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Standards

Irish Standard  
I.S. EN 60584-3:2008

# Thermocouples -- Part 3: Extension and compensating cables - Tolerances and identification system (IEC 60584-3:2007 (EQV))

## I.S. EN 60584-3:2008

*Incorporating amendments/corrigenda issued since publication:*

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Údarás um Chaighdeáin Náisiúnta na hÉireann

English version

**Thermocouples -  
Part 3: Extension and compensating cables -  
Tolerances and identification system  
(IEC 60584-3:2007)**

Couples thermoélectriques -  
Partie 3: Câbles d'extension  
et de compensation -  
Tolérances et système d'identification  
(CEI 60584-3:2007)

Thermopaare -  
Teil 3: Thermoleitungen  
und Ausgleichsleitungen -  
Grenzabweichungen  
und Kennzeichnungssystem  
(IEC 60584-3:2007)

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Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

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**CENELEC**

European Committee for Electrotechnical Standardization  
Comité Européen de Normalisation Electrotechnique  
Europäisches Komitee für Elektrotechnische Normung

**Central Secretariat: rue de Stassart 35, B - 1050 Brussels**

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**Foreword**

The text of document 65B/642/FDIS, future edition 2 of IEC 60584-3, prepared by SC 65B, Devices and process analysis, of IEC TC 65, Industrial-process measurement, control and automation, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60584-3 on 2007-12-01.

This European Standard supersedes HD 446.3 S1:1993.

The main technical changes with regard to HD 446.3 S1:1993 are as follows:

- addition of Subclause 5.4 Connectors;
- addition of Clauses 7 Dimensions and 8 Requirements.

The following dates were fixed:

- latest date by which the EN has to be implemented  
at national level by publication of an identical  
national standard or by endorsement (dop) 2008-09-01
- latest date by which the national standards conflicting  
with the EN have to be withdrawn (dow) 2010-12-01

Annex ZA has been added by CENELEC.

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**Endorsement notice**

The text of the International Standard IEC 60584-3:2007 was approved by CENELEC as a European Standard without any modification.

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**Annex ZA**  
(normative)

**Normative references to international publications  
with their corresponding European publications**

The following referenced documents are indispensable for the application 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.

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60584-1	1995	Thermocouples - Part 1: Reference tables	EN 60584-1	1995

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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**THERMOCOUPLES –**

**Part 3: Extension and compensating cables –  
Tolerances and identification system**

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.
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International Standard IEC 60584-3 has been prepared by subcommittee 65B: Devices and process analysis, of IEC Technical Committee 65: Industrial-process measurement, control and automation.

This second edition cancels and replaces the first edition of IEC 60584-3 issued in 1989. It constitutes a technical revision.

The main technical changes with regard to the previous edition are as follows:

- Addition of Subclause 5.4 Connectors.
- Addition of Clauses 7 Dimensions and 8 Requirements.

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

FDIS	Report on voting
65B/642/FDIS	65B/646/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.

A list of all parts of the IEC 60584 series, under the general title *Thermocouples*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the maintenance result date indicated on the IEC web site 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.

## THERMOCOUPLES –

### Part 3: Extension and compensating cables – Tolerances and identification system

#### 1 Scope

This part of IEC 60584 specifies manufacturing tolerances for extension and compensating cables (other than mineral insulated cables) provided directly to users of industrial processes. These tolerances are determined with respect to the e.m.f.-temperature relationship of Part 1 of the standard.

The method for identification of insulated thermocouple extension and compensating cables other than mineral insulated cables is described.

Furthermore, requirements for extension and compensating cables for use in industrial process control are specified.

#### 2 Normative references

The following referenced documents are indispensable for the application 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 60584-1:1995, *Thermocouples – Part 1: Reference tables*

#### 3 Terms and definitions

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

##### 3.1

##### **extension and compensating cables**

are used for the electrical connection between the open ends of a thermocouple and the reference junction in those installations where the conductors of the thermocouple are not directly connected to the reference junction. The thermoelectric properties of extension and compensating cables shall be close to the properties of the corresponding thermocouple.

##### 3.1.1

##### **extension cables**

are manufactured from conductors having the same nominal composition as those of the corresponding thermocouple. They are designated by the letter "X" following the designation of the thermocouple, for example "JX".

##### 3.1.2

##### **compensating cables**

are manufactured from conductors having a composition different from the corresponding thermocouple. They are designated by the letter "C" following the designation of the thermocouple, for example "KC". In some cases different tolerances apply for the same thermocouple type over different temperature ranges. These are distinguished by additional letters such as, for example, KCA and KCB.



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