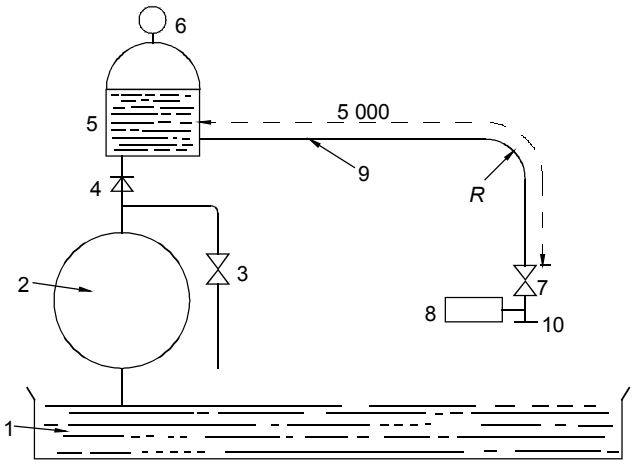
Annexe EE
(normative)

Dispositif pour la mesure des pressions transitoires dues aux vannes hydrauliques de pression déclarée allant jusqu'à 1,0 MPa (10 bar) inclus



1 Récipient de taille convenable rempli d'eau.

2 Pompe de capacité minimale de 100 l/min, à une pression dynamique de 1 MPa (10 bar).

3 Vanne de contournement (non nécessaire si la pompe est mise en oeuvre par une unité de puissance ajustable, point 11).

4 Clapet anti-retour.

5 Réservoir de compensation de capacité minimale de 100 l, rempli d'eau aux deux tiers de sa capacité.

6 Indicateur de pression.

7 Vanne à bille ou à opercules de diamètre nominal ¾ in (19 mm).

8 Transducteur de pression, ayant une gamme de pression allant de la pression atmosphérique à 1,6 MPa (16 bar) et une fréquence naturelle supérieure à 200 Hz.

9 Il faut choisir un tube de cuivre d'épaisseur comprise entre 1,0 mm et 1,5 mm, de longueur approximative de 5 m ± 0,1 m et de diamètre approprié non inférieur aux dimensions nominales de la vanne hydraulique en essai. Dans ces conditions, la vérification de la vitesse du débit d'eau peut être faite à n'importe quelle valeur convenable ne dépassant pas 2 m/s, mesuré avec la vanne en essai complètement ouverte et à une pression dynamique de 0,6 MPa (6 bar). La vitesse du débit d'eau est calculée en partant de la mesure du débit faite par un débitmètre. Le tube est courbé avec un rayon *R* non inférieur à 300 mm.

10 Raccord pour la vanne en essai, équipée d'un robinet à bille, à vis ou à clapet de diamètre nominal de taille identique à la taille nominale de la vanne en essai.

PROCÉDURE DE MESURE POUR LE DISPOSITIF DE L'ANNEXE EE

a) Après la mesure du débit à une pression dynamique de 0,6 MPa (6 bar), vérifier la vitesse du débit d'eau, si sa vitesse est égale ou inférieure à 2 m/s, utiliser le même tube que pour les essais de 18.101.3.1 à 18.101.3.3. Dans le cas où la vitesse est supérieure, choisir un tube approprié dans la liste donnée à l'annexe BB, point 9, en en retenant un qui maintienne la vitesse du débit à moins de 2 m/s.

b) Connecter l'organe de manoeuvre de la vanne en essai à une alimentation électrique appropriée.

c) Démarrer la pompe (2), et éventuellement utiliser la vanne de contournement (3) pour ajuster la pression à 0,1 MPa (1 bar), la vanne en essai étant complètement ouverte.

d) Désaérer complètement la vanne en essai, en l'ouvrant et en la fermant plusieurs fois. S'il s'agit d'une vanne à chambres multiples, cette désaération doit être effectuée sur chaque chambre avant le début des mesures.

e) Vérifier la pression du récipient (5) grâce à l'indicateur de pression (6) et la corriger si nécessaire en utilisant la vanne de contournement (3).

f) Un enregistreur ou un traceur de courbe sont à connecter à la sortie du transducteur de pression (8). Cet enregistreur doit être initialisé au point de départ et l'essai à faible pression de 18.101.3.1 peut commencer.

g) Vérifier que les résultats enregistrés répondent aux prescriptions appropriées.

h) Ajuster la pression statique à 0,6 MPa (6 bar) en utilisant la vanne de contournement (3), la vanne (10) étant en position ouverte. Répéter les points d) à g) pour vérifier les prescriptions de 18.101.3.2.

i) Vérifier la pression statique à 0,6 MPa (6 bar) la vanne (10) étant en fermée. Si nécessaire, répéter la désaération. Il faut initialiser l'enregistreur de nouveau; à ce moment, l'essai de pression transitoire de 18.101.3.3 peut démarrer.

j) Vérifier les résultats enregistrés et, si nécessaire, répéter les points i) et j).

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IEC 60730-2-8

Edition 2.2 2015-11

FINAL VERSION

VERSION FINALE

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

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 60730-2-8:2000-02+AMD1:2002-11+AMD2:2015-11 CSV(en-fr)

CONTENTS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

AUTOMATIC ELECTRICAL CONTROLS FOR HOUSEHOLD AND SIMILAR USE –

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

FOREWORD

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This Consolidated version of IEC 60730-2-8 bears the edition number 2.2. It consists of the second edition (2000-02) [documents 72/428/FDIS and 72/439/RVD], its amendment 1 (2002-11) [documents 72/553/FDIS and 72/557/RVD] and its amendment 2 (2015-11) [documents 72/1011A/FDIS and 72/1025/RVD]. The technical content is identical to the base edition and its amendments.

This Final version does not show where the technical content is modified by amendments 1 and 2. A separate Redline version with all changes highlighted is available in this publication.

International Standard IEC 60730-2-8 has been prepared by IEC technical committee 72: Automatic controls for household use.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 3.

This part 2-8 is intended to be used in conjunction with IEC 60730-1. It was established on the basis of the fourth edition (2010) of that publication. Consideration may be given to future editions of, or amendments to, IEC 60730-1.

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, items 113 and 114
– 14.7.4, note 101
– 16.2.1
– 27.2.3.1
– annex CC
– table DD.1.2.1, note 1
– table DD.6, note 1

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.
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 the base publication and its amendments will remain unchanged until the stability 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.

AUTOMATIC ELECTRICAL CONTROLS FOR HOUSEHOLD AND SIMILAR USE –

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 as follows:

1.1 This part 2-8 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 may use electricity, gas, oil, solid fuel, solar thermal energy, etc., or a combination thereof.

1.1.1 This part 2-8 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 part 2-8 contains requirements for electrical features of water valves and requirements for mechanical features of valves that affect their intended operation.

This part 2-8 is also applicable to electrically operated water valves for appliances within the scope of IEC 60335.

Electrically operated valves for equipment not intended for normal household use but which may nevertheless be used by the public, such as equipment intended to be used by laymen in shops, in light industry and on farms, are within the scope of this part 2-8.

This part 2-8 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.

1.1.2 Throughout this part 2-8, 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".

1.1.3 This part 2-8 also applies to actuators and to valve bodies which are designed to be fitted to each other.

1.1.4 This part 2-8 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.

1.5 Normative references

This clause of part 1 is applicable except as follows:

Addition:

IEC 60335 (all parts), *Household and similar electrical appliances – Safety*

IEC 60730-1:2010, *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*

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

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*

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

ISO 4400, *Fluid power systems and components – Three-pin electrical plug connectors with earth contact – Characteristics and requirements*

ISO 6952, *Fluid power systems and components – Two-pin electrical plug connectors with earth contact – Characteristics and requirements*

2 Definitions

This clause of part 1 is applicable, except as follows:

2.2 Definitions of types of control according to purpose

2.2.17
electrically operated valve

Addition:

NOTE A semi-automatic valve that is opened manually and closes automatically or vice versa is also covered by this definition.