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Railway applications - Electronic power converters for fixed installations - Part 2-1: DC traction applications - Uncontrolled rectifiers

Applications ferroviaires - Convertisseurs électroniques de puissance pour installations fixes - Partie 2-1: Applications de traction en courant continu - Redresseurs non commandés

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CONTENTS

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Railway applications - Electronic power converters for fixed installations - Part 2-1: DC traction applications - Uncontrolled rectifiers

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IEC 62590-2-1 has been prepared by IEC technical committee 9: Electrical equipment and systems for railways. It is an International Standard.

This first edition of IEC 62590-2-1, in conjunction with the other parts of the IEC 62590 series, cancels and replaces the first edition of IEC 62589 published in 2010 and the second edition of IEC 62590 published in 2019.

This document includes the following significant technical changes with respect to IEC 62589 and the former IEC 62590:

a) Reduction of the requirements for uncontrolled rectifiers only;
b) Interface model for the different systems connected;
c) Energy efficiency addressed.

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

Draft	Report on voting
9/3224/FDIS	9/3265/RVD

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/publications.

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

– reconfirmed,
– withdrawn, or
– revised.

INTRODUCTION

Electronic power converters for traction power supply differ from other converters for industrial use due to special electrical service conditions and due to the large range of load variations and the peculiar characteristics of the load.

For these reasons IEC 60146-1-1 does not fully cover the requirements of railway applications and the decision was taken to have a specific standard for this use.

Uncontrolled rectifiers consist of a rectifier diode assembly and a transformer. Both fulfil common requirements. The transformer determines the voltage versus current characteristic.

Converter transformers for fixed installations of railway applications are covered by IEC 62695.