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INTERNATIONAL STANDARD

NORME INTERNATIONALE

AMENDMENT 2
AMENDEMENT 2

Automatic electrical controls for household and similar use –
Part 2-19: Particular requirements for electrically operated oil valves, including mechanical requirements

Dispositifs de commande électrique automatiques à usage domestique et analogue –
Partie 2-19: Règles particulières pour les électrovannes de combustible liquide, y compris les prescriptions mécaniques

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

COMMISSION ELECTROTECHNIQUE INTERNATIONALE

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FOREWORD

This amendment has been prepared by IEC technical committee 72: Automatic controls for household use.

The text of this amendment is based on the following documents:

FDIS	Report on voting
72/745/FDIS	72/750/RVD

Full information on the voting for the approval of this amendment can be found in the report on voting indicated in the above table.

This amendment is based on IEC 60730-2-19, Edition 1 (1997), and its amendment 1 (2000).

The committee has decided that the contents of this amendment and the base 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- withdrawn,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.

Page 3

CONTENTS

Replace the existing titles of Clauses 20, 23, and 26 by their respective new titles as follows:

20 Creepage distances, clearances and distances through solid insulation

23 Electromagnetic compatibility (EMC) requirements – emission

26 Electromagnetic compatibility (EMC) requirements – immunity

Replace the existing title of Table 27.2.101 in Amendment 1 by the following new title:

Maximum winding temperature (for test of blocked output conditions and valves declared according to Table 7.2, requirement 113)

Page 5

FOREWORD

Replace the second paragraph after the table indicating the Report on voting with the following new paragraph:

This Part 2-19 is intended to be used in conjunction with IEC 60730-1. It was established on the basis of the third edition of that standard (1999) and its amendment 1 (2003). Consideration may be given to future editions of, or amendments to IEC 60730-1.

Page 7

Replace the "in some countries" *note with the following note:*

The "in some countries" notes regarding differing national practice are contained in the following subclauses:

– Table 7.2, requirement 120

– Table 7.2, note 102

– 11.103

– 11.105.1

– 11.105.2

– 11.113

– 18.102

– 27.2.101.1

– H.26.10

Page 9

1.1.1

Replace the first paragraph with the following:

This 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 electrically operated oil valves used in, or in association with, household or similar equipment, but also extended to industrial purposes where no dedicated product standard exists, such as that for central heating, air conditioning, process heating, etc.

Page 11

1.5 Normative references

Delete the following references:

IEC 60335-1:1991, *Safety of household and similar electrical appliances – Part 1: General requirements*

IEC 60529:1989, *Degrees of protection provided by enclosures (IP Code)*

IEC 61058-1:1990, *Switches for appliances – Part 1: General requirements*

Replace the reference to IEC 60730-2-14:1995 with the following:

IEC 60730-2-14:2001, *Automatic electrical controls for household and similar use – Part 2: Particular requirements for electric actuators*

ISO 228-1:2000

Page 13

2 Definitions

2.3 Definitions relating to the function of controls

Add, after 2.3.103, the following new definitions:

2.3.103.1
semi-automatic normally open valve with latch
a valve which is closed when energized. When power is removed the valve will not open automatically and must be manually reset

2.3.103.2
normally open valve, automatic
a valve which is open when not electrically energized and when power is removed the valve will open automatically

Page 17

6 Classification

6.3.12.103 – normally open valve

Modify, on page 19, the existing subclause as follows:

6.3.12.103 – normally open valve;
6.3.12.103.1 – normally open valve, automatic;
6.3.12.103.2 – normally open valve, semi-automatic with latch;

Page 21

6.103 According to nominal pipe size of end connections

Replace the existing note with the following new note:

Nominal size designation corresponds to the nominal size flanges according to ISO 7005-1 or ISO 7005-2.

Page 23

Table 7.2

Addition:

Add, the following requirement:

Information	Clause or subclause	Method
121 Identify normally open and normally closed type valves	2.3.102, 2.3.103, 11.103	C

Page 29

11.103

Replace the second paragraph by the following:

Compliance is checked by connecting the normally closed (normally open) valve to the supply at rated voltage, at room temperature and when mounted in the most unfavourable position declared in Table 7.2, requirement 31, and with or without oil at the maximum working pressure connected to the valve inlet, whichever is more unfavourable. The voltage is then slowly reduced to 15 % of the minimum rated voltage. Before this value is reached, the valve shall have closed (opened) automatically.

Add the following note at the end of the subclause:

The value of 15 % is based on the usual normally closed valves where remanence, friction and possible rest currents due to control and signalling circuits can influence the closing force.

11.104.1

Replace "normally closed valves" *with* "normally closed, normally open and safety shutoff valves of the automatic type".

Page 31

11.104.6

Delete the note.

11.104.8

Add, after "closing" *the words* "or opening in case of normally open valves".

11.105.1

Replace, in the second paragraph, "ISO 274" *with* "the applicable dimensioning standard for copper tubing of circular section."

Page 33

11.106.1

Replace item d) by the following:

d) if also declared as a semi-automatic valve, permanent blocking of the manual actuating means shall be discouraged by suitable means; and

Suitable means may be: strong actuating force, button or handle protected by a cover, recessed button with close tolerance with regard to enclosure.

Replace item e), by the following:

e) shall not be equipped with a means for holding it in the open position except for the manual reset mechanism, if applicable.

Page 35

Add, after 11.113, the following new subclause:

11.114 Normally open valves shall open and close independently of the energy supplied by oil flow through the valve.

Compliance is checked by the test of 27.3.

Page 41

20 Creepage distances, clearances and distances through insulation

Replace the existing title with the following new title:

20 Creepage distances, clearances and distances through solid insulation

Page 43

23 Radio interference suppression

Replace the existing title with the following new title:

23 Electromagnetic compatibility (EMC) requirements – emission

25 Normal operation

Replace the existing text with the following new text:

This clause of Part 1 is applicable.

26 Operation with mains-borne perturbations, magnetic and electromagnetic disturbances

Replace the existing title and text with the following new title and text:

26 Electromagnetic compatibility (EMC) requirements – immunity

This clause of Part 1 is applicable.

Page 45

Table 27.2.101 – Maximum permitted temperatures for test of blocked output conditions

Replace the existing table of Amendment 1 by the following new table:

Table 27.2.101 – Maximum winding temperature (for test of blocked output conditions and valves declared under table 7.2, requirement 110)

Condition	Temperature of insulation by class [d] °C							
	A	E	B	F	H	200	220	250
If impedance protected:	150	165	175	190	210	230	250	280
If protected by protective devices:								
During first hour								
– maximum value[a b]	200	215	225	240	260	280	300	330
After first hour								
– maximum value [a]	175	190	200	215	235	255	275	305
– arithmetic average [a c]	150	165	175	190	210	230	250	280

[a] Applicable to actuators with thermal motor protection.

[b] Applicable to actuators protected by incorporated fuses or thermal cut-outs.

[c] Applicable to actuators with no protection.

[d] These classifications correspond to the thermal classes specified in IEC 60085.

27.3 Over-voltage and under-voltage test

Replace the existing title with the following new title:

27.3 Overvoltage and undervoltage test

Replace the second paragraph, on page 47, with the following:

Compliance is checked by submitting the valve to the following test at T_{max} and T_{min} and with oil or without oil whichever is the most unfavourable at the maximum working pressure (see Table 7.2, requirement 102) connected to the valve inlet. For diaphragm type valves, the test is carried out at the minimum working pressure connected to the valve inlet.

Page 47

28 Guidance on the use of electronic disconnection

Replace the existing text with the following new text:

This clause of Part 1 is applicable.

Page 51

H.26 Operation with mains-borne perturbations, magnetic and electromagnetic disturbances

Replace the existing title with the following new title:

H.26 Electromagnetic compatibility (EMC) requirements – immunity

Page 53

H.26.8.5 Test procedure

H.26.9 Fast transient burst test

Replace the existing title with the following new title:

H.26.9 Electrical fast transient/burst test

H.26.11 Electrostatic discharge test

Replace the existing text by the following:

This test is carried out in accordance with IEC 61000-4-2, Clause 5, severity levels 3 and 4.

For level 3, contact discharges at 6 kV to accessible metal parts, or air discharges at 8 kV to accessible parts of insulation material shall apply.

For level 4, contact discharges at 8 kV to accessible metal parts, or air discharges at 15 kV to accessible parts of insulating material shall apply.

The test at severity level 3 is applied with the valve in both the energized and de-energized positions. The valve shall then comply with H.26.15.4, output conditions a) and b).

The test at severity level 4 is then applied with the valve in both the energized and de-energized positions. The valve shall then either comply with H.26.15.4, output conditions a) and b) or assume the de-energized position and comply with 11.108 and 17.5.

H.26.12 Radiated electromagnetic field test

Replace the existing title by the following new title:

H.26.12 Radio-frequency electromagnetic field immunity

Add the following paragraph and note to the existing text:

Controls that incorporate all passive components only (e.g. diode rectifying circuits, resistors, varistors, surge suppressors, or inductors) are not tested according to this clause.

NOTE When using such components parasitic damped oscillatory circuits may occur, the energy content of which is negligible and will not have an influence on the operation of the control.