IEEE Standard for Uncontrolled Traction Power Rectifiers for Substation Applications Up to 1500 V DC Nominal Output

Sponsor

Rail Transit Vehicle Interface Standards Committee

of the

IEEE Vehicular Technology Society

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Abstract: The design, manufacturing, and testing unique to the application of uncontrolled semiconductor power rectifiers for direct current (dc) supplied transportation substation applications up to 1500 V dc nominal output is covered in this standard. The standard is intended to address traction power substation rectifiers that are to be provided as part of a rectifier transformer unit or are provided separately. Application information and extensive definitions of related technical terms are included.

Keywords: commutating reactance, double-way, extra heavy traction, heavy traction, interphase transformer, light transition load, power rectifier, rectifier transformer unit, service rating, traction power substation

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Introduction

This introduction is not part of IEEE Std 1653.2-2009, IEEE Standard for Uncontrolled Traction Power Rectifiers for Substation Applications up to 1500 V DC Nominal Output.

The intention of the working group that developed this standard was to provide an up-to-date replacement for the rescinded NEMA Standards Publication RI 9 and the rescinded ANSI C34.2.[a] To make this task more manageable, the scope of this effort was limited to uncontrolled (diode type) traction power rectifiers supplying power to direct current (dc)-supplied transportation equipment.

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[a] Information on references can be found in Clause 2.

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Contents

IEEE Standard for Uncontrolled Traction Power Rectifiers for Substation Applications Up to 1500 V DC Nominal Output

1. Overview

1.1 Scope

This standard covers the design, manufacturing, and testing unique to the application of uncontrolled semiconductor power rectifiers for direct current (dc)-supplied transportation substation applications up to 1500 V dc nominal output.

1.2 Purpose

Currently, there are no suitable standards governing requirements for traction power rectifiers. This standard provides requirements specific to traction power rectifiers supplying power to dc-supplied transportation equipment.