UL 60730-2-13

STANDARD FOR SAFETY

Automatic Electrical Controls – Part 2-13: Particular Requirements for Humidity Sensing Controls

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UL Standard for Safety for Automatic Electrical Controls – Part 2-13: Particular Requirements for Humidity Sensing Controls, UL 60730-2-13

Third Edition, Dated February 15, 2019

Summary of Topics

This Third Edition of ANSI/UL 60730-2-13 is an adoption of IEC 60730-2-13, Edition 3, issued October 2017. This new edition dated February 15, 2019, was issued to reflect the latest approval date as an American National Standard. Please note that the National Difference document incorporates all of the U.S. national differences for UL 60730-2-13.

The requirements are substantially in accordance with Proposal(s) on this subject dated November 23, 2018.

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ANSI/UL 60730-2-13-2019

UL 60730-2-13

Standard for Automatic Electrical Controls – Part 2-13: Particular Requirements for Humidity Sensing Controls

Prior to the second edition of UL 60730-2-13, the requirements for the products covered by this Standard were included in UL 60730-2-13A.

First Edition – February, 2002
Second Edition – July, 2014

Third Edition

February 15, 2019

This ANSI/UL Standard for Safety consists of the Third Edition.

The most recent designation of ANSI/UL 60730-2-13 as an American National Standard (ANSI) occurred on February 15, 2019. ANSI approval for a standard does not include the Cover Page, Transmittal Pages, Title Page, or Preface. The National Difference Page and IEC Foreword are also excluded from the ANSI approval of IEC-based standards.

Comments or proposals for revisions on any part of the Standard may be submitted to UL at any time. Proposals should be submitted via a Proposal Request in UL's On-Line Collaborative Standards Development System (CSDS) at https://csds.ul.com.

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Preface (UL)

This UL Standard is based on IEC Publication 60730-2-13: Third edition Automatic electrical controls – Part 2-13: Particular requirements for humidity sensing controls. IEC publication 60730-2-13 is copyrighted by the IEC.

This UL Standard UL 60730-2-13 Standard for Safety for Automatic Electrical Controls – Part 2-13: Particular Requirements for Humidity Sensing Controls, is to be used in conjunction with the Fifth edition of UL 60730-1. The requirements for humidity sensing controls are contained in this Part 2 Standard and UL 60730-1.

Requirements of this Part 2 Standard, where stated, amend the requirements of UL 60730-1.

Where a particular subclause of UL 60730-1 is not mentioned in UL 60730-2-13, the UL 60730-1 subclause applies.

These materials are subject to copyright claims of IEC and UL. No part of this publication may be reproduced in any form, including an electronic retrieval system, without the prior written permission of UL. All requests pertaining to the Automatic Electrical Controls – Part 2-13: Particular Requirements for Humidity Sensing Controls, UL 60730-2-13 Standard should be submitted to UL.

Note – Although the intended primary application of this Standard is stated in its Scope, it is important to note that it remains the responsibility of the users of the Standard to judge its suitability for their particular purpose.

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NATIONAL DIFFERENCES

National Differences from the text of International Electrotechnical Commission (IEC) Publication 60730-2-13, Automatic Electrical Controls – Part 2-13: Particular Requirements for Humidity Sensing Controls, copyright 2017, are indicated by notations (differences) and are presented in bold text.

There are five types of National Differences as noted below. The difference type is noted on the first line of the National Difference in the standard. The standard may not include all types of these National Differences.

DR – These are National Differences based on the ***national regulatory requirements***.

D1 – These are National Differences which are based on ***basic safety principles and requirements***, elimination of which would compromise safety for consumers and users of products.

D2 – These are National Differences from IEC requirements based on existing ***safety practices***. These requirements reflect national safety practices, where empirical substantiation (for the IEC or national requirement) is not available or the text has not been included in the IEC standard.

DC – These are National Differences based on the ***component standards*** and will not be deleted until a particular component standard is harmonized with the IEC component standard.

DE – These are National Differences based on ***editorial comments or corrections***.

Each national difference contains a description of what the national difference entails. Typically one of the following words is used to explain how the text of the national difference is to be applied to the base IEC text:

Addition / Add - An addition entails adding a complete new numbered clause, subclause, table, figure, or annex. Addition is not meant to include adding select words to the base IEC text.

Modification / Modify - A modification is an altering of the existing base IEC text such as the addition, replacement or deletion of certain words or the replacement of an entire clause, subclause, table, figure, or annex of the base IEC text.

Deletion / Delete - A deletion entails complete deletion of an entire numbered clause, subclause, table, figure, or annex without any replacement text.

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FOREWORD

INTERNATIONAL ELECTROTECHNICAL COMMISSION

AUTOMATIC ELECTRICAL CONTROLS – Part 2-13: Particular requirements for humidity sensing controls

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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6) All users should ensure that they have the latest edition of this publication.

7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.

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.

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International Standard IEC 60730-2-13 has been prepared by IEC technical committee 72: Automatic electrical controls.

The text of this International Standard is based on the following documents:

FDIS	Report on voting
72/1078/FDIS	72/1108/RVD

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 third edition cancels and replaces the second edition, published in 2006. This edition constitutes a technical revision. This edition includes alignment with the text of 60730-1 fifth edition and the following significant technical changes with respect to the previous edition:

a) alignment of the EMC requirements in Clause H.26 to those in other part 2 standards;

b) addition of requirements in Clause H.27 to cover class B and C control functions of humidity sensing controls.

This Part 2-13 is intended to be used in conjunction with IEC 60730-1. It was established on the basis of the 5th edition of that standard (2013). Consideration may be given to future editions of, or amendments to, IEC 60730-1.

This part 2-13 supplements or modifies the corresponding clauses in IEC 60730-1, so as to convert that publication into the IEC standard: Particular requirements for humidity sensing controls.

Where this part 2-13 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 2-13 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.

In this publication:

1) The following print types are used:

– requirements proper: in roman type;

– *test specifications: in italic type*;

– explanatory matter: in smaller roman type.

2) Subclauses, notes or items which are additional to those in Part 1 are numbered starting from 101, additional annexes are lettered AA, BB, etc.

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

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.

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101DV DE ***Modification of the 6th paragraph after item (9) by replacing it with the following paragraph:***

This Part 2-13 is intended to be used in conjunction with UL 60730-1, edition 5.

102DV DE ***Modification of Item (1) of the paragraph starting with, "In this publication"***

– words in SMALL ROMAN CAPITALS in the text are defined in clause 2.

103DV DE ***Addition to the part 2:***

The numbering system in the standard uses a space instead of a comma to indicate thousands and uses a comma instead of a period to indicate a decimal point. For example, 1 000 means 1,000 and 1,01 means 1.01.

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AUTOMATIC ELECTRICAL CONTROLS – Part 2-13: Particular requirements for humidity sensing controls

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 automatic electrical humidity sensing controls for use in, on or in association with equipment, including controls for heating, air-conditioning and similar applications. The equipment may use electricity, gas, oil, solid fuel, solar thermal energy, etc. or a combination thereof.

NOTE Throughout this standard, the word "equipment" includes "appliance" and "control system".

This International Standard is applicable to automatic electrical humidity sensing controls forming part of a building automation control system within the scope of ISO 16484.

This standard also applies to automatic electrical humidity sensing controls for equipment that may be used by the public, such as equipment intended to be used in shops, offices, hospitals, farms and commercial and industrial applications.

This standard does not apply to automatic electrical humidity sensing controls intended exclusively for industrial process applications unless explicitly mentioned in the equipment standard.

1.1.2 *Replacement:*

This standard applies to automatic electrical controls, mechanically or electrically operated, responsive to or controlling humidity.

1.1.3 Not applicable.

2 Terms and Definitions

This clause of Part 1 is applicable except as follows:

2.2 Definitions of types of control according to purpose

2.2.19 *Addition:*

Note 1 to entry: In general, a HUMIDITY SENSING CONTROL is an OPERATING CONTROL.

Additional definitions:

2.2.101
HUMIDITY SENSING CONTROL
automatic ELECTRICAL CONTROL which is either intended to keep the controlled humidity above, below or between a particular value(s)

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2.2.102
ROOM HUMIDISTAT
independently mounted or incorporated HUMIDITY SENSING CONTROL intended to control the humidity of habitable space

3 General requirements

This clause of Part 1 is applicable.

4 General notes on tests

This clause of Part 1 is applicable.

5 Rating

This clause of Part 1 is applicable.

6 Classification

This clause of Part 1 is applicable except as follows:

6.3.9 *Additional subclauses:*

6.3.9.101 – HUMIDITY SENSING CONTROL;

6.3.9.102 – ROOM HUMIDISTAT;

7 Information

This clause of Part 1 is applicable.

8 Protection against electric shock

This clause of Part 1 is applicable.

9 Provision for protective earthing

This clause of Part 1 is applicable.

10 Terminals and terminations

This clause of Part 1 is applicable.

11 Constructional requirements

This clause of Part 1 is applicable.

12 Moisture and dust resistance

This clause of Part 1 is applicable.

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13 Electric strength and insulation resistance

This clause of Part 1 is applicable except as follows:

Table 12 (13.2 of edition 3) Insulation or disconnection test voltages

Addition to footnote p):

In the case of HUMIDITY SENSING CONTROLS, it may be necessary to provide specially calibrated samples to enable this test to be performed.

14 Heating

This clause of Part 1 is applicable.

15 Manufacturing deviation and drift

This clause of Part 1 is applicable except as follows:

15.4 *Addition:*

Alternatively, the declared MANUFACTURING DEVIATION and DRIFT may be expressed separately as a tolerance value to the declared OPERATING VALUE.

15.5.3 *Additional subclauses:*

15.5.3.101 *CONTROLS intended for SETTING BY THE USER shall be set at the maximum humidity value permitted by the adjustment unless otherwise declared by the manufacturer.*

15.5.3.102 *The OPERATION of the CONTROL shall be sensed by a suitable device with a sensing current not exceeding 0,05 A.*

The circuit voltage may be any convenient value that will give reliable indication of the function being monitored.

15.5.4 Not applicable.

16 Environmental stress

This clause of Part 1 is applicable.

17 Endurance

This clause of Part 1 is applicable except as follows:

17.1.3 Test sequence and conditions

Additional subclause:

17.1.3.101 *For HUMIDITY SENSING CONTROLS, the tests of Clause 17 are conducted with the ACTIVATING QUANTITY agreed between the manufacturer and testing authority.*

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17.8 Test of automatic action at accelerated rate

Additional subclause:

17.8.4.101 The number of automatic and manual cycles for independently mounted and IN-LINE CORD CONTROLS shall be as indicated in Clause AA.1, unless a higher number is declared by the manufacturer.

17.8.4.101DV D2 *Modification of 17.8.4.101 of the Part 2 by adding the following sentence to the note:*

In the USA, the values in clause AA.2 apply for the testing of INDEPENDENTLY MOUNTED, FREE STANDING and cord-connected humidity SENSING CONTROLS in Clause 17. Unless otherwise specified in the appropriate equipment standard, the values in clause AA.2 also apply for INTEGRATED and INCORPORATED CONTROLS.

17.16 Tests for particular purpose controls

Additional subclause and note:

17.16.101 Humidity sensing controls

– Subclauses 17.1 to 17.5 inclusive are applicable.

– 17.6 is applicable to actions classified as type 1.M or 2.M, the value of "X" being agreed between manufacturer and testing authority.

– 17.7 is applicable.

– 17.8 is applicable.

– 17.9 is applicable, except:

– 17.9.3.1 is not applicable.

– 17.10 to 17.14 inclusive are applicable.

18 Mechanical strength

This clause of Part 1 is applicable.

19 Threaded parts and connections

This clause of Part 1 is applicable.

20 Creepage distances, clearances and distances through solid insulation

This clause of Part 1 is applicable.

21 Resistance to heat, fire and tracking

This clause of Part 1 is applicable.

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22 Resistance to corrosion

This clause of Part 1 is applicable.

23 Electromagnetic compatibility (EMC) requirements – Emission

This clause of Part 1 is applicable.

24 Components

This clause of Part 1 is applicable.

25 Normal operation

This clause of Part 1 is applicable.

26 Electromagnetic compatibility (EMC) requirements – Immunity

This clause of Part 1 is applicable. See also Annex H.

27 Abnormal operation

This clause of Part 1 is applicable. See also Annex H.

28 Guidance on the use of electronic disconnection

This clause of Part 1 is applicable.

Figures

The figures of Part 1 are applicable.

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Annexes

The annexes of Part 1 are applicable except as follows:

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Annex H
(normative)

Requirements for electronic controls

This annex of Part 1 is applicable except as follows:

H.2 Terms and definitions

H.2.23 Definitions relating to functional safety

Additional definitions:

H.2.101
PERMANENT OPERATION
continuous monitoring of the protective function during the OPERATION of the appliance or system for longer than 24 h

Note 1 to entry: 24 h is considered the typical time interval between a first and a second FAULT.

H.2.102
NON-PERMANENT OPERATION
continuous monitoring of the protective function during the OPERATION of the appliance or system for less than 24 h

Note 1 to entry: 24 h is considered the typical time interval between a first and a second FAULT.

H.6 Classification

H.6.18 According to classes of control functions

H.6.18.1

Additional note:

NOTE 101 In general, HUMIDITY SENSING CONTROLS perform CLASS A CONTROL FUNCTIONS.

H.7 Information

Additional requirements to Table 1:

	Information	Clause or subclause	Method
58a	See footnote a of Table H.101		
101	The output condition of Type 2 HUMIDITY SENSING CONTROLS after operation [101)]	H.26.2.103 H.26.2.104 H.26.2.105	X
102	Frequency of the DEFINED STATE test function	H.27.1.2.2.2, H.27.1.2.3.2, H.27.1.2.3.3	X
103	The CONTROL is for permanent or NON-PERMANENT OPERATION	H.2.101.1, H.2.101.2, H.27.1.2.2.2, H.27.1.2.3.2	X
Additional footnote: [101)] For example, conducting or non-conducting, as applicable.			

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H.11 Constructional requirements

H.11.12 Controls using software

H.11.12.2.6 *Modification:*

Replace the second paragraph by the following note:

NOTE The values declared in Table 1, requirement 71, may be given in the applicable appliance standard.

H.11.12.2.7 *Additional note:*

NOTE 101 The values declared in Table 1, requirement 72, may be given in the applicable appliance standard.

H.23 Electromagnetic compatibility (EMC) requirements – Emission

H.23.1.2 Radio frequency emission

Addition:

Integrated and incorporated electronic HUMIDITY SENSING CONTROLS are not subjected to the tests of H.23.1.2, as the results of these tests are influenced by the incorporation of the HUMIDITY SENSING CONTROL into the equipment and the use of measures to control emissions used therein. They may, however, be carried out under declared conditions if so requested by the manufacturer.

H.26 Electromagnetic compatibility (EMC) requirements – immunity

H.26.2 *Addition:*

After each test, one or more of the following criteria (see Subclauses H.26.2.101 to H.26.2.106) shall apply, as permitted in Table H.101.

Additional subclauses:

H.26.2.101 The CONTROL shall remain in its current condition and thereafter shall continue to operate as declared within the limits verified in Clause 15, if applicable.

H.26.2.102 The CONTROL shall assume the condition declared in Table 1, requirement 101 and thereafter shall operate as in H.26.2.101.

H.26.2.103 The CONTROL shall assume the condition declared in Table 1, requirement 101, such that it cannot be RESET automatically or manually. The output waveform shall be sinusoidal or as declared in requirement 53 of Table 1 for normal OPERATION.

H.26.2.104 The CONTROL shall remain in the condition declared in Table 1, requirement 101. A non-self-resetting CONTROL shall be such that it can only RESET manually. After the humidity which caused cut-out to occur is removed, it shall operate as in H.26.2.101 or shall remain in the declared condition as in H.26.2.103.

H.26.2.105 The CONTROL may return to its initial state and thereafter shall operate as in H.26.2.101.

NOTE If a CONTROL is in the condition declared in Table 1, requirement 101, it may RESET but shall resume the declared condition again if the humidity which caused it to operate is still present.

H.26.2.106 The output and functions shall be as declared in Table 1, requirement 58a or 58b and the CONTROL shall comply with the requirement of 17.5.

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Table H.101
Compliance criteria

Applicable Clause H.26 tests	Compliance criteria permitted					
Type 2 HUMIDITY SENSING CONTROLS	H.26.2.101	H.26.2.102	H.26.2.103	H.26.2.104	H.26.2.105	H.26.2.106[a)]
H.26.4 to H.26.14 inclusive	B	B	B	A	A	A
Other HUMIDITY SENSING CONTROLS	H.26.2.101	H.26.2.102	H.26.2.103	H.26.2.104	H.26.2.105	H.26.2.106[1)]
H.26.8, H.26.9	X				X	X
X = Permitted A = Permitted when the disturbance is applied after OPERATION B = Permitted when the disturbance is applied before OPERATION [a)] This compliance criterion is permitted only for integrated or INCORPORATED CONTROLS, since the acceptability of the output must be judged in the appliance.						

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

H.26.5.2 Voltage variation test

H.26.5.2.2 Test procedure

Replacement of the last paragraph:

The HUMIDITY SENSING CONTROL is subjected to each of the specified voltage test cycles three times with 10 s intervals between each test cycle. For a HUMIDITY SENSING CONTROL declared under requirement 101 of Table 1, each test cycle is performed three times when the CONTROL is in the declared condition and three times when it is not.

H.26.8 Surge immunity test

H.26.8.3 Test procedure

Additional subclause:

H.26.8.3.101 For CONTROLS declared under requirement 101 of Table 1, the tests are performed when the CONTROL is in the declared condition and when it is not.

H.26.9 Electrical fast transient/burst immunity test

H.26.9.3 Test procedure

Additional subclause:

H.26.9.3.101 The CONTROL is subjected to five tests. For CONTROLS declared under requirement 101 of Table 1, the tests are performed when the CONTROL is in the declared position and when it is not.

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H.26.10 Ring wave immunity test

H.26.10DV D2 ***Deletion of the explanatory paragraph from the part 1 starting with, "In the USA..."***

H.26.10.5 Test procedure

Additional subclause:

H.26.10.5.101 For CONTROLS declared under requirement 101 of Table 1, the tests are performed when the CONTROL is in the declared condition and when it is not.

H.26.12 Radio-frequency electromagnetic field immunity

H.26.12.2 Immunity to conducted disturbances

H.26.12.2.2 Test procedure

Additional subclause:

H.26.12.2.2.101 For CONTROLS declared under Table 1, sweeping is performed when the CONTROL is in the declared position and when it is not.

H.26.12.3 Immunity to radiated disturbances

H.26.12.3.3.2 Test procedure

Additional subclause:

H.26.12.3.2.101 For CONTROLS declared under requirement 101 of Table 1, sweeping is performed when the CONTROL is in the declared condition and when it is not.

H.26.13 Test of influence of supply frequency variations

H.26.13.3 Test procedure

Additional subclause:

H.26.13.3.101 For CONTROLS declared under requirement 101 of Table 1, the test shall be performed when the CONTROL is in the declared condition and when it is not.

H.26.14 Power frequency magnetic field immunity test

H.26.14.3 Test procedure

Additional subclause:

H.26.14.3.101 For CONTROLS declared under requirement 101 of Table 1, the test shall be performed when the CONTROL is in the declared condition and when it is not.

H.26.15 Evaluation of compliance

H.26.15.2 *Addition:*

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See Table H.101 for compliance criteria.

H.26.15.4 *Addition:*

See Table H.101 for compliance criteria.

H.27 Abnormal operation

H.27.1.1.2 *Modification:*

Replace the first line by the following:

The CONTROL shall be operated under the following conditions. In addition, CONTROLS declared under requirement 101 of Table 1 shall be tested when the CONTROL is in the declared condition and when it is not.

H.27.1.1.3 *Modification:*

This clause of Part 1 is applicable except item c).

H.27.1.2.2 Class B control function

This subclause of Part 1 is applicable except as follows:

H.27.1.2.2.2 First fault

Modification:

Replace item b) as follows:

b) the CONTROL shall react within the FAULT REACTION TIME (see Table 1, requirement 91) by proceeding to the DEFINED STATE provided that a subsequent restart under the same FAULT conditions results in the SYSTEM returning to the same DEFINED STATE condition;

Replace item c) as follows:

c) for SYSTEMS with NON-PERMANENT OPERATION only, the CONTROL shall continue to operate as intended, the FAULT shall be detected during the next start-up sequence. The compliance criteria shall be a) or b).

NOTE Requirements for SYSTEMS with PERMANENT OPERATION are under consideration.

Replace item d) as follows:

d) the CONTROL shall continue to operate as intended.

Replace the last two paragraphs with the following:

The FAULT REACTION TIME shall be declared by the manufacturer (see Table 1, requirement 91).

For PERMANENT OPERATION as declared by the manufacturer (see Table 1, requirement 103), item c) is under consideration.

For a CONTROL function. where a mechanical actuator is part of a circuit that characterizes the DEFINED STATE, a test up to, but not including, the switching contacts is sufficient. If the test of the DEFINED STATE fails, the CONTROL shall initiate the SAFETY SHUT-DOWN. Frequency of test is as declared by the

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manufacturer (see Table 1, requirement 102). Internal FAULTS of the components of the checking circuits are not considered.

H.27.1.2.2.3 Fault introduced during defined state

Not applicable.

H.27.1.2.3 Class C control function

This subclause of Part 1 is applicable except as follows:

H.27.1.2.3.2 First fault

Modification:

Replace item b) as follows:

b) the CONTROL reacting within the FAULT REACTION TIME (see Table 1, requirement 91) by proceeding to DEFINED STATE provided that subsequent restart under the same FAULT condition results in the SYSTEM returning to the DEFINED STATE condition;

Replace item c) as follows:

c) for SYSTEMS with NON-PERMANENT OPERATION, the CONTROL shall continue to operate as intended, the FAULT shall be detected during the next start-up sequence. The compliance criteria shall be a) or b).

NOTE Requirements for SYSTEMS with PERMANENT OPERATION are under consideration.

Replace item d) as follows:

d) the CONTROL shall continue to operate normally as declared.

Replace the last sentence with the following:

The FAULT REACTION TIME shall be declared by the manufacturer (see Table 1, requirement 91).

For PERMANENT OPERATION as declared by the manufacturer (see Table 1, requirement 103), item c) is under consideration.

For a CONTROL function, where a mechanical actuator is part of a circuit that characterizes the DEFINED STATE, a test up to, but not including, the switching contacts is sufficient. If the test of the DEFINED STATE fails, the CONTROL shall initiate the SAFETY SHUT-DOWN. Frequency of test is as declared by the manufacturer (see Table 1, requirement 102). Internal FAULTS of the components of the checking circuits are not considered.

H.27.1.2.3.3 Second fault

Modification:

Replace the second sentence and items a) and b) with the following:

During assessment, for SYSTEMS with NON-PERMANENT OPERATION, the second FAULT shall only be considered to occur when a start-up sequence has been performed after the first FAULT. For SYSTEMS with PERMANENT OPERATION, the second FAULT occurs 24 h after the first FAULT.

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