

**Measuring relays and protection equipment - Part 121:
Functional requirements for distance protection**

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

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English Version

**Measuring relays and protection equipment - Part 121:
Functional requirements for distance protection
(IEC 60255-121:2014)**

Relais de mesure et dispositifs de protection - Partie 121:
Exigences fonctionnelles pour protection de distance
(CEI 60255-121:2014)

Messrelais und Schutzeinrichtungen - Teil 121:
Funktionsanforderungen für den Distanzschutz
(IEC 60255-121:2014)

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Europäisches Komitee für Elektrotechnische Normung

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

Foreword

The text of document 95/319/FDIS, future edition 1 of IEC 60255-121, prepared by IEC/TC 95 "Measuring relays and protection equipment" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 60255-121:2014.

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- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2017-04-11

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Endorsement notice

The text of the International Standard IEC 60255-121:2014 was approved by CENELEC as a European Standard without any modification.

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

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.

NOTE 1 When an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60050	series	International electrotechnical vocabulary	-	-
IEC 60255-1	-	Measuring relays and protection equipment -- Part 1: Common requirements	EN 60255-1	-
IEC 61850	series	Communication networks and systems for power utility automation	EN 61850	series
IEC 61869-2	2012	Instrument transformers -- Part 2: Additional requirements for current transformers	EN 61869-2	2012
IEC 61869-5	2011	Instrument transformers -- Part 5: Additional requirements for capacitor voltage transformers	EN 61869-5	2011

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MEASURING RELAYS AND PROTECTION EQUIPMENT –

Part 121: Functional requirements for distance protection

1 Scope

This part of IEC 60255 specifies minimum requirements for functional and performance evaluation of distance protection function typically used in, but not limited to, line applications for effectively earthed, three-phase power systems. This standard also defines how to document and publish performance tests.

This standard covers distance protection function whose operating characteristic can be defined on an impedance plane and includes specification of the protection function, measurement characteristics, phase selection, directionality, starting and time delay characteristics.

The test methodologies for verifying performance characteristics and accuracy are included in this standard. The standard defines the influencing factors that affect the accuracy under steady state conditions and performance characteristics during dynamic conditions. It also includes the instrument transformer requirements for the protection function.

The distance protection functions covered by this standard are as follows:

	IEEE/ANSI C37.2 Function numbers	IEC 61850-7-4 Logical nodes
Phase distance protection	21	PDIS
Earth (ground) distance protection	21G	PDIS

This standard does not specify the functional description of additional features often associated with digital distance relays such as power swing blocking (PSB), out of step tripping (OST), voltage transformer (VT) supervision, switch onto fault (SOTF), trip on reclose (TOR), the logic for cross country faults in not effectively earthed networks, and trip conversion logic. Only their influence on the distance protection function is covered in this standard. The protection of series-compensated lines is beyond the scope of this standard.

The general requirements for measuring relays and protection equipment are defined in IEC 60255-1.

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 60050 (all parts), *International Electrotechnical Vocabulary* (available at <<http://www.electropedia.org>>)

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

IEC 61850 (all parts), *Communication networks and systems for power utility automation*