IEC 60730-2-8

Edition 4.0 2025-05
EXTENDED VERSION

INTERNATIONAL STANDARD

This full version of IEC 60730-2-8:2025 includes the content of the references made to IEC 60730-1:2022

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

ICS 97.120

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IEC 60730-2-8:2025-05 EXV(en)

CONTENTS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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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.
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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) IEC draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). IEC takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, IEC had not received notice of (a) patent(s), which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at https://patents.iec.ch. IEC shall not be held responsible for identifying any or all such patent rights.

This extended version (EXV) of the official IEC Standard provides the user with the full content of the Standard.

IEC 60730-2-8:2025 EXV includes the content of IEC 60730-2-8:2025, and the references made to IEC 60730-1:2022.

The specific content of IEC 60730-2-8:2025 is displayed on a blue background.

IEC 60730-2-8 has been prepared by IEC technical committee 72: Automatic electrical controls. It is an International Standard.

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

a) adoption of IEC 60730-1:2022 with all of its significant changes to IEC 60730-1:2013, IEC 60730-1:2013/AMD1:2015 and IEC 60730-1:2013/AMD2:2020.

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This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/publications.

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

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– notes: in smaller roman type.

– Defined terms: **bold type**.

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AUTOMATIC ELECTRICAL CONTROLS –

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

1 Scope

This document applies to **electrically operated water valves**

- for use in, on, or in association with equipment for household appliance and similar use;

NOTE 1 Throughout this document, the word "equipment" means "appliance and equipment" and "control" means "**electrically operated water valve**".

EXAMPLE 1 **Electrically operated water valves** for appliances within the scope of IEC 60335.

- for building automation within the scope of ISO 16484 series and IEC 63044 series (HBES/BACS);

EXAMPLE 2 Independently mounted **water valves**, controls in smart grid systems and controls for building automation systems within the scope of ISO 16484-2.

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EXAMPLE 4 Smart grid control, remote interfaces and controls of energy-consuming equipment including computer or smart phone.

- that are AC or DC powered **electrically operated water valves** with a **rated voltage** not exceeding 690 V AC or 600 V DC;
- used in, on, or in association with equipment that uses electricity, gas, oil, solid fuel, solar thermal energy, etc., or a combination thereof;
- utilized as part of a **control system** or **controls** which are mechanically integral with **multifunctional controls** having non-electrical outputs;
- using NTC or **PTC thermistors** and to discrete **thermistors**, requirements for which are contained in Annex J of Part 1;
- 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;
- **in which actuators** and **valve** bodies are designed to be fitted to each other.
- as well as manual controls when such are electrically or mechanically integral with automatic controls.

NOTE 2 Requirements for manually actuated mechanical switches not forming part of an automatic control are contained in IEC 61058-1-1.

This document applies to

– the inherent safety of **electrically operated water valves**, and

– functional safety of **electrically operated water valves** and safety related systems,

– controls where the performance (for example the effect of EMC phenomena) of the product can impair the overall safety and performance of the controlled system,

– the operating values, operating times, and operating sequences where such are associated with equipment safety.

This document specifies the requirements for construction, operation and testing of **electrically operated water valves** used in, on, or in association with an 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 does not

- apply to **electrically operated water valves** intended exclusively for industrial process applications unless explicitly mentioned in the relevant Part 2 or the equipment standard. However, this document can be applied to evaluate automatic electrical controls intended specifically for industrial applications in cases where no relevant safety standard exists.
- 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**;
- take into account the **response value** of an **automatic action** of a **electrically operated water valve**, if such a **response value** is dependent upon the method of mounting the control 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 will apply.
- 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.
- cover the prevention of contamination of drinking water as a result of contact with materials.

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".

2 Normative references

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.

IEC 60038, *IEC standard voltages*

IEC 60065:2014, *Audio, video and similar electronic apparatus – Safety requirements*

IEC 60068-2-75, *Environmental testing – Part 2-75: Tests – Test Eh: Hammer tests*

IEC 60085, *Electrical insulation – Thermal evaluation and designation*

IEC 60099-1:1991, *Surge arresters – Part 1: Non-linear resistor type gapped surge arresters for a.c. systems*[1]

IEC 60112:2020, *Method for the determination of the proof and the comparative tracking indices of solid insulating materials*

IEC 60127 (all parts), *Miniature fuses*

IEC 60227-1, *Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V – Part 1: General requirements*

IEC 60245-1, *Rubber insulated cables – Rated voltages up to and including 450/750 V – Part 1: General requirements*

IEC 60269 (all parts), *Low-voltage fuses*

IEC 60335-1:2020, *Household and similar electrical appliances – Safety – Part 1: General requirements*

IEC 60384-14, *Fixed capacitors for use in electronic equipment – Part 14: Sectional specification – Fixed capacitors for electromagnetic interference suppression and connection to the supply mains*

IEC 60384-16, *Fixed capacitors for use in electronic equipment – Part 16: Sectional specification – Fixed metallized polypropylene film dielectric DC capacitors*

IEC 60384-17, *Fixed capacitors for use in electronic equipment – Part 17: Sectional specification – Fixed metallized polypropylene film dielectric AC and pulse capacitors*

IEC 60417, *Graphical symbols for use on equipment*

IEC 60423, *Conduit systems for cable management – Outside diameters of conduits for electrical installations and threads for conduits and fittings*

IEC 60529:1989, *Degrees of protection provided by enclosures (IP code)*
IEC 60529:1989/AMD1:1999
IEC 60529:1989/AMD2:2013

IEC 60539 (all parts), *Directly heated negative temperature coefficient thermistors*

IEC 60664-1:2007[2], *Insulation coordination for equipment within low-voltage systems – Part 1: Principles, requirements and tests*

IEC TR 60664-2 (all parts), *Insulation coordination for equipment within low-voltage systems*

IEC 60664-3:2016, *Insulation coordination for equipment within low-voltage systems – Part 3: Use of coating, potting or moulding for protection against pollution*

IEC 60664-4, *Insulation coordination for equipment within low-voltage systems – Part 4: Consideration of high-frequency voltage stress*

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1 Withdrawn.

2 Withdrawn.

IEC 60695-2-10, *Fire hazard testing – Part 2-10: Glowing/hot-wire based test methods – Glow-wire apparatus and common test procedure*

IEC 60695-2-11:2021, *Fire hazard testing – Part 2-11: Glowing/hot-wire based test methods – Glow-wire flammability test method for end-products (GWEPT)*

IEC 60695-10-2, *Fire hazard testing – Part 10-2: Abnormal heat – Ball pressure test method*

IEC 60730-1:2022, *Automatic electrical controls – Part 1: General requirements*

IEC 60738 (all parts), *Thermistors – Directly heated positive temperature coefficient*

IEC 60747-5-5, *Semiconductor devices – Part 5-5: Optoelectronic devices – Photocouplers*

IEC 60884-1, *Plugs and socket-outlets for household and similar purposes – Part 1: General requirements*

IEC 60884-2-5:2017, *Plugs and socket-outlets for household and similar purposes – Part 2-5: Particular requirements for adaptors*

IEC 60998-2-2, *Connecting devices for low-voltage circuits for household and similar purposes – Part 2-2: Particular requirements for connecting devices as separate entities with screwless-type clamping units*

IEC 60998-2-3, *Connecting devices for low-voltage circuits for household and similar purposes – Part 2-3: Particular requirements for connecting devices as separate entities with insulation-piercing clamping units*

IEC 60999-1, *Connecting devices – Electrical copper conductors – Safety requirements for screw-type and screwless-type clamping units – Part 1: General requirements and particular requirements for clamping units for conductors from 0,2 mm^2 up to 35 mm^2 (included)*

IEC 61000-3-2, *Electromagnetic compatibility (EMC) – Part 3-2: Limits – Limits for harmonic current emissions (equipment input current ≤ 16 A per phase)*

IEC 61000-3-3, *Electromagnetic compatibility (EMC) – Part 3-3: Limits – Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current ≤16 A per phase and not subject to conditional connection*

IEC 61000-3-11, *Electromagnetic compatibility (EMC) – Part 3-11: Limits – Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems – Equipment with rated current ≤ 75 A and subject to conditional connection*

IEC 61000-3-12, *Electromagnetic compatibility (EMC) – Part 3-12: Limits – Limits for harmonic currents produced by equipment connected to public low-voltage systems with input current >16 A and ≤ 75 A per phase*

IEC 61000-4-2:2008, *Electromagnetic compatibility (EMC) – Part 4-2: Testing and measurement techniques – Electrostatic discharge immunity test*

IEC 61000-4-3, *Electromagnetic compatibility (EMC) – Part 4-3: Testing and measurement techniques – Radiated, radio-frequency, electromagnetic field immunity test*

IEC 61000-4-4, *Electromagnetic compatibility (EMC) – Part 4-4: Testing and measurement techniques – Electrical fast transient/burst immunity test*

IEC 61000-4-5:2014, *Electromagnetic compatibility (EMC) – Part 4-5: Testing and measurement techniques – Surge immunity test*
IEC 61000-4-5:2014/AMD1:2017

IEC 61000-4-6, *Electromagnetic compatibility (EMC) – Part 4-6: Testing and measurement techniques – Immunity to conducted disturbances, induced by radio-frequency fields*

IEC 61000-4-8, *Electromagnetic compatibility (EMC) – Part 4-8: Testing and measurement techniques – Power frequency magnetic field immunity test*

IEC 61000-4-11, *Electromagnetic compatibility (EMC) – Part 4-11: Testing and measurement techniques – Voltage dips, short interruptions and voltage variations immunity tests for equipment with current up to 16 A per phase*

IEC 61000-4-13:2002, *Electromagnetic compatibility (EMC) – Part 4-13: Testing and measurement techniques – Harmonics and interharmonics including mains signalling at a.c. power port, low frequency immunity tests*
IEC 61000-4-13:2002 /AMD1:2009
IEC 61000-4-13:2002 /AMD2:2015

IEC 61000-4-20, *Electromagnetic compatibility (EMC) – Part 4-20: Testing and measurement techniques – Emission and immunity testing in transverse electromagnetic (TEM) waveguides*

IEC 61000-4-21, *Electromagnetic compatibility (EMC) – Part 4-21: Testing and measurement techniques – Reverberation chamber test methods*

IEC 61000-4-22, *Electromagnetic compatibility (EMC) – Part 4-22: Testing and measurement techniques – Radiated emissions and immunity measurements in fully anechoic rooms (FARs)*

IEC 61000-4-28, *Electromagnetic compatibility (EMC) – Part 4-28: Testing and measurement techniques – Variation of power frequency, immunity test for equipment with input current not exceeding 16A per phase*

IEC 61000-6-1:2016, *Electromagnetic compatibility (EMC) – Part 6-1: Generic standards – Immunity standard for residential, commercial and light-industrial environments*

IEC 61000-6-2:2016, *Electromagnetic compatibility (EMC) – Part 6-2: Generic standards – Immunity standard for industrial environments*

IEC 61000-6-3:2020, *Electromagnetic compatibility (EMC) – Part 6-3: Generic standards – Emission standard for equipment in residential environments*

IEC 61000-6-4:2018, *Electromagnetic compatibility (EMC) – Part 6-4: Generic standards – Emission standard for industrial environments*

IEC 61051-1, *Varistors for use in electronic equipment – Part 1: Generic specification*

IEC 61051-2, *Varistors for use in electronic equipment – Part 2: Sectional specification for surge suppression varistors*

IEC 61051-2-2, *Varistors for use in electronic equipment – Part 2: Blank detail specification for zinc oxide surge suppression varistors. Assessment level E*

IEC 61210, *Connecting devices – Flat quick-connect terminations for electrical copper conductors – Safety requirements*

IEC 61249 (all parts), *Materials for printed boards and other interconnecting structures*

IEC 61558-2-6, *Safety of transformers, reactors, power supply units and combinations thereof − Part 2-6: Particular requirements and tests for safety isolating transformers and power supply units incorporating safety isolating transformers for general applications*

IEC 61558-2-16, *Safety of transformers, reactors, power supply units and combinations thereof − Part 2-16: Particular requirements and tests for switch mode power supply units and transformers for switch mode power supply units for general applications*

IEC 61810-3, *Electromechanical elementary relays – Part 3: Replays with forcibly guided (mechanically linked) contacts*

IEC 62151, *Safety of equipment electrically connected to a telecommunication network*

IEC 62319 (all parts), *Polymeric thermistors – Directly heated positive step function temperature coefficient*

IEC 62326 (all parts), *Printed boards*

IEC 62368-1, *Audio/video, information and communication technology equipment – Part 1: Safety requirements*

IEC 63044 (all parts), *Home and Building Electronic Systems (HBES) and Building Automation and Control Systems (BACS)*

CISPR 11, *Industrial, scientific and medical equipment – Radio-frequency disturbance characteristics – Limits and methods of measurement*

CISPR 14-1:2020, *Electromagnetic compatibility – Requirements for household appliances, electric tools and similar apparatus – Part 1: Emission*

CISPR 32:2015, *Electromagnetic compatibility of multimedia equipment – Emission* requirements
CISPR 32:2015/AMD1:2019

ISO 4046-4:2016, *Paper, board, pulps and related terms − Vocabulary − Part 4: Paper and board grades and converted products*

ISO 7637-2:2011, *Road vehicles – Electrical disturbances from conduction and coupling – Part 2: Electrical transient conduction along supply lines only*

ISO 7637-3:2016, *Road vehicles – Electrical disturbances from conduction and coupling – Part 3: Electrical transient transmission by capacitive and inductive coupling via lines other than supply lines*

ISO 16484 (all parts), *Building automation and control systems (BACS)*

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*[3]

[3] Withdrawn.

ISO 228-1:2000, *Pipe threads where pressure-tight joints are not made on the threads – Part 1: Dimensions, tolerances and designation*

ISO 630-2:2011, *Structural steels – Part 2: Technical delivery conditions for structural steels for general purposes*[4]

ISO 1179-1:2013, *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 4144:2003, *Pipework – Stainless steel fittings threaded in accordance with ISO 7-1*

4 Withdrawn. A newer edition was published in 2021, but the listed edition applies.

IEC 60730-2-8

Edition 4.0 2025-05

INTERNATIONAL STANDARD

NORME INTERNATIONALE

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

Dispositifs de commande électrique automatiques –
Partie 2-8: Exigences particulières pour les électrovannes hydrauliques, y compris les exigences mécaniques

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

This document does not

- apply to **electrically operated water valves** intended exclusively for industrial process applications unless explicitly mentioned in the relevant Part 2 or the equipment standard. However, this document can be applied to evaluate automatic electrical controls intended specifically for industrial applications in cases where no relevant safety standard exists.
- 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**;
- take into account the **response value** of an **automatic action** of a **electrically operated water valve**, if such a **response value** is dependent upon the method of mounting the control 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 will apply.
- 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.
- cover the prevention of contamination of drinking water as a result of contact with materials.

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".

2 Normative references

This clause of Part 1 is applicable except as follows.

Addition:

IEC 60730-1:2022, *Automatic electrical controls – Part 1: General requirements*

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*[1]

ISO 228-1:2000, *Pipe threads where pressure-tight joints are not made on the threads – Part 1: Dimensions, tolerances and designation*

ISO 630-2:2011, *Structural steels – Part 2: Technical delivery conditions for structural steels for general purposes*[2]

ISO 1179-1:2013, *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 4144:2003, *Pipework – Stainless steel fittings threaded in accordance with ISO 7-1*

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1 Withdrawn.

2 Withdrawn. A newer edition was published in 2021, but the listed edition applies.

SOMMAIRE

COMMISSION ÉLECTROTECHNIQUE INTERNATIONALE

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DISPOSITIFS DE COMMANDE ÉLECTRIQUE AUTOMATIQUES –

Partie 2-8: Exigences particulières pour les électrovannes hydrauliques, y compris les exigences mécaniques

AVANT-PROPOS

1) La Commission Électrotechnique Internationale (IEC) est une organisation mondiale de normalisation composée de l'ensemble des comités électrotechniques nationaux (Comités nationaux de l'IEC). L'IEC a pour objet de favoriser la coopération internationale pour toutes les questions de normalisation dans les domaines de l'électricité et de l'électronique. À cet effet, l'IEC – entre autres activités – publie des Normes internationales, des Spécifications techniques, des Rapports techniques, des Spécifications accessibles au public (PAS) et des Guides (ci-après dénommés "Publication(s) de l'IEC"). Leur élaboration est confiée à des comités d'études, aux travaux desquels tout Comité national intéressé par le sujet traité peut participer. Les organisations internationales, gouvernementales et non gouvernementales, en liaison avec l'IEC, participent également aux travaux. L'IEC collabore étroitement avec l'Organisation Internationale de Normalisation (ISO), selon des conditions fixées par accord entre les deux organisations.
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8) L'attention est attirée sur les références normatives citées dans cette publication. L'utilisation de publications référencées est obligatoire pour une application correcte de la présente publication.
9) L'IEC attire l'attention sur le fait que la mise en application du présent document peut entraîner l'utilisation d'un ou de plusieurs brevets. L'IEC ne prend pas position quant à la preuve, à la validité et à l'applicabilité de tout droit de brevet revendiqué à cet égard. À la date de publication du présent document, l'IEC n'avait pas reçu notification qu'un ou plusieurs brevets pouvaient être nécessaires à sa mise en application. Toutefois, il y a lieu d'avertir les responsables de la mise en application du présent document que des informations plus récentes sont susceptibles de figurer dans la base de données de brevets, disponible à l'adresse https://patents.iec.ch. L'IEC ne saurait être tenue pour responsable de ne pas avoir identifié de tels droits de brevets.

L'IEC 60730-2-8 a été établie par le comité d'études 72 de l'IEC: Commandes électriques automatiques. Il s'agit d'une Norme internationale.

Cette quatrième édition annule et remplace la troisième édition parue en 2018 et l'Amendement 1:2021. Cette édition constitue une révision technique.

Cette édition inclut les modifications techniques majeures suivantes par rapport à l'édition précédente:

a) adoption de l'IEC 60730-1:2022 avec toutes les modifications majeures par rapport à l'IEC 60730-1:2013, l'IEC 60730-1:2013/AMD1:2015 et l'IEC 60730-1:2013/AMD2:2020.

Le texte de cette Norme internationale est issu des documents suivants:

Projet	Rapport de vote
72/1478/FDIS	72/1482/RVD

Le rapport de vote indiqué dans le tableau ci-dessus donne toute information sur le vote ayant abouti à son approbation.

La langue employée pour l'élaboration de cette Norme internationale est l'anglais.

Ce document a été rédigé selon les Directives ISO/IEC, Partie 2, il a été développé selon les Directives ISO/IEC, Partie 1 et les Directives ISO/IEC, Supplément IEC, disponibles sous www.iec.ch/members_experts/refdocs. Les principaux types de documents développés par l'IEC sont décrits plus en détail sous www.iec.ch/standardsdev/publications.

Une liste de toutes les parties de la série IEC 60730, publiées sous le titre général: *Dispositifs de commande électrique automatiques*, se trouve sur le site web de l'IEC.

La présente partie 2-8 est destinée à être utilisée conjointement avec l'IEC 60730-1. Elle a été établie sur la base de la sixième édition de cette norme (2022). Les éditions futures de l'IEC 60730-1 ou ses amendements pourront être pris en considération.

La présente Partie 2-8 complète ou modifie les articles correspondants de l'IEC 60730-1, de façon à transformer cette publication en norme IEC: Exigences particulières pour les électrovannes hydrauliques, y compris les exigences mécaniques.

Lorsque la présente Partie 2-8 spécifie "addition", "modification" ou "remplacement", il convient d'adapter l'exigence, la modalité d'essai ou la note correspondante de la Partie 1 en conséquence.

Lorsqu'aucune modification n'est nécessaire, la partie 2-8 indique que l'article ou le paragraphe approprié s'applique.

Pour les besoins d'élaboration d'une Norme internationale, il a été nécessaire d'examiner les différentes exigences en s'appuyant sur l'expérience pratique acquise dans différentes régions du monde et d'identifier les variantes nationales au niveau des réseaux d'alimentation électrique et des règles d'installation

L'attention du lecteur est attirée sur le fait que les Annexes R à T donnent une liste de tous les articles qui traitent des différences de pratiques à caractère moins permanent qui existent dans certains pays dans le domaine couvert par le présent document.

Dans la présente publication:

1) Les caractères d'imprimerie suivants sont utilisés:
   - exigences proprement dites: caractères romains;
   - *modalités d'essais: caractères italiques;*
   - notes: petits caractères romains;
   - termes définis: **caractères gras**.

2) Les paragraphes, notes ou articles qui s'ajoutent à ceux de la Partie 1 sont numérotés à partir de 101 et les annexes qui sont ajoutées sont désignées AA, BB, etc.

Le comité a décidé que le contenu de ce document ne sera pas modifié avant la date de stabilité indiquée sur le site web de l'IEC sous webstore.iec.ch dans les données relatives au document recherché. À cette date, le document sera

- reconduit,
- supprimé, ou
- révisé.

DISPOSITIFS DE COMMANDE ÉLECTRIQUE AUTOMATIQUES –

Partie 2-8: Exigences particulières pour les électrovannes hydrauliques, y compris les exigences mécaniques

1 Domaine d'application

Remplacement:

Le présent document s'applique aux **électrovannes hydrauliques**

- utilisées dans, sur ou avec des matériels pour appareil domestique et usage analogue;

NOTE 1 Dans le présent document, le terme "matériel" signifie "appareil et matériel" et "dispositif de commande" signifie "**électrovanne hydraulique**".

EXAMPLE 1 Les **électrovannes hydrauliques** pour appareils qui relèvent du domaine d'application de l'IEC 60335.

- pour l'automatisation des bâtiments qui relèvent du domaine d'application de la série ISO 16484 et de la série IEC 63044 (HBES/BACS);

EXEMPLE 2 Les **vannes hydrauliques** montées indépendamment, les dispositifs de commande des systèmes de réseau intelligent et les dispositifs de commande des systèmes d'automatisation des bâtiments qui relèvent du domaine d'application de l'ISO 16484-2.

- pour des matériels utilisés par le public, tels que les matériels destinés à être utilisés dans des magasins, des bureaux, des hôpitaux, des fermes et des applications commerciales et industrielles;

EXEMPLE 3 Les **électrovannes hydrauliques** pour les installations de restauration, de chauffage et d'air conditionné.

- qui sont des **électrovannes hydrauliques activées intelligentes**;

EXEMPLE 4 Les dispositifs de commande de réseau intelligent, les interfaces distantes et les dispositifs de commande de matériels utilisateurs d'énergie électrique, y compris les ordinateurs ou les mobiles multifonctions.

- qui sont des **électrovannes hydrauliques** à courant alternatif ou continu dont la **tension assignée** ne dépasse pas 690 V en courant alternatif ou 600 V en courant continu;
- qui sont utilisés dans, sur ou avec des matériels qui utilisent l'électricité, le gaz, le pétrole, des combustibles solides, l'énergie thermique solaire, etc. ou une combinaison de ces sources d'énergie;
- qui sont utilisées dans le cadre d'un **système de commande** ou de **dispositifs de commande** qui sont mécaniquement intégrés à des **dispositifs de commande multifonctions** comportant des sorties non électriques;
- qui utilisent des **thermistances CTN** ou CTP ainsi qu'aux dispositifs à **thermistances** discrètes, dont les exigences sont fournies à l'Annexe J de la Partie 1;
- qui réagissent à des caractéristiques telles que la température, la pression, le passage du temps, l'humidité, la lumière, les effets électrostatiques, le débit ou le niveau d'un liquide, le courant, la tension, l'accélération, ou une combinaison de ces caractéristiques, ou qui les régulent;
- dans lesquelles des **actionneurs** et des corps de **vannes** sont conçus pour être fixés l'un à l'autre;
- ainsi qu'aux dispositifs de commande manuels qui sont électriquement ou mécaniquement intégrés à des dispositifs de commande automatique.

NOTE 2 Les exigences relatives aux interrupteurs mécaniques à action manuelle qui ne font pas partie d'un dispositif de commande automatique sont contenues dans l'IEC 61058-1-1.

Le présent document s'applique:

– à la sécurité intrinsèque des **électrovannes hydrauliques**; et

– à la sécurité fonctionnelle des **électrovannes hydrauliques** et des systèmes de sécurité;

– aux dispositifs de commande pour lesquels les performances (par exemple, l'effet des phénomènes CEM) du produit peuvent compromettre la sécurité et les performances globales du système commandé;

– aux valeurs de fonctionnement, aux temps de fonctionnement et aux séquences de fonctionnement lorsque ces éléments interviennent dans la sécurité du matériel.

Le présent document spécifie les exigences relatives à la construction, au fonctionnement et aux essais des **électrovannes hydrauliques** utilisées dans, sur ou avec du matériel.

Le présent document établit les exigences relatives aux caractéristiques électriques des **vannes hydrauliques** et aux caractéristiques mécaniques des **vannes** qui ont une incidence sur leur fonctionnement prévu.

Le présent document:

- ne s'applique pas aux **électrovannes hydrauliques** destinées exclusivement à des applications de processus industriels, sauf mention particulière dans la Partie 2 applicable ou la norme du matériel. Toutefois, le présent document peut être utilisé pour évaluer les dispositifs de commande électriques automatiques destinés spécifiquement aux applications industrielles lorsqu'il n'existe aucune norme de sécurité pertinente;
- ne s'applique pas aux:
  - **électrovannes hydrauliques** dont la dimension nominale du raccord dépasse le DN 50;
  - **électrovannes hydrauliques** pour lesquelles la **pression nominale** admissible est supérieure à 1,6 MPa;
  - distributeurs de produits alimentaires;
  - distributeurs de détergents;
  - **soupapes** à vapeur;
- ne prend pas en compte la **valeur de réponse** d'une **action automatique** d'une **électrovanne hydraulique**, lorsque cette **valeur de réponse** dépend de la méthode de montage du dispositif de commande dans le matériel. Lorsqu'une **valeur de réponse** est importante du point de vue de la protection de l'**utilisateur** ou de l'environnement, la valeur définie dans la norme de matériel pertinente ou déterminée par le fabricant s'applique;
- ne traite pas de l'intégrité du signal de sortie transmis aux dispositifs de réseau, comme l'interopérabilité avec d'autres dispositifs, à moins qu'elle ait été évaluée comme partie intégrante du système de commande;
- ne couvre pas la prévention de la contamination de l'eau potable à la suite d'un contact avec les matériaux.

Dans l'ensemble du présent document, lorsqu'il peut être utilisé sans ambiguïté:

– le terme "**vanne**" est utilisé pour désigner une **électrovanne hydraulique** (y compris l'**actionneur** et l'**ensemble corps de vanne**);

– le terme "**actionneur**" signifie "mécanisme à commande électrique ou moteur primaire";

– le terme "**corps de vanne**" signifie "**ensemble corps de vanne**";

– le terme "matériel" signifie "appareil" et "système de commande".

2 Références normatives

L'article de la Partie 1 s'applique, avec l'exception suivante.

Addition:

IEC 60730-1:2022, *Dispositifs de commande électrique automatiques – Partie 1: Exigences générales*

ISO 7-1:1994, *Filetages de tuyauteries pour raccordement avec étanchéité dans le filet – Partie 1: Dimensions, tolérances et désignation*

ISO 65:1981, *Tubes en acier au carbone filetables selon ISO 7-1*[1]

ISO 228-1:2000, *Filetages de tuyauterie pour raccordement sans étanchéité dans le filet – Partie 1: Dimensions, tolérances et désignation*

ISO 630-2:2011, *Aciers de construction – Partie 2: Conditions techniques de livraison pour aciers de construction métallique d'usage général*[2]

ISO 1179-1:2013, *Raccordements pour applications générales et transmissions hydrauliques et pneumatiques – Orifices et éléments mâles à filetage ISO 228-1 à joint en élastomère ou étanchéité métal sur métal – Partie 1: Orifices filetés*

ISO 4144:2003, *Tuyauteries – Raccords en acier inoxydable, filetés conformément à l'ISO 7-1*

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1 Supprimée.

2 Supprimée. Une édition plus récente a été publiée en 2021, mais l'édition répertoriée s'applique.