end-connections	25
Table 103 – Torque test requirement for metal valves with external threaded end-connections	26
Table 104 – Maximum winding temperature (for test of blocked output conditions and valves declared under Table 1, item 113)	28
Table CC.1 – Test requirements for valves intended for uses other than the control of water for tap and shower outlets	40
Table CC.2 – Test requirements for valves intended for the control of water for tap and shower outlets	41
Table DD.1 – Required torque for test	43
Table DD.2 – Tightening torque in newton metres (Nm) for bolts and screws for adaptors	44

INTERNATIONAL ELECTROTECHNICAL COMMISSION

AUTOMATIC ELECTRICAL CONTROLS –

Part 2-8: Particular requirements for electrically operated water valves, including mechanical requirements

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 itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
- 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 60730-2-8 has been prepared by IEC technical committee 72: Automatic electrical controls.

This third edition cancels and replaces the second edition published in 2000, Amendment 1:2002 and its Amendment 2:2015. This edition constitutes a technical revision.

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

- alignment of the text with IEC 60730-1 fifth edition (2013) including Amendment 1:2015;
- introduction of specific requirements for thermoplastic bodied valves for the control of water for tap and shower outlets (18.101.4.3 and Annex CC);
- removal of Subclause 18.102 Wetted material specifications.

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

CDV	Report on voting
72/1077/CDV	72/1120/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 document has been drafted in accordance with the ISO/IEC Directives, Part 2.

This part 2-8 is intended to be used in conjunction with IEC 60730-1. It was established on the basis of the fifth edition (2013) including Amendment 1 (2015) of that publication.

This part 2-8 supplements or modifies the corresponding clauses in IEC 60730-1 so as to convert that publication into the IEC standard: *Safety requirements for electrically operated water valves, including mechanical requirements*.

Where this part 2-8 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, part 2-8 indicates that the relevant clause or subclause applies.

In the development of a fully international standard, it has been necessary to take into consideration the differing requirements resulting from practical experience in various parts of the world and to recognize the variation in national electrical systems and wiring rules.

The "in some countries" notes regarding differing national practices are contained in the following elements:

- Table 1, footnotes ab and ac
- Table 13, footnote aa
- 1.1.4
- 16.2.1
- 18.101.3
- 27.2.3.1
- 27.101
- Table DD. 1, footnote a
- Table DD.2, footnote a

In this publication:

1) The following print types are used:

- Requirements proper: in roman type.
- *Test specifications: in italic type.*
- Notes: in smaller roman type.
- Defined terms: in **bold type**

2) Subclauses, notes, tables or figures which are additional to those in part 1 are numbered starting from 101, additional annexes are lettered AA, BB, etc.

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

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

A bilingual version of this publication may be issued at a later date.

AUTOMATIC ELECTRICAL CONTROLS –

Part 2-8: Particular requirements for electrically operated water valves, including mechanical requirements

1 Scope and normative references

This clause of Part 1 is applicable except as follows:

1.1 Scope

Replacement:

This part of IEC 60730 applies to electrically operated water valves for use in, on or in association with equipment for household and similar use, including heating, air-conditioning and similar applications. The equipment can use electricity, gas, oil, solid fuel, solar thermal energy, etc., or a combination thereof.

NOTE 1 Throughout this document, the word "equipment" means "appliances and equipment."

This document is applicable to electrically operated water valves for building automation within the scope of ISO 16484.

This document also applies to automatic electrically operated water valves for equipment that can be used by the public, such as equipment intended to be used in shops, offices, hospitals, farms and commercial and industrial applications.

EXAMPLE 1: Electrically operated water valves for commercial catering, heating and air-conditioning equipment.

This document does not apply to electrically operated water valves intended exclusively for industrial process applications unless explicitly mentioned in the relevant equipment standard.

This document applies to electrically operated water valves powered by primary or secondary batteries, requirements for which are contained within the standard, including Annex V.

This document does not cover the prevention of contamination of drinking water as a result of contact with materials.

1.1.1 This document 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, on or in association with, household and similar equipment.

This document contains requirements for electrical features of water valves and requirements for mechanical features of valves that affect their intended operation.

This document is also applicable to electrically operated water valves for appliances within the scope of the IEC 60335 series of standards.

This document does not apply to:

- electrically operated water valves of nominal connection size above DN 50;
- electrically operated water valves for admissible nominal pressure rating above 1,6 MPa;

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

[Product Page](#)

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