



INTERNATIONAL ELECTROTECHNICAL COMMISSION
TECHNICAL COMMITTEE No.61: SAFETY OF
HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES

Report from the CTL Liaison

CTL meeting was held via Online meeting from March 09-11, 2021 and the following items are needed to report to TC61.

1. One enquiry is given for interpretation of standards byTC61 as follows;
Enquiry 2181: Evaluation of motor-compressors using a motor-compressor control system.
(See attached enquiry in page 2)
2. Items to be confirmed by TC61
 - a. Actual value when applying “Table F.2 for the minimum clearance of d or D” referred in IEC 60664-1(ed.3) regarding DSH 2160 that was issued based on the IEC60664-1(ED3)
(See also green coloured part of attachment in page 4)
For appliances covered by TC 61, we understand the minimum clearance of d or D is 0.5 mm according to the Table 16 of IEC 60335-1.Please confirm.
 - b. Meaning of “water boils” used in the decision of DSH 579
This is the request from an authority involved in market survey if it means 100 °C in the DSH 579(See also attachment of page 6)
We understand it means water reaches 100 °C at 1 atm and we will change it for clarification according to our understanding.
3. How to handle products energized by USB port:
This is pending item from the last meeting and awaiting the output from WG48/TC61
4. New edition of IECEE Guide 115(Application of measurement uncertainty to conformity assessment activities in the electrotechnical sector in the IECEE CB Scheme) has been issued.
<https://www.iecee.org/documents/refdocs/>
The Guide 115 was revised based on the new edition of ISO/IEC 17025:2017.

IEC/TC 61 Comment:

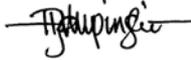
Item	Enquiry or report	TC61 Comment
1	Enquiry 2181	
2	a. DSH 2160 related question	
	b. DSH 579 related question	
3	How to handle products energized by USB port: Pending item awaiting the output from WG48/TC61	

Masahiro Sato/ **JET**
CTL Liaison of TC61

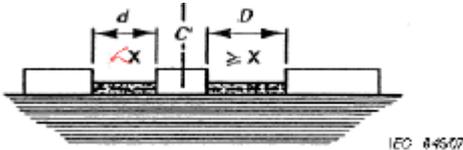
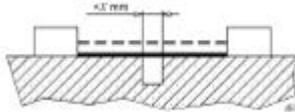
Continued to the attachment

CTL ENQUIRY FORM

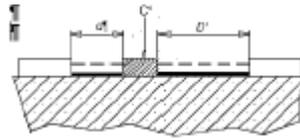
Standard(s) (incl. year)	Subclause(s)	Tracking No.	Year
IEC 60335-2-34:2012 + AMD1:2015 + AMD2:2016 IEC 60335-2-34:2021	-	2181	2021
Category			
HOUS			
Subject	Keywords	Provided to	
Evaluation of motor-compressors using a motor-compressor control system	- Motor-compressor - Motor-compressor control system	ETF1	
Question			
<p>The standard covers motor-compressors including speed regulated (multi-speed or variable speed) motor-compressors using an electronic motor-compressor control system.</p> <p>In its introduction the standard specifies that the “requirements apply to motor-compressors with their associated starting, cooling capacity control and protection systems systems, tested separately under the most severe conditions of the refrigerating system operation which, within reasonable limits, could occur in the applications for which they are used”.</p> <p>Clause 6.103 contains an indication that protective electronic circuits can be provided in the end-product but there are no specifications or otherwise anything to indicate that for motor-compressors needing a motor-compressor control system in order to operate, the motor-compressor control system can be evaluated without the control.</p> <p>Does IEC 60335-2-34 allow for testing and certification of motor-compressors specifically intended for use with an electronic motor-compressor control system, without including the motor-compressor control system as part of the evaluation and testing?</p>			
Rationale			
<p>Many motor-compressors today are constructed as variable speed compressors using an electronic controller often referred to as an inverter. The electronic motor controller (motor-compressor control system) is typically attached directly on the outside of the compressor housing or is in a separate enclosure and connected to the compressor through an interconnection cord.</p> <p>While the intent of the standard in our opinion is clear and the electronic control system must be included as part of the testing and evaluation of the motor-compressor, there seem to be differing opinions between CBTL’s in this regard and therefore to ensure consistency in application, a decision is necessary.</p> <p>This especially becomes relevant as technology goes more and more towards using compressors with brushless DC (BLDC) motors/permanent magnet rotor motors. This type of motor requires the use of a specific motor control system that is designed to closely match the parameters of the motor. Compressors with this type of motor cannot operate unless they are connected to the specifically intended motor control system. Connection of the compressor to anything other than the specifically intended control system, including direct connection to the supply mains, may result in a hazard.</p> <p>Evaluating the compressor while connected to the specific control system, provides the means to determine compliance with the relevant requirements. The test results obtained and the parameters for certain tests within the standard depend on the motor control system. For example, the working voltage necessary for determining the clearances and creepage distances within the compressor and for the electric strength tests.</p>			

<p>As such an evaluation of the compressor without the corresponding motor-control system does not allow for the evaluation of all applicable requirements throughout the standard. In fact, only a minimal subset of applicable requirements can be evaluated, primarily limited to mechanical aspects such as evaluation of marking requirements, static pressure test and insulation material/oil/refrigerant compatibility tests.</p> <p>Such subset of requirements does not provide for a meaningful certification of the compressor, and does not meet the intent of the standard requirements.</p>		
<p>Proposal (if any)</p>		
<p>The evaluation, testing, and certification of motor-compressors intended for use with an electronic motor-compressor control system shall include the intended motor-compressor control system.</p>		
<p>Originator</p>		
<p><input checked="" type="checkbox"/> NCB/CBTL <input type="checkbox"/> IECEE-CMC <input type="checkbox"/> IECEE Secretariat <input type="checkbox"/> IEC/TC</p>		
Date	Name	Signature
2021-04-15	Rick Slupinski	

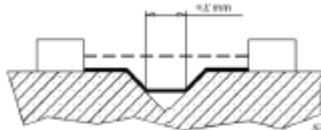
CTL DECISION SHEET (DSH)

Standard(s) (incl. year)	Subclause(s)	Tracking No.	Year
IEC 60664-1:2007	6.2	DSH 2160	2020
Category			
General			
Subject	Keywords	Developed by	Approved at
Creepage distance less than X	<ul style="list-style-type: none"> - Creepage distance - Zero - Sum 	WG2	2020 CTL Plenary Meeting
Question			
<p>A PCB sample is tested according to sub-clause 6.2 of IEC 60664-1:2007. How to measure creepage distances when the path is split by floating conductive parts when $d < X$ and $D \geq X$?</p> <div style="text-align: center;">  <p style="font-size: small; margin-top: 5px;">IEC 60664-1:2007</p> </div> <p>NOTE: $d < X$, $D \geq X$, C is conductive floating part Figure test PCB sample</p> <p>Different interpretations of total creepage distance are as follows:</p> <p>Opinion 1: The creepage distance is measured as shown in IEC 60664-1:2007 example 11. Creepage distance is the distance = $d + D$.</p> <p>Opinion 2: Since the d is less than X, the d is considered as zero. Creepage distance is the distance = D.</p> <p>Which opinion is correct?</p> <p>Decision</p> <p>Opinion 1 is correct. Creepage distance is the distance = $d + D$.</p> <p>Explanatory notes</p> <p>TC109 support the option 1 with the following agreement to the next edition of IEC 60664-1:</p> <p>A first bullet is added in 6.8 as follow:</p> <ul style="list-style-type: none"> - Where the distance across a groove is less than the specified width X (see Table 1), the creepage distance is measured directly across the groove and do not take into account the contour of the groove (see Example 1). <div style="text-align: center;">  </div>			

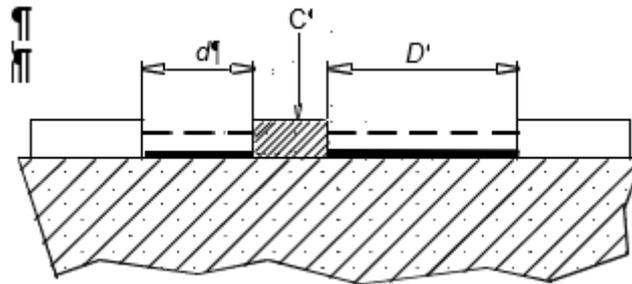
- The example 11 is modified without referring to X as:



- On the same topic, the example 3 is improved as:
 In the text it is explained the V shape has a width larger than X and when this shape has its value equal to X we make the measurement.
 Clearance is the "line of sight" distance. Creepage path follows the contour of the groove but covers the bottom of the groove by an X mm insulating link.



Following part is extracted from the 3rd edition of IEC 60664-1:



C: conductive floating part

Clearance is the distance = $d + D$

Creepage distance is also = $d + D$

----- Clearance



Creepage distance

NOTE See Table F.2 for the minimum clearance of d or D .

Figure 14 – Creepage distance and clearance with conductive floating part

CTL DECISION SHEET

Standard(s): IEC 60335-2-75, 2002, 2nd Ed.	Sub clause(s): 19.13	Sheet n°: DSH 579
Subject: Applicable standard	Key words: - Water dispenser	Decision approved during the CTL Plenary Meeting 2006
<p>Question: For household water dispensers we got 3 groups of certificate and test reports from different NCBs :</p> <p>Group I : IEC 60335-2-75 Group II : IEC 60335-2-24 and IEC 60335-2-15 together Group III : IEC 60335-2-24 and IEC 60335-2-21 together</p> <p>Decision:</p> <ol style="list-style-type: none"> 1. For commercial appliances; IEC 60335-2-75 apply. 2. For household and similar use(i.e. in an office , Doctor’s room, etc); <ul style="list-style-type: none"> - IEC 60335-2-24 and IEC 60335-2-15 apply if the hot water boils, - IEC 60335-2-24 and IEC 60335-2-21 apply if the hot water does not boil, - IEC 60335-2-24 and IEC 60335-2-35 apply if the water heater is instantaneous and the water does not boil. <p>Explanatory notes: This is also confirmed in TC61 Cape Town meeting 2005.</p>		