

**Mõõtereled ja kaitseaparatuur. Osa 26:
Elektromagnetilise ühilduvuse nõuded**

Measuring relays and protection equipment -- Part 26:
Electromagnetic compatibility requirements

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EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 60255-26:2009 sisaldab Euroopa standardi EN 60255-26:2009 ingliskeelset teksti.

Standard on kinnitatud Eesti Standardikeskuse 31.12.2009 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.

Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 29.10.2009.

Standard on kättesaadav Eesti standardiorganisatsioonist.

This Estonian standard EVS-EN 60255-26:2009 consists of the English text of the European standard EN 60255-26:2009.

This standard is ratified with the order of Estonian Centre for Standardisation dated 31.12.2009 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.

Date of Availability of the European standard text 29.10.2009.

The standard is available from Estonian standardisation organisation.

ICS 29.120.70, 33.100.10, 33.100.20

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**Measuring relays and protection equipment -
Part 26: Electromagnetic compatibility requirements
(IEC 60255-26:2008)**

Relais de mesure
et dispositifs de protection -
Partie 26: Exigences de compatibilité
électromagnétique
(CEI 60255-26:2008)

Messrelais und Schutzeinrichtungen -
Teil 26: Anforderungen an die
elektromagnetische Verträglichkeit
(IEC 60255-26:2008)

This European Standard was approved by CENELEC on 2009-09-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

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.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

CENELEC

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

Central Secretariat: Avenue Marnix 17, B - 1000 Brussels

Foreword

The text of document 95/230/FDIS, future edition 2 of IEC 60255-26, 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 60255-26 on 2009-09-01.

This European Standard supersedes EN 60255-26:2005 and EN 50263:1999.

The main difference with respect to EN 60255-26:2005 concerns the reference to EN 61000-4 series and to EN 55022.

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 |

Annexes ZA and ZZ have been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 60255-26:2008 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 60255-11	1979	Electrical relays - Part 11: Interruptions to and alternating component (ripple) in d.c. auxiliary energizing quantity of measuring relays	-	-
IEC 60255-22-1	2007	Measuring relays and protection equipment - Part 22-1: Electrical disturbance tests - 1 MHz burst immunity tests	EN 60255-22-1	2008
IEC 60255-22-2	1996	Electrical relays - Part 22: Electrical disturbance tests for measuring relays and protection equipment - Section 2: Electrostatic discharge tests	EN 60255-22-2 ¹⁾	1996
IEC 60255-22-3	2007	Measuring relays and protection equipment - Part 22-3: Electrical disturbance tests - Radiated electromagnetic field immunity	EN 60255-22-3	2008
IEC 60255-22-4	2002	Electrical relays - Part 22-4: Electrical disturbance tests for measuring relays and protection equipment - Electrical fast transient/burst immunity test	EN 60255-22-4 ²⁾	2002
IEC 60255-22-5	2002	Electrical relays - Part 22-5: Electrical disturbance tests for measuring relays and protection equipment - Surge immunity test	EN 60255-22-5	2002
IEC 60255-22-6	2001	Electrical relays - Part 22-6: Electrical disturbance tests for measuring relays and protection equipment - Immunity to conducted disturbances induced by radio frequency fields	EN 60255-22-6	2001
IEC 60255-22-7	2003	Electrical relays - Part 22-7: Electrical disturbance tests for measuring relays and protection equipment - Power frequency immunity tests	EN 60255-22-7	2003
IEC 60255-25	2000	Electrical relays - Part 25: Electromagnetic emission tests for measuring relays and protection equipment	EN 60255-25	2000
IEC 61000-4-2	1995	Electromagnetic compatibility (EMC) -	EN 61000-4-2 ³⁾	1995
A1	1998	Part 4-2: Testing and measurement	A1	1998
A2	2000	techniques - Electrostatic discharge immunity test	A2	2001

¹⁾ EN 60255-22-2 is superseded by EN 60255-22-2:2008, which is based on IEC 60255-22-2:2008.

²⁾ EN 60255-22-4 is superseded by EN 60255-22-4:2008, which is based on IEC 60255-22-4:2008.

³⁾ EN 61000-4-2 is superseded by EN 61000-4-2:2009, which is based on IEC 61000-4-2:2008.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 61000-4-3	2006	Electromagnetic compatibility (EMC) - Part 4-3: Testing and measurement techniques - Radiated, radio-frequency, electromagnetic field immunity test	EN 61000-4-3	2006
IEC 61000-4-4	2004	Electromagnetic compatibility (EMC) - Part 4-4: Testing and measurement techniques - Electrical fast transient/burst immunity test	EN 61000-4-4	2004
IEC 61000-4-5	2005	Electromagnetic compatibility (EMC) - Part 4-5: Testing and measurement techniques - Surge immunity test	EN 61000-4-5	2006
IEC 61000-4-6 + A1 + A2	2003 2004 2006	Electromagnetic compatibility (EMC) - Part 4-6: Testing and measurement techniques - Immunity to conducted disturbances, induced by radio-frequency fields	EN 61000-4-6 ⁴⁾ + corr. August	2007 2007
IEC 61000-4-8 A1	1993 2000	Electromagnetic compatibility (EMC) - Part 4-8: Testing and measurement techniques - Power frequency magnetic field immunity test	EN 61000-4-8 A1	1993 2001
IEC 61000-4-16 A1	1998 2001	Electromagnetic compatibility (EMC) - Part 4-16: Testing and measurement techniques - Test for immunity to conducted, common mode disturbances in the frequency range 0 Hz to 150 kHz	EN 61000-4-16 A1	1998 2004
IEC 61000-4-18	2006	Electromagnetic compatibility (EMC) - Part 4-18: Testing and measurement techniques - Damped oscillatory wave immunity test	EN 61000-4-18 + corr. September	2007 2007
IEC 61000-4-29	2000	Electromagnetic compatibility (EMC) - Part 4-29: Testing and measurement techniques - Voltage dips, short interruptions and voltage variations on d.c. input power port immunity tests	EN 61000-4-29	2000
CISPR 22 (mod) A1 A2	2005 2005 2006	Information technology equipment - Radio disturbance characteristics - Limits and methods of measurement	EN 55022 A1 -	2006 2007 -

⁴⁾ EN 61000-4-6 is superseded by EN 61000-4-6:2009, which is based on IEC 61000-4-6:2008.

Annex ZZ
(informative)

Coverage of Essential Requirements of EC Directives

This European Standard has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association and within its scope the standard covers all relevant essential requirements as given in Article 1(a) of Annex I of EC Directive 2004/108/EC.

Compliance with this standard provides one means of conformity with the specified essential requirements of the Directive concerned.

WARNING: Other requirements and other EC Directives may be applicable to the products falling within the scope of this standard.

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INTRODUCTION

This part of IEC 60255 specifies all of the requirements for electromagnetic compatibility in a single document. As such, it is considered as an overview document for measuring relays and protection equipment. The detailed test procedures are given in other referenced standards.

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MEASURING RELAYS AND PROTECTION EQUIPMENT –

Part 26: Electromagnetic compatibility requirements

1 Scope and object

This part of IEC 60255 is applicable to measuring relays and protection equipment for power system protection, including the control, monitoring and process interface equipment used with those systems.

This standard specifies the essential requirements for electromagnetic compatibility for measuring relays and protection equipment intended to be used at industrial locations.

Measuring relays and protection equipment used in substations and power plants may require higher immunity test levels.

For equipment not incorporating electronic circuits, for example electromechanical relays, tests according to this standard are not required.

The requirements specified in this standard are applicable to measuring relays and protection equipment in a new condition and all tests specified are type tests only.

1.1 Emission

The object of this standard is to specify limits and test methods, for measuring relays and protection equipment in relation to electromagnetic emissions which may cause interference in other equipment.

These emission limits represent electromagnetic compatibility essential requirements and have been selected to ensure that the disturbances generated by measuring relays and protection equipment, operated normally in substations and power plants, do not exceed a level which could prevent other equipment from operating as intended.

Test requirements are specified for the enclosure and power supply ports.

1.2 Immunity

The object of this standard is to specify the essential immunity test requirements for measuring relays and protection equipment in relation to continuous and transient, conducted and radiated disturbances, including electrostatic discharges.

These test requirements represent the essential electromagnetic compatibility immunity requirements selected to ensure an adequate level of immunity for measuring relays and protection equipment.

NOTE 1 Safety considerations are not covered in this standard.

NOTE 2 In special cases, situations will arise where the levels of disturbance may exceed the levels specified in this standard, for example where a hand-held transmitter is used in close proximity to measuring relays and protection equipment. In these instances, special precautions may have to be employed.

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 60255-11:1979, *Electrical relays – Part 11: Interruptions to and alternating component (ripple) in d.c. auxiliary energizing quantity of measuring relays*

IEC 60255-22-1:2007, *Measuring relays and protection equipment – Part 22-1: Electrical disturbance tests – 1 MHz burst immunity tests*

IEC 60255-22-2:1996, *Electrical relays – Part 22: Electrical disturbance tests for measuring relays and protection equipment – Section 2: Electrostatic discharge tests*

IEC 60255-22-3:2007, *Measuring relays and protection equipment – Part 22-3: Electrical disturbance tests – Radiated electromagnetic field immunity*

IEC 60255-22-4:2002, *Electrical relays – Part 22-4: Electrical disturbance tests for measuring relays and protection equipment – Electrical fast transient/burst immunity test*

IEC 60255-22-5:2002, *Electrical relays – Part 22-5: Electrical disturbance tests for measuring relays and protection equipment – Surge immunity test*

IEC 60255-22-6:2001, *Electrical relays – Part 22-6: Electrical disturbance tests for measuring relays and protection equipment – Immunity to conducted disturbances induced by radio frequency fields*

IEC 60255-22-7:2003, *Electrical relays – Part 22-7: Electrical disturbance tests for measuring relays and protection equipment – Power frequency immunity tests*

IEC 60255-25:2000, *Electrical relays – Part 25: Electromagnetic emission tests for measuring relays and protection equipment*

CISPR 22:2006, *Information technology equipment – Radio disturbance characteristics – Limits and methods of measurement*

IEC 61000-4-2:2001, *Electromagnetic compatibility (EMC) – Part 4-2: Testing and measurement techniques – Electrostatic discharge immunity test*

IEC 61000-4-3:2006, *Electromagnetic compatibility (EMC) – Part 4-3 : Testing and measurement techniques – Radiated, radio-frequency, electromagnetic field immunity test*

IEC 61000-4-4:2004, *Electromagnetic compatibility (EMC) – Part 4-4: Testing and measurement techniques – Electrical fast transient/burst immunity test*

IEC 61000-4-5:2005, *Electromagnetic compatibility (EMC) – Part 4-5: Testing and measurement techniques – Surge immunity test*

IEC 61000-4-6:2006, *Electromagnetic compatibility (EMC) – Part 4-6: Testing and measurement techniques – Immunity to conducted disturbances, induced by radio-frequency fields*

IEC 61000-4-8:2001, *Electromagnetic compatibility (EMC) – Part 4-8: Testing and measurement techniques – Power frequency magnetic field immunity test*

IEC 61000-4-16:2002, *Electromagnetic compatibility (EMC) – Part 4-16: Testing and measurement techniques – Test for immunity to conducted, common mode disturbances in the frequency range 0 Hz to 150 kHz*

IEC 61000-4-18:2006, *Electromagnetic compatibility (EMC) – Part 4-18: Testing and measurement techniques – Damped oscillatory wave immunity test*

IEC 61000-4-29:2000, *Electromagnetic compatibility (EMC) – Part 4-29: Testing and measurement techniques – Voltage dips, short interruptions and voltage variations on d.c. input power port immunity tests*

3 Terms and definitions

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

3.1

auxiliary power supply port

a.c or d.c auxiliary energising input of the Equipment Under Test (EUT)

3.2

communication port

interface with a communication and/or control system, using low energy signals, permanently connected to the EUT

3.3

enclosure port

physical boundary of the EUT through which electromagnetic fields may radiate or impinge

3.4

Equipment Under Test

EUT

equipment which may be either a measuring relay or a protection equipment

3.5

functional earth port

port on the EUT which is connected to earth for purposes other than electrical safety

3.6

input port

port through which the EUT is energised or controlled in order to perform its function(s), for example current and voltage transformer, binary (status), etc.

3.7

output port

port through which the EUT produces predetermined changes, for example contacts, optocouplers, analogue output, etc.

3.8

port

particular interface of the specified EUT with the external electromagnetic environment (see Figure 1).