DRAFT TANZANIA STANDARD

(Draft for comments only)

Switches for household and similar fixed electrical installations,
Part 1: General requirements

TANZANIA BUREAU OF STANDARDS
1 National Foreword

This draft Tanzania Standard has been prepared by the Electrical Installation Technical Committee, under the supervision of the Electrotechnical Divisional Standards Committee (EDC)

This draft Tanzania Standard is identical to International Standard IEC 60669-1:2017 Switches for household and similar fixed electrical installations-Part 1: Switches for household and similar fixed electrical installations- Part 1: General requirements.

This draft Tanzania Standard replaces TZS 771-1:2003 which has become technically revised due to international developments.

2 Terminology and conventions

Some terminologies and certain conventions are not identical with those used in Tanzania standards; attention is drawn especially to the following: -

1) The comma has been used as a decimal marker for metric dimensions. In Tanzania Standards, it is current practice to use “full point” on the baseline as the decimal marker.

2) Where the words “International Standard(s)” appear, referring to this standard they should read “Tanzania Standard(s)”.

3) The rated supply frequencies for Tanzania should be 50 Hz.
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INTERNATIONAL ELECTROTECHNICAL COMMISSION

SWITCHES FOR HOUSEHOLD AND SIMILAR
FIXED ELECTRICAL INSTALLATIONS –

Part 1: General requirements

FOREWORD

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.

2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.

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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.

International Standard IEC 60669-1 has been prepared by subcommittee 23B: Plugs, socket-outlets and switches, of IEC technical committee 23:


This edition includes the following significant technical changes with respect to the previous edition:

a) change of the scope for motor load switches;

b) deletion of some dated normative references;

c) changes to the definitions;

d) in Clause 5 the number of specimens to be used for the tests are clearly given in Table 1 (Corresponding Annex A of IEC 60669-1:1998 was therefore deleted);
e) in Clause 5 it was clarified on which switches the tests of Clause 19 shall be carried out;
f) requirements concerning 13 A switches have been included;
g) mandatory indication that a terminal is suitable for rigid conductor only;
h) requirements and test conditions for flexible conductors have been included in Clause 12;
i) requirements for pilot light units have been included;
j) new test for self-ballasted lamp loads in 19.3;
k) Table 20 has been completely redrawn to cover normal, mini and micro-gap switches and renumbered Table 21;
l) new informative Annex B including changes planned for the future in order to align IEC 60669-1 with the requirements of IEC 60998 (all parts), IEC 60999 (all parts) and IEC 60228;
m) new informative Annex C about the circuit development for 19.3;
n) new informative Annex D including additional requirements for insulation-piercing terminals;
o) new informative Annex E including additional requirements and tests for switches intended to be used at a temperature lower than −5 °C.

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

<table>
<thead>
<tr>
<th>FDIS</th>
<th>Report on voting</th>
</tr>
</thead>
<tbody>
<tr>
<td>23B/1235/FDIS</td>
<td>23B/1241/RVD</td>
</tr>
</tbody>
</table>

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

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

In this standard, the following print types are used:

- *compliance statements* in italic type

A list of all parts in the IEC 60669 series, published under the general title *Switches for household and similar fixed electrical installations*, can be found on the IEC website.

The committee has decided that the contents of this 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.
1 Scope

This part of IEC 60669 applies to manually operated general purpose functional switches, for alternating current (AC) only with a rated voltage not exceeding 440 V with a rated current not exceeding 63 A, intended for household and similar fixed electrical installations, either indoors or outdoors.

For switches provided with screwless terminals, the rated current is limited to 16 A.

NOTE 1 The rated current is limited to 16 A for switches provided with insulation piercing terminals (IPT's) according to Annex D.

Switches covered by this document are, where applicable, intended for the control in normal use of all of the following loads:

– a circuit for a tungsten filament lamp load;
– a circuit for an externally ballasted lamp load (for example LED, CFL, fluorescent lamp load);
– a circuit for a self ballasted lamp load (for example LEDi or CFLi);
– a circuit for a substantially resistive load with a power factor not less than 0,95;
– a single phase circuit for motor load with a rated current not exceeding 3 A at 250 V (750 VA) and 4,5 A at 120 V (540 VA) and a power factor not less than 0,6. This applies to both switches rated not less than 10 A that have not undergone additional tests and to momentary switches rated not less than 6 A that have not undergone additional tests.

NOTE 2 In the following country the suitability of a switch intended to control the inrush current of a motor shall be tested: AU.

This document also applies to boxes for switches, with the exception of mounting boxes for flush-type switches.

NOTE 3 General requirements for boxes for flush-type switches are given in IEC 60670-1.

It also applies to switches such as

– switches incorporating pilot lights;
– electromagnetic remote control switches (particular requirements are given in IEC 60669-2-2);
– switches incorporating a time-delay device (particular requirements are given in IEC 60669-2-3);
– combinations of switches and other functions (with the exception of switches combined with fuses);

– electronic switches (particular requirements are given in IEC 60669-2-1);
– switches having facilities for the outlet and retention of flexible cables (see Annex A);
– isolating switches (particular requirements are given in IEC 60669-2-4);
– switches and related accessories for use in home and building electronic systems (particular requirements are given in IEC 60669-2-5);
– firemen’s switches (particular requirements are given in IEC 60669-2-6).
Switches complying with this document are suitable for use at ambient temperatures not normally exceeding +40 °C, but their average over a period of 24 h does not exceed +35 °C, with a lower limit of the ambient air temperature of −5 °C.

NOTE 4 For lower temperatures see Annex E.

Switches complying with this document are suitable only for incorporation in equipment in such a way and in such a place that it is unlikely that the surrounding ambient temperature exceeds +35 °C.

In locations where special conditions prevail, such as in ships, vehicles and the like and in hazardous locations, for example where explosions are liable to occur, special construction and/or additional requirements may be required.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60038:2009, IEC standard voltages


IEC 60112:2009, Method for the determination of the proof and the comparative tracking indices of solid insulating materials

IEC 60212:2010, Standard conditions for use prior to and during the testing of solid electrical insulation materials

IEC 60227-5:2011, Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V – Part 5: Flexible cables (cords)

IEC 60228:2004, Conductors of insulated cables

IEC 60245-4:2011, Rubber insulated cables – Rated voltages up to and including 450/750 V – Part 4: Cords and flexible cables

IEC 60417, Graphical symbols for use on equipment (available from: http://www.graphical-symbols.info/equipment)

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

IEC 60529:1989/AMD1:1999


IEC 60669-2-1:2002, Switches for household and similar fixed electrical installations – Part 2-1: Particular requirements – Electronic switches


IEC 60998-1:2002, Connecting devices for low-voltage circuits for household and similar purposes – Part 1: General requirements

IEC 60998-2-1, Connecting devices for low-voltage circuits for household and similar purposes – Part 2-1: Particular requirements for connecting devices as separate entities with screw-type clamping units

IEC 60998-2-2, Connecting devices for low-voltage circuits for household and similar purposes – Part 2-2: Particular requirements for connecting devices as separate entities with screwless-type clamping units

IEC 60998-2-3, Connecting devices for low-voltage circuits for household and similar purposes – Part 2-3: Particular requirements for connecting devices as separate entities with insulation-piercing clamping units

IEC 60998-2-4, Connecting devices for low-voltage circuits for household and similar purposes – Part 2-4: Particular requirements for twist-on connecting devices

IEC 61032:1997, Protection of persons and equipment by enclosures – Probes for verification

ISO 1456:2009, Metallic and other inorganic coatings – Electrodeposited coatings of nickel, nickel plus chromium, copper plus nickel and of copper plus nickel plus chromium

ISO 2081:2008, Metallic and other inorganic coatings – Electroplated coatings of zinc with supplementary treatments on iron or steel


3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at http://www.iso.org/obp

NOTE Where the terms “voltage” and “current” are used, they are rms values unless otherwise specified.

3.1 switch
device designed to make or break the current in one or more electric circuits

3.1.1 on/off switch
switch for alternatively closing and opening one or more electric circuits.


3.1.2 momentary contact switch
switch which returns its contacts automatically to the initial state after operation.

Note 1 to entry: Momentary contact switches are intended to operate, for example, bells, electromagnetic remote control switches, time-delay switches and electronic switches.