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Project No. 2024/02794

Responsible committee: GEL/210 EMC Policy and Standards Committee

Interested committees:

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**Title:** BS EN IEC 61000-4-27/A2 ED1 Amendment 2 - Electromagnetic compatibility (EMC)

Part 4-27: Testing and measurement techniques - Unbalance, immunity test

Please notify the secretary if you are aware of any keywords that might assist in classifying or identifying the standard or if the content of this standard

- i) has any issues related to 3rd party IPR, patent or copyright
- ii) affects other national standard(s)
- iii) requires additional national guidance or information

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## Introduction

This draft standard is based on national and international discussions. Your comments on this draft are invited and will assist in the preparation of the consequent standard.

For international standards, comments will be reviewed by the relevant UK national committee before sending the consensus UK vote and comments to the international committee, which will then decide appropriate action. If the international standard is approved, it is usual for the text to be published as a British Standard.

For national standards, comments will be reviewed by the relevant UK national committee and the resulting standards published as a British Standard.

## UK Vote

Please indicate whether you consider the UK should submit a negative (with supporting technical reasons) or positive vote on this draft. Please indicate if you are aware of any reason why this draft standard should not be published as a British Standard.

## Submission of Comments

- **Annotated drafts are not acceptable and will be rejected.**
- All comments should be submitted online at <https://standardsdevelopment.bsigroup.com/>. You will need to register in order to comment.

## Template for comments and secretariat observations

|                  |                        |
|------------------|------------------------|
| Date: xx/xx/20xx | Document: ISO/DIS xxxx |
|------------------|------------------------|

| 1  | 2                                          | (3)                          | 4               | 5                                                                                                                                  | (6)                                                                      | 7                                                  |
|----|--------------------------------------------|------------------------------|-----------------|------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|----------------------------------------------------|
| MB | Clause No./ Subclause No./Annex (e.g. 3.1) | Paragraph/Figure/ Table/Note | Type of comment | Commend (justification for change) by the MB                                                                                       | Proposed change by the MB                                                | Secretariat observations on each comment submitted |
|    | 3.1                                        | Definition 1                 | ed              | Definition is ambiguous and needs clarifying.                                                                                      | Amend to read '...so that the mains connector to which no connection...' |                                                    |
|    | 6.4                                        | Paragraph 2                  | te              | The use of the UV photometer as an alternative cannot be supported as serious problems have been encountered in its use in the UK. | Delete reference to UV photometer.                                       |                                                    |



# 77A/1229/CD

COMMITTEE DRAFT (CD)

PROJECT NUMBER:  
**IEC 61000-4-27/AMD2 ED1**

DATE OF CIRCULATION:  
**2024-09-27**

CLOSING DATE FOR COMMENTS:  
**2024-11-22**

SUPERSEDES DOCUMENTS:  
**77A/1212/RR**

IEC SC 77A : EMC - LOW FREQUENCY PHENOMENA

SECRETARIAT:  
France

SECRETARY:  
Mr Cédric LAVENU

OF INTEREST TO THE FOLLOWING COMMITTEES:

HORIZONTAL FUNCTION(S):

TC 77/SC 77A Horizontal Basic EMC

ASPECTS CONCERNED:

Electromagnetic Compatibility

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Recipients of this document are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

Recipients of this document are invited to submit, with their comments, notification of any local regulations or technical reasons that may exist and should be considered should this proposal proceed, recognizing that failure to address such requirements could result in the need for new or existing "In Some Countries" clauses. (SEE [AC/22/2007](#) OR [NEW GUIDANCE DOC](#)).

TITLE:

**Amendment 2 - Electromagnetic compatibility (EMC) - Part 4-27: Testing and measurement techniques - Unbalance, immunity test**

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## INTRODUCTION

The CD proposed for Amendment 2 to IEC 61000-4-27 Ed. 1.1 (= IEC 61000-4-27:2000 plus IEC 61000-4-27/AMD1:2009) is based on 77A/1189/DC, 77A/1198A/INF and follows 77A/1212/RR.

This CD contains the following main changes in comparison with IEC 61000-4-27 ED 1.1:

The angles in table 1 (test levels) suggest a three-phase system with a negative phase sequence while the intention is to have a positive phase sequence and thus the signs and values of all angles in Table 1 should be corrected. In addition, the value of  $k_{u2}$  of class 2, test 3 is 28 % instead of 25 %. The Table 1 is modified accordingly

Class X is defined as special and levels 2 and 3 refers to Annex D instead of 61000-2-4.

$U_N$  is deleted from Table 1, and it is moved to the new clause 3 (Terms, definitions, and abbreviations). The definition 3.5  $U_N$  nominal phase to neutral voltage is added.

In addition, the definition of rise and fall time is added (as in 61000-4-11 ed 3).

The text in Note 1 in Table 1 is deleted and replaced by " $U_b$  is lagging against  $U_a$ , and  $U_c$  is leading against  $U_a$ ".

In table 1 Add NOTE 2: The product committee may specify any test level; however, for equipment connected to public supply systems, it is recommended that the levels should not be lower than those defined for class 2.

The sentence under Table 1 becomes NOTE 2 in the Table 1.

Some changes are introduced also in Table 2 (Characteristics of the generator). Main changes:

- Modified output current capability which must be able to provide a crest factor of at least 3 when  $U_N$  applied to calibration load.
- Modified voltage rise time adding (from 10 % to 90 %)
- Modified phase shifting
- Modified phase accuracy (put 50 Hz or 60 Hz).

In clause 7 a sentence is added: The equipment under test (EUT) is set up at a steady mains voltage

In clause 8.2 the last sentence "After each group of tests a full functional check shall be performed." Is deleted. In addition, Figure 2 is simplified.

In clause 10 updated Figures 1 and 2 are included.

A new informative Annex B is proposed which includes two different calculation methods:

- method 1 does not require complex or vector calculus.
- method 2 uses phasors and matrices but is more compact.

Both methods are mathematically equivalent.