

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Measuring relays and protection equipment –
Part 26: Electromagnetic compatibility requirements**

**Relais de mesure et dispositifs de protection –
Partie 26: Exigences de compatibilité électromagnétique**

IEC 60255-26:2008

<https://standards.iteh.ai/en/standards/iec/60255-26-2008>



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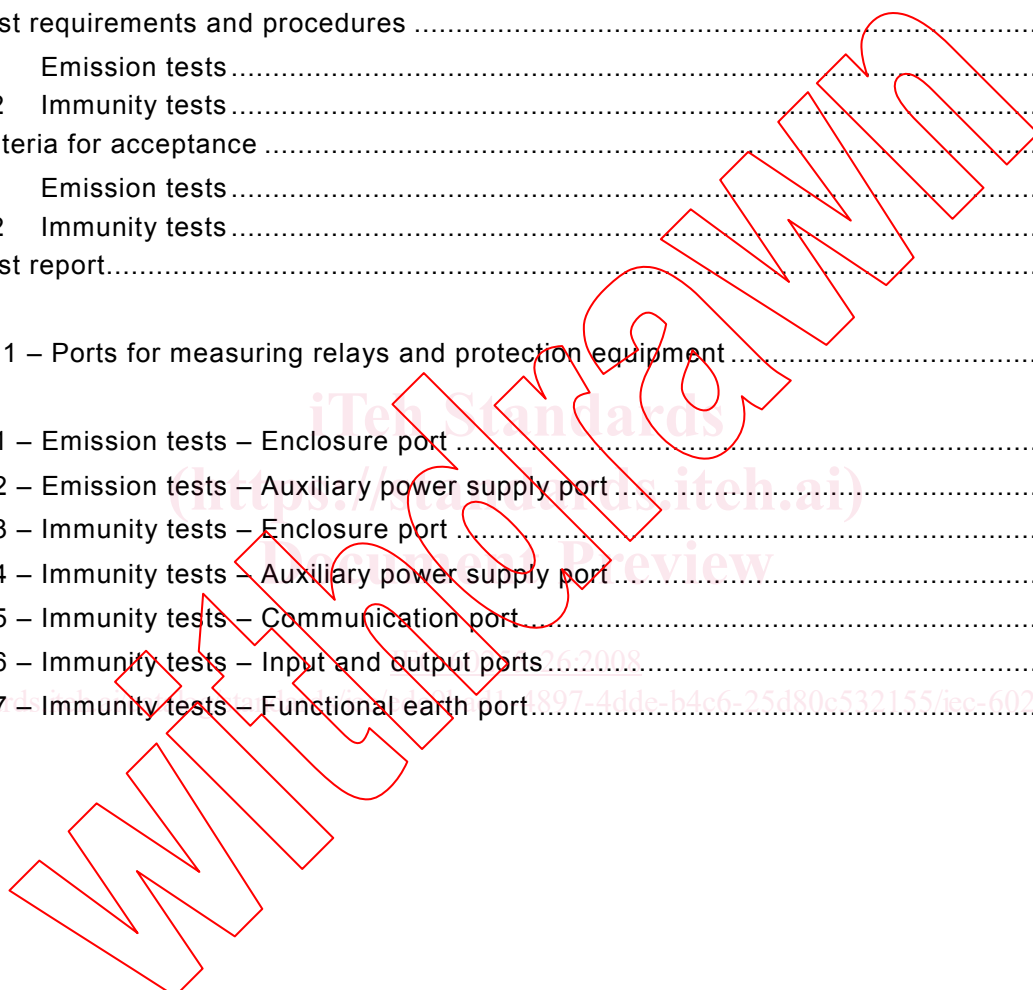
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MEASURING RELAYS AND PROTECTION EQUIPMENT –**Part 26: Electromagnetic compatibility requirements**

FOREWORD

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International Standard IEC 60255-26 has been prepared by IEC technical committee 95: Measuring relays and protection equipment.

This second edition cancels and replaces the first edition published in 2004. This edition constitutes a technical revision.

The main difference with respect to the previous edition concerns the reference to IEC 61000-4 series and to CISPR 22.

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

FDIS	Report on voting
95/230/FDIS	95/234/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 IEC 60255 series under the general title *Measuring relays and protection equipment*, 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- withdrawn,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.

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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

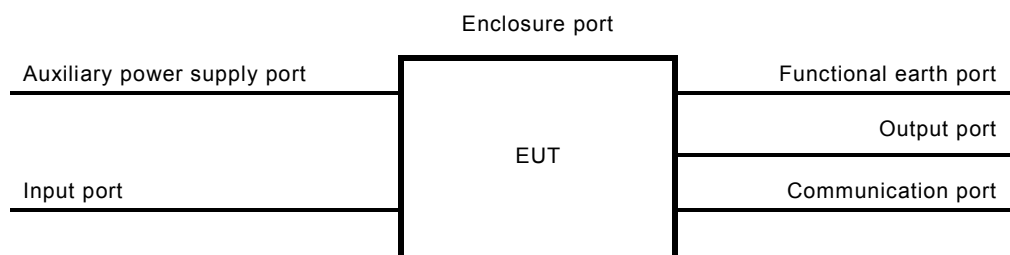
output port

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).



IEC 896/08

Figure 1 – Ports for measuring relays and protection equipment

4 Test requirements and procedures

4.1 Emission tests

The requirements and procedures for conducted and radiated emission tests are specified in Table 1 and Table 2.

4.2 Immunity tests

The requirements and procedures for immunity tests are specified in Table 3 to Table 7.

5 Criteria for acceptance

5.1 Emission tests

The measured values shall be below the levels specified in Table 1 and Table 2.

5.2 Immunity tests

The criteria for acceptance shall be as specified in the documents given in Table 3 to Table 7.

After the tests, the EUT shall still comply with the relevant performance specifications.

6 Test report

The test report shall be in accordance with that given in the relevant IEC 60255 series of standards if required, and this test report shall always be produced.

NOTE The item numbers in Tables 1, 2, 3, 4, 5, 6 and 7 are given for reference purposes and should be used in the test report.

Table 1 – Emission tests – Enclosure port

Item	Environmental phenomena	Frequency range	Limits ^a	Basic standard	Test procedure
1.1	Radiated emission	30 MHz – 230 MHz	40 dB(μV/m) quasi peak	CISPR 22	IEC 60255-25
		230 MHz – 1 000 MHz	47 dB(μV/m) quasi peak		

^a The limits given in this table are measured at a distance of 10 m.