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BSI Standards Publication

Low-voltage switchgear and controlgear – Electromagnetic compatibility assessment for switchgear and controlgear and their assemblies

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National foreword

This Published Document is the UK implementation of IEC TR 63216:2019.

The UK participation in its preparation was entrusted to Technical Committee PEL/121/1, Low voltage switchgear and controlgear.

A list of organizations represented on this committee can be obtained on request to its secretary.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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LOW-VOLTAGE SWITCHGEAR AND CONTROLGEAR –

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FOREWORD

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IEC TR 63216, which is a technical report, has been prepared by subcommittee 121A: Low-voltage switchgear and controlgear, of IEC technical committee 121: Switchgear and controlgear and their assemblies for low voltage.

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

Enquiry draft	Report on voting
121A/292/DTR	121A/306A/RVDTR

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 document has been drafted in accordance with the ISO/IEC Directives, Part 2.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "http://webstore.iec.ch" in the data related to the specific document. At this date, the document will be

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- withdrawn,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

A bilingual version of this publication may be issued at a later date.

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

INTRODUCTION

Low-voltage switchgear and controlgear and their assemblies (hereinafter referred to as "equipment") compliant with their standards, when installed and used in accordance with manufacturer's instructions, operate safely and reliably with a good level of immunity and do not produce interferences in normal operation or reasonably foreseeable faulty conditions.

This document is intended to support discussions within IEC TC 121 and its sub-committees, and with other TCs/SCs, by explaining electromagnetic compatibility assessment of equipment and compatibility measures contained in the IEC 60947 series of standards.

Those measures are based on a system approach, depending on the EMC environment in industrial applications. They include design rules and type tests to ensure the compatibility of equipment to the intended electromagnetic environment.

The collection of IEC 61000 series is very large and very generic. The intent of this document is to provide the essential applicable EMC concepts for IEC TC 121 and its sub-committees' working groups, maintenance teams and project teams.

For this intent, this document defines specific descriptions of the relevant EMC environments which are derived from the generic ones of IEC 61000 series. In addition, these environments are consistent with the zones defined by IEC 61131-2.

LOW-VOLTAGE SWITCHGEAR AND CONTROLGEAR –

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1 Scope

The purpose of this document is to define homogeneous categories for the electromagnetic environments in order to harmonize as far as practicable all general rules and product standard requirements of electromagnetic compatibility (EMC), applicable to low-voltage switchgear, controlgear and their assemblies with built-in electronic circuits.

This document also addresses incorporated radiocommunication functions.

The typical application environments for such equipment include the electrical distribution in infrastructure, commercial and industrial buildings and the control systems of machinery, including motor-driven systems.

The primary intention of EMC requirements is to ensure the safe and reliable operation of the equipment, as well as the communication efficiency of the radiocommunication equipment within their intended environments.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 60050-161:1990, *International Electrotechnical Vocabulary (IEV) – Part 161: Electromagnetic compatibility*
IEC 60050-161:1990/AMD1:1997
IEC 60050-161:1990/AMD2:1998
IEC 60050-161:1990/AMD3:2014
IEC 60050-161:1990/AMD4:2014
IEC 60050-161:1990/AMD5:2015
IEC 60050-161:1990/AMD6:2016
IEC 60050-161:1990/AMD7:2017
IEC 60050-161:1990/AMD8:2018

IEC 60050-441, *International Electrotechnical Vocabulary (IEV) – Part 441: Switchgear, controlgear and fuses*

IEC 60364-4-44, *Low-voltage electrical installations – Part 4-44: Protection for safety – Protection against voltage disturbances and electromagnetic disturbances*

IEC 60364-5-53, *Low-voltage electrical installations – Part 5-53: Selection and erection of electrical equipment – Devices for protection for safety, isolation, switching, control and monitoring*

IEC 60364-5-54, *Low-voltage electrical installations – Part 5-54: Selection and erection of electrical equipment – Earthing arrangements and protective conductors*