IEC 60730-2-14

Edition 2.0 2019-03

INTERNATIONAL STANDARD

NORME INTERNATIONALE

AMENDMENT 1
AMENDEMENT 1

Automatic electrical controls –
Part 2-14: Particular requirements for electric actuators

Dispositifs de commande électrique automatiques –
Partie 2-14: Exigences particulières pour les actionneurs électriques

IEC 60730-2-14:2017-08/AMD1:2019-03(en-fr)

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FOREWORD

This amendment has been prepared by IEC technical committee 72: Automatic electrical controls.

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

FDIS	Report on voting
72/1168FDIS	72/1175/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.

The committee has decided that the contents of this amendment and the base publication will remain unchanged until the stability date indicated on the IEC website 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- withdrawn,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.

FOREWORD

Replace the paragraph reading "This Part 2-14 is intended…", *with the following*:

This part 2-14 is intended to be used in conjunction with IEC 60730-1. It was established on the basis of the fifth edition of that standard (2013) including its amendment 1 (2015). Consideration may be given to future editions of, or amendments to, IEC 60730-1.

1 Scope and normative references

1.1 *Add the following new text:*

This part 2-14 applies to **electric actuators** powered by primary or secondary batteries, requirements for which are contained within the standard, including Annex V.

Add the following new subclauses:

1.1.5 Void.

1.1.6 Void.

1.1.7 *Replacement:*

This part 2-14 applies also to **electric actuators** incorporating **electronic devices**, requirements for which are contained in Annex H.

1.1.8 *Replacement:*

This part 2-14 applies also to **electric actuators** using NTC or PTC **thermistors**, requirements for which are contained in Annex J.

1.1.9 *Replacement:*

This part 2-14 applies to the electrical and **functional safety** of **electric actuators** capable of receiving and responding to communications signals, including signals for power billing rate and demand response.

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

1.1.10 *Replacement:*

This part 2-14 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.

2 Terms and definitions

Add the following new definition:

2.3.106
maximum rated mechanical load
maximum mechanical resistance to the active movement of an actuator under normal operating conditions

Note 1 to entry: See also 6.4.102.1 and 6.4.102.2.

6 Classification

6.4.102.1 Rotary movement

Add the following new note:

NOTE **Maximum rated mechanical load** for rotary movement actuators can be declared in terms of rated torque (for the complete **angular rotation**) or, alternatively, in terms of maximum torque, running torque and percentage of the angular rotation in which the maximum torque occurs. The value of the percentage of the angular rotation in which the maximum torque occurs is independent from any specific position within the travel of the actuator; maximum torque can be reached at any position within the actuator travel (e.g. at start position, at end position, at each end, in the middle, etc.).

6.4.102.2 Linear movement

Add the following new note:

NOTE **Maximum rated mechanical load** for linear movement actuators can be declared in terms of rated force (for the complete **stroke**) or, alternatively, in terms of maximum force, running force and percentage of the stroke in which the maximum force occurs. The value of the percentage of the stroke in which the maximum force occurs is

independent from any specific position within the travel of the actuator; maximum force can be reached at any position within the actuator travel (e.g. at start position, at end position, at each end, in the middle, etc.).

7 Information

Table 1 – (7.2 of edition 3) – Required information and methods of providing information

*Replace, in item 27, "***automatic action**[102]*" with "***automatic action** [bb]*".*

*Replace, in item 34, "***operating time** [101, 103]*" with "***operating time**[aa]*".*

*Add, in item 34, under "*Method*", footnote "*cc*" after "*C*", to read "*C[cc]*".*

Replace the row for item 105 with the following:

105 **maximum rated mechanical load**[dd]	2.3.106, 6.4.102.1, 6.4.102.2, 14.4, 15.5.102, 17.4.101	D

Replace the row "Additional notes" with the following:

Additional footnotes:

[aa] This may be given as a maximum percentage of ON time of the power supply to avoid over-heating of the windings in a declared period of time.

[bb] **Electric actuators** are subjected to a minimum of 6 000 cycles.

[cc] For integrated and incorporated **electric actuators**, the method is D.

[dd] For test purposes, representative physical load may be defined by agreement between the manufacturer and testing authority (e.g. dedicated test device).

17.4 Manual and mechanical conditions for the tests

Add, after 17.4.4, the following new text:

Additional subclause:

17.4.101 The **electric actuator** shall be loaded with the **maximum rated mechanical load** (item 105 of Table 1).

25 Normal operation

Replace the existing text with the following:

This clause of Part 1 is applicable except as follows:

25.2 *Not applicable.*

27 Abnormal operation

Delete subclause 27.3.

Annex H – Requirements for electronic controls

H.26.5 Voltage dips and voltage interruptions and voltage variations in the power supply network

H.26.5.1.2.101 Compliance

Renumber subclause H.26.5.1.2.101 as H.26.5.1.101.

In the first paragraph, replace the reference to "H.26.5.2" *with* "H.26.5.1.2".

Replace the second paragraph with the following:

During the tests according to H.26.5.1.2 of an interruption of one cycle and of an interruption of one half-cycle of the supply waveform, the ***control*** *shall continue to operate after restoration of the supply voltage from the position the* ***electric actuator*** *was in right before the interruption.*

H.26.5.2.2 Test procedure

Add, after H.26.5.2.2, the following new text:

Additional subclause:

H.26.5.2.101 Compliance

After the test according to H.26.5.2.2 of voltage test level 0 % V_R, the ***electric actuator*** *shall provide normal operation.*

During the tests according to H.26.5.2.2 of voltage test level 40 % V_R, the ***control*** *shall continue to operate after restoration of the supply voltage from the position the* ***electric actuator*** *was in immediately before the interruption.*

H.26.8 Surge immunity test

H.26.8.101 Compliance

Replace, in the first paragraph, "H.26.9.3" *with* "H.26.8.3".

H.26.9 Electrical fast transient/ burst immunity test

Renumber subclause H.26.9.3.101 as H.26.9.101.

H.26.13 Test of influence of supply frequency variations

H.26.13.3 Test procedure

Replace the reference to "Table H.19" *with* "Table H.22".

H.26.13.101 Compliance

In the first paragraph, replace "H.26.12.3.2" *with* "H.26.13.3".

H.26.14 Power frequency magnetic field immunity test

In the second paragraph, replace “H.26.14.3.101” *with* “H.26.14.101” *and* "H.26.14.2" *with* "H.26.14.3".

Renumber subclause H.26.14.3.101 as H.26.14.101.

Annex AA – Regional differences

United States

7 Information

Table 1 – (7.2 of edition 3) – Required information and methods of providing information

Replace the existing text with the following:

*Add, in items 101 and 102, under "*Method*", footnote "*ee*" after "*D*" to read "*D[ee]*".*

Add the following new footnote:

[ee] For independently mounted actuators, the method is C.