

# INTERNATIONAL STANDARD

# NORME INTERNATIONALE

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**Thermal-links – Requirements and application guide**

**Protecteurs thermiques – Exigences et guide d'application**





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IEC Central Office  
3, rue de Varembe  
CH-1211 Geneva 20  
Switzerland

Tel.: +41 22 919 02 11  
Fax: +41 22 919 03 00  
[info@iec.ch](mailto:info@iec.ch)  
[www.iec.ch](http://www.iec.ch)

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ELECTROTECHNICAL  
COMMISSION

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## THERMAL-LINKS – REQUIREMENTS AND APPLICATION GUIDE

### FOREWORD

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International Standard IEC 60691 has been prepared by subcommittee 32C: Miniature fuses, of IEC technical committee 32: Fuses.

This fourth edition cancels and replaces the third edition published in 2002, Amendment 1: 2006 and Amendment 2: 2010. This fourth edition constitutes a technical revision.

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

- a) requirements for thermal-link packaged assemblies;
- b) renew the requirements and definitions for  $T_h$ -test;
- c) change starting temperature for interrupt current test;
- d) clarify requirements for marking (packing label);
- e) minimum Proof Tracking Index 175 instead 120.

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

FDIS	Report on voting
32C/512/FDIS	32C/515/RVD

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.

The basis for this standard is the harmonization of the USA national standard, UL 1020, fifth edition (withdrawn 2003), and IEC 60691:1993, together with its Amendment 1:1995 and Amendment 2:2000.

The following differing practices of a less permanent nature exist in the country indicated below:

- Annex C is required to be declared in the USA;
- Annex E is required in the USA, if applicable;
- Annex F is required to be declared in the USA.

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- *compliance statements: in italic type.*

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- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

## INTRODUCTION

Thermal-links, defined as non-resettable devices functioning once only without refunctioning, are widely applied for the thermal protection of equipment in which, under fault (abnormal) conditions, one or more parts may reach hazardous temperatures.

As these devices have several aspects in common with miniature fuse-links and are used for obtaining a comparable degree of protection, this standard has endeavoured to lay down a number of basic requirements for such devices.

## **THERMAL-LINKS – REQUIREMENTS AND APPLICATION GUIDE**

### **1 Scope**

This International Standard is applicable to thermal-links intended for incorporation in electrical appliances, electronic equipment and component parts thereof, normally intended for use indoors, in order to protect them against excessive temperatures under abnormal conditions.

NOTE 1 The equipment is not designed to generate heat.

NOTE 2 The effectiveness of the protection against excessive temperatures logically depends upon the position and method of mounting of the thermal-link, as well as upon the current which it is carrying.

This standard may be applicable to thermal-links for use under conditions other than indoors, provided that the climatic and other circumstances in the immediate surroundings of such thermal-links are comparable with those in this standard.

This standard may be applicable to thermal-links in their simplest forms (e.g. melting strips or wires), provided that molten materials expelled during function cannot adversely interfere with the safe use of the equipment, especially in the case of hand-held or portable equipment, irrespective of its position.

Annex H of this standard is applicable to thermal-link packaged assemblies where the thermal-link(s) has already been approved to this standard but packaged in a metallic or non-metallic housing and provided with terminals/wiring leads.

This standard is applicable to thermal-links with a rated voltage not exceeding 690 V a.c. or d.c. and a rated current not exceeding 63 A.

The objectives of this standard are:

- a) to establish uniform requirements for thermal-links,
- b) to define methods of test,
- c) to provide useful information for the application of thermal-links in equipment.

This standard is not applicable to thermal-links used under extreme conditions such as corrosive or explosive atmospheres.

This standard is not applicable to thermal-links to be used in circuits on a.c. with a frequency lower than 45 Hz or higher than 62 Hz.

### **2 Normative references**

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60065:2014, *Audio, video and similar electronic apparatus – Safety requirements*