TECHNICAL REPORT

IEC TR 60664-2-2

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2002-01

Insulation coordination for equipment within low-voltage systems –

Part 2-2: Interface considerations – Application guide

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

INSULATION COORDINATION FOR EQUIPMENT WITHIN LOW-VOLTAGE SYSTEMS –

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FOREWORD

1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, the IEC publishes International Standards. Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. The IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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The main task of IEC technical committees is to prepare International Standards. However, a technical committee may propose the publication of a technical report when it has collected data of a different kind from that which is normally published as an International Standard, for example “state of the art”.

Technical reports do not necessarily have to be reviewed until the data they provide are considered to be no longer valid or useful by the maintenance team.

IEC 60664-2-2, which is a technical report, has been prepared by IEC technical committee 109: Insulation coordination for low-voltage equipment.

The text of this technical report is based on the following documents:

Enquiry draft	Report on voting
28A/168/CDV	109/2/RVC

Full information on the voting for the approval of this technical report 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 3.

This document, which is purely informative, is not to be regarded as an International Standard.

The committee has decided that the contents of this publication will remain unchanged until 2004. At this date, the publication will be

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

INTRODUCTION

This technical report provides guidelines for a common basis for IEC technical committees when considering interface issues in relation to insulation coordination. Surge protective devices are key elements in achieving a controlled overvoltage condition in low-voltage a.c. power systems and equipment. The aim of this guide is to avoid conflicting activities in the various committees involved and to achieve consistent requirements and guidelines. It deals with factors that influence the determination of overvoltage categories for installation and equipment.

A technical report IEC TR 62066 is being prepared by a joint working group (JWG) initially composed of representatives from the five IEC technical committees and subcommittees listed below and subsequently complemented by experts appointed by national committees and by CIGRE-CIRED.

SC 37A	Low-voltage surge-protective devices
TC 64	Electrical installations and protection against electric shock
SC 77B	High-frequency phenomena
TC 81	Lightning protection
TC 109	Insulation coordination for low-voltage equipment

Excerpts from IEC 62066 are included in order to identify information relevant to insulation coordination for low-voltage equipment.

INSULATION COORDINATION FOR EQUIPMENT WITHIN LOW-VOLTAGE SYSTEMS –

Part 2-2: Interface considerations – Application guide

1 Scope

This technical report provides an overview of the different kinds of surge overvoltages that can occur on low-voltage installations and equipment. In particular:

– the magnitude and duration of typical surges as well as their frequency of occurrence;

– information on overvoltages resulting from interaction between power and communication systems;

– guidelines when considering interface issues in relation to insulation coordination;

– guidelines concerning surge protection means on the basis of availability and risk considerations, including interaction within the system;

– highlights temporary overvoltages and other factors that have to be taken into account for insulation coordination, primarily related to protective control using surge protective devices.

2 Reference documents

IEC 60364-4-44, *Electrical installations of buildings – Part 4-44: Protection for safety – Protection against voltage disturbances and electromagnetic disturbances*

IEC 60664-1, *Insulation coordination for equipment within low-voltage systems – Part 1: Principles, requirements and tests*

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

IEC TS 61312-3, *Protection against lightning electromagnetic impulse – Part 3: Requirements of surge protective devices (SPDs)*

IEC 61643-1, *Surge protective devices connected to low-voltage power distribution systems – Part 1: Performance requirements and testing methods*

IEC TR 62066, *General basic information regarding surge overvoltages and surge protection in low-voltage a.c. power systems* [1]

IEC 61643-12, *Surge protective devices connected to low-voltage power distribution systems – Part 12: Selection and application principles* [1]

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[1] To be published.