



IEC 60255-151

Edition 1.0 2009-08

INTERNATIONAL STANDARD

NORME INTERNATIONALE

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

**Relais de mesure et dispositifs de protection –
Partie 151: Exigences fonctionnelles pour les protections à minimum et
maximum de courant**





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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.

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.

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- withdrawn;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

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