

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Low-voltage switchgear and controlgear – Controller device interfaces (CDIs) –
Part 1: General rules**

**Appareillage à basse tension – Interfaces appareil de commande-appareil (CDI) –
Partie 1: Règles générales**





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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**LOW-VOLTAGE SWITCHGEAR AND CONTROLGEAR –
CONTROLLER-DEVICE INTERFACES (CDIs) –****Part 1: General rules**

FOREWORD

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International Standard IEC 62026-1 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.

This third edition cancels and replaces the second edition published in 2007. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- a) additional requirements for safety information and instructions, including the measures to be taken, if any, for achieving EMC compliance;
- b) EMC immunity requirements aligned with current IEC 61000-6 series of standards. Radiated radio-frequency electromagnetic fields test level increased to 6 GHz;
- c) EMC emissions requirements aligned with current CISPR 11 publication.

The text of this International Standard is based on the following documents:

FDIS	Report on voting
121A/280/FDIS	121A/295/RVD

Full information on the voting for the approval of this International Standard 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.

A list of all parts of the IEC 62026, under the general title *Low-voltage switchgear and controlgear – Controller-device interfaces (CDIs)*, can be found on the IEC website.

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- withdrawn,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.

INTRODUCTION

The class of controller-device interfaces (CDIs) covered in this document includes industrial CDIs for control systems, factory automation and process automation.

Industrial CDIs have proliferated to meet specific user needs, but no single CDI meets all needs. The reason for multiple solutions is the wide range of physical, usage, information content and configuration requirements. The physical requirements have resulted in CDIs with widely differing signal and line conditioning mechanisms in order to meet distance, node count and environmental considerations.

While there is wide variation in CDI technologies, there are common components, interfaces and environmental requirements that are specified by this document. Standardized definitions of these common CDI requirements assist the user in comparing and selecting technologies to match the distance, node count, throughput and installation requirements for a specific application.

This document simplifies the CDI selection process by providing a common structure for generating a specific CDI's IEC standard while also allowing specific interface features and capabilities to be included. Clauses 4 to 8 contain the outline of general requirements that the CDI's IEC standard identifies. Clause 9 contains the test specifications.

Standardization of CDI aspects also simplifies the task of writing the software for the higher layer functions of industrial control systems, such as supervisory control, operator interface and control strategy programming.

For this document to be complete and usable, it requires the availability of specific CDI standards, which make up the other parts of the IEC 62026 series.

LOW-VOLTAGE SWITCHGEAR AND CONTROLGEAR – CONTROLLER-DEVICE INTERFACES (CDIs) –

Part 1: General rules

1 Scope

This part of IEC 62026 applies to interfaces between low-voltage switchgear, controlgear, and controllers (e.g. programmable controllers, personal computers, etc.).

This document does not apply to higher level industrial communication networks that have become known as fieldbuses and are considered by IEC subcommittee 65C.

The purpose of this document is to harmonize and define rules, components and requirements of a general nature applicable to industrial CDIs. Those features of the various CDI standards which can be considered as general have therefore been brought together in this document.

For each CDI, two main documents are necessary to determine all requirements and tests:

- a) this document, referred to as “IEC 62026-1” in the relevant parts covering the various types of CDIs;
- b) the specific CDI part of the IEC 62026 series.

A specific CDI part may omit a general requirement if it is not applicable, or it may add to it if it is inadequate in the particular case.

NOTE Product-specific requirements for products incorporating a CDI are given in the relevant product standards. These requirements apply in addition to those given in this document.

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 60947-1:2007, *Low-voltage switchgear and controlgear – Part 1: General rules*
IEC 60947-1:2007/AMD1:2010
IEC 60947-1:2007/AMD2:2014

IEC 61000-4-2:2008, *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 61000-4-3:2006/AMD1:2007
IEC 61000-4-3:2006/AMD2:2010

IEC 61000-4-4:2012, *Electromagnetic compatibility (EMC) – Part 4-4: Testing and measurement techniques – Electrical fast transient/burst immunity test*

IEC 61000-4-5:2014, *Electromagnetic compatibility (EMC) – Part 4-5: Testing and measurement techniques – Surge immunity test*
IEC 61000-4-5:2014/AMD1:2017