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## Automatiska elektriska styr- och reglerdon – Del 2-8: Särskilda fordringar på elstyrda vattenventiler, inklusive mekaniska fordringar

*Automatic electrical controls –*

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

Som svensk standard gäller europastandarden EN IEC 60730-2-8:2020. Den svenska standarden innehåller den officiella engelska språkversionen av EN IEC 60730-2-8:2020.

### Nationellt förord

Europastandarden EN IEC 60730-2-8:2020

består av:

- **europastandardens ikraftsättningsdokument**, utarbetat inom CENELEC
- **IEC 60730-2-8, Third edition, 2018 - Automatic electrical controls - Part 2-8: Particular requirements for electrically operated water valves, including mechanical requirements**

utarbetad inom International Electrotechnical Commission, IEC.

Standarden ska användas tillsammans med SS-EN 60730-1, utgåva 5, 2016 och dess separat utgivna tillägg.

Tidigare fastställd svensk standard SS-EN 60730-2-8, utgåva 2, 2002 och SS-EN 60730-2-8/A1, utgåva 1, 2003, gäller ej fr o m 2023-05-01.

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Denna standard är fastställd av SEK Svensk Elstandard, som också kan lämna upplysningar om **sakinnehållet** i standarden.  
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### *Standarder underlättar utvecklingen och höjer elsäkerheten*

Det finns många fördelar med att ha gemensamma tekniska regler för bl a mätning, säkerhet och provning och för utförande, skötsel och dokumentation av elprodukter och elanläggningar.

Genom att utforma sådana standarder blir säkerhetsfordringar tydliga och utvecklingskostnaderna rimliga samtidigt som marknadens acceptans för produkten eller tjänsten ökar.

Många standarder inom elområdet beskriver tekniska lösningar och metoder som åstadkommer den elsäkerhet som föreskrivs av svenska myndigheter och av EU.

### *SEK är Sveriges röst i standardiseringsarbetet inom elområdet*

SEK Svensk Elstandard svarar för standardiseringen inom elområdet i Sverige och samordnar svensk medverkan i internationell och europeisk standardisering. SEK är en ideell organisation med frivilligt deltagande från svenska myndigheter, företag och organisationer som vill medverka till och påverka utformningen av tekniska regler inom elektrotekniken.

SEK samordnar svenska intressenters medverkan i SEKs tekniska kommittéer och stödjer svenska experters medverkan i internationella och europeiska projekt.

### *Stora delar av arbetet sker internationellt*

Utformningen av standarder sker i allt väsentligt i internationellt och europeiskt samarbete. SEK är svensk nationalkommitté av International Electrotechnical Commission (IEC) och Comité Européen de Normalisation Electrotechnique (CENELEC).

Standardiseringsarbetet inom SEK är organiserat i referensgrupper bestående av ett antal tekniska kommittéer som speglar hur arbetet inom IEC och CENELEC är organiserat.

Arbetet i de tekniska kommittéerna är öppet för alla svenska organisationer, företag, institutioner, myndigheter och statliga verk. Den årliga avgiften för deltagandet och intäkter från försäljning finansierar SEKs standardiseringsverksamhet och medlemsavgift till IEC och CENELEC.

### *Var med och påverka!*

Den som deltar i SEKs tekniska kommittéarbete har möjlighet att påverka framtida standarder och får tidig tillgång till information och dokumentation om utvecklingen inom sitt teknikområde. Arbetet och kontakterna med kollegor, kunder och konkurrenter kan gynnsamt påverka enskilda företags affärsutveckling och bidrar till deltagarnas egen kompetensutveckling.

Du som vill dra nytta av dessa möjligheter är välkommen att kontakta SEKs kansli för mer information.

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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**

## **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](http://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	-	-

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# INTERNATIONAL ELECTROTECHNICAL COMMISSION

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## **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.
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- 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;

- food dispensers;
- detergent dispensers;
- steam valves;
- electrically operated water valves designed exclusively for industrial applications.

Throughout this document, where it can be used unambiguously, the term:

- "valve" is used to denote an electrically operated water valve (including actuator and valve body assembly);
- "actuator" means "electrically operated mechanism or prime mover";
- "valve body" means "valve body assembly";
- "equipment" includes "appliance" and "control system".

**1.1.2** This document applies to electrically operated water valves, responsive to or controlling such characteristics as temperature, pressure, passage of time, humidity, light, electrostatic effects, flow, or liquid level, current, voltage, acceleration, or combinations thereof.

**1.1.3** This document also applies to actuators and to valve bodies which are designed to be fitted to each other.

**1.1.4** This document applies to individual valves, valves utilized as part of a system and valves mechanically integral with multi-functional controls having non-electrical outputs.

NOTE Attention is drawn to the fact that, in many countries, additional test requirements and by-laws have been established by the water authorities or companies.

**1.1.5** This document applies to AC or DC powered electrically operated water valves with a rated voltage not exceeding 690 V AC or 600 V DC.

**1.1.6** This document does not take into account the **response value** of an **automatic action** of a valve, if such a **response value** is dependent upon the method of mounting the valve in the equipment. Where a **response value** is of significant purpose for the protection of the **user**, or surroundings, the value defined in the appropriate equipment standard or as determined by the manufacturer shall apply.

**1.1.7** This document applies also to electrically operated water valves incorporating **electronic devices**, requirements for which are contained in Annex H.

**1.1.8** This document applies also to electrically operated water valves using NTC or PTC **thermistors**, requirements for which are contained in Annex J.

**1.1.9** This document applies to the electrical and **functional safety** of electrically operated water valves capable of receiving and responding to communications signals, including signals for power billing rate and demand response.

The signals can be transmitted to or received from external units being part of the valve (wired), or to and from external units which are not part of the valve (wireless) under test.

**1.1.10** This document does not address the integrity of the output signal to the network devices, such as interoperability with other devices unless it has been evaluated as part of the **control system**.

## 1.2 Normative references

This clause of Part 1 is applicable except as follows:

*Addition:*

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*

ISO 630,<sup>1</sup> *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*

ISO 4144, *Pipework – Stainless steel fittings threaded in accordance with ISO 7-1*

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<sup>1</sup> ISO 630 has been withdrawn.