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Irish Standard
I.S. EN 60255-151:2009

Measuring relays and protection equipment -- Part 151: Functional requirements for over/under current protection (IEC 60255-151:2009 (EQV))

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I.S. EN 60255-151:2009

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I.S. EN 60255-151:2009

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 60255-151

October 2009

ICS 29.120.70

Supersedes EN 60255-3:1998 + corr. Jan.1998

English version

Measuring relays and protection equipment - Part 151: Functional requirements for over/under current protection

(IEC 60255-151:2009)

Relais de mesure
et dispositifs de protection -
Partie 151: Exigences fonctionnelles
pour les protections à maximum
et minimum de courant
(CEI 60255-151:2009)

Messrelais und Schutzeinrichtungen -
Teil 151: Funktionsanforderungen
für Über-/Unterstromschutz
(IEC 60255-151:2009)

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CENELEC

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

Central Secretariat: Avenue Marnix 17, B - 1000 Brussels

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Ref. No. EN 60255-151:2009 E

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Foreword

The text of document 95/255/FDIS, future edition 1 of IEC 60255-151, prepared by IEC TC 95, Measuring relays and protection equipment, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60255-151 on 2009-09-01.

This European Standard supersedes EN 60255-3:1998 + corrigendum January 1998.

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)	2010-06-01
– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2012-09-01

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 60255-151:2009 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 60044	NOTE	Harmonized in EN 60044 series (partially modified).
IEC 60255-8	NOTE	Harmonized as EN 60255-8:1998 (modified).
IEC 61850	NOTE	Harmonized in EN 61850 series (not modified).
IEC 61850-7-4	NOTE	Harmonized as EN 61850-7-4:2003 (not modified).

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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.

Publication	Year	Title	EN/HD	Year
IEC 60050-447	200X[1)]	International Electrotechnical Vocabulary - Part 447: Measuring relays	-	-
IEC 60255-1	-[2)]	Measuring relays and protection equipment - Part 1: Common requirements	EN 60255-1	200X[3)]

[1)] To be published.

[2)] Undated reference.

[3)] To be ratified.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

MEASURING RELAYS AND PROTECTION EQUIPMENT –

Part 151: Functional requirements for over/under current protection

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 60255-151 has been prepared by IEC technical committee 95: Measuring relays and protection equipment.

This first edition cancels and replaces IEC 60255-3, published in 1989.

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

FDIS	Report on voting
95/255/FDIS	95/258/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.

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A list of all parts of the IEC 60255 series, published under the general title *Measuring relays and protection equipment*, can be found on the IEC website.

Future standards in this series will carry the new general title as cited above. Titles of existing standards in this series will be updated at the time of the next edition.

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.

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MEASURING RELAYS AND PROTECTION EQUIPMENT –

Part 151: Functional requirements for over/under current protection

1 Scope and object

This part of IEC 60255 specifies minimum requirements for over/under current relays. This standard includes a specification of the protection function, measurement characteristics and time delay characteristics.

This part of IEC 60255 defines the influencing factors that affect the accuracy under steady state conditions and performance characteristics during dynamic conditions. The test methodologies for verifying performance characteristics and accuracy are also included in this standard.

The over/under current functions covered by this standard are the following:

	IEEE/ANSI C37.2 Function Numbers	IEC 61850-7-4 Logical nodes
Instantaneous phase overcurrent protection	50	PIOC
Time delayed phase overcurrent protection	51	PTOC
Instantaneous earth fault protection	50N/50G	PIOC
Time delayed earth fault protection	51N/51G	PTOC
Negative sequence overcurrent or current unbalance protection	46	PTOC
Phase undercurrent protection	37	PTUC
Voltage-dependent overcurrent protection	51V	PVOC

This standard excludes thermal electrical relays as specified in IEC 60255-8. General requirements for measuring relays and protection equipment are specified in IEC 60255-1.

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 60050-447, *International Electrotechnical Vocabulary – Part 447: Measuring relays*

IEC 60255-1, *Measuring relays and protection equipment – Part 1: Common requirements*

3 Terms and definitions

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

3.1
theoretical curve of time versus characteristic quantity
curve which represents the relationship between the theoretical specified operate time and the characteristic quantity

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