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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 32580.301-2016

**Railway applications -- Fixed installations -- Particular requirements for
a.c. switchgear -- Part 3-1: Measurement, control and protection
devices for specific use in a.c. traction systems -- Application guide**

轨道交通 地面装置 交流开关设备的特殊要求 第3-1部分：交流牵引系统专用测量
、控制和保护装置 应用指南

(English Translation)

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Foreword

GB/T 32580 "Rail Transit Ground Equipment AC Switchgear Special Requirements" is divided into the following sections.

- Part 1. Single-phase circuit breakers with U_n greater than 1 kV;
- Part 2. Single - phase disconnectors with U_n greater than 1 kV, earthing switches and load switches;
- Part 3-1. Guidance on the application of measurement, control and protection devices for AC traction systems;
- Part 3-2. Special measurement, control and protection devices for AC traction systems - Single - phase current transformers;

Part 3-3. Special measurement, control and protection devices for AC traction systems
Single phase inductive voltage transformers.

This part is part 3-1 of GB/T 32580.

This part is drafted in accordance with the rules given in GB/T 1.1-2009.

This part uses the re-drafting method to modify the use of IEC 62505-3-1.:2009 "rail transit ground device AC switchgear special Requirements - Part 3-1. Guidance on the Application of Special Measurement, Control and Protection Devices for AC Traction Systems.

The technical differences between this part and IEC 62505-3-1.:2009 are as follows.

- removed the first chapter in the range of 16.7Hz, 60Hz voltage, an increase of the nominal voltage of 50kV, in line with the domestic voltage characteristics;
- modified Chapter 3 reference file, with GB/T 32580.302 instead of IEC 62505-3-2, GB/T 32580.303 instead of IEC 62505-3-3, uniform requirements;
- modified 5.2.2 application note, further clarified the requirements;
- increased 5.4, clear with the external interface should be necessary to prevent overvoltage measures.

Editorial changes made in this section are.

- delete the original reference.

This section is made by the National Railway Administration.

This part is headed by the National Technical Committee for Standardization of Electrical Equipment and Systems (SAC/TC278).

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Rail transit ground equipment AC switchgear special requirements Part 3-1. AC traction system for special measurement, Control and Protection Device Application Guide

1 Scope

This part of GB/T 32580 specifies the design of traction power supply systems for the exchange of equipment protection, control and measurement systems to provide assistance, guidance and Claim. This section specifies the characteristics and parameters of measuring, controlling and protecting equipment in AC traction systems and providing the correct use of protection guide.

This part is applicable to electrified railway power supply system with nominal voltage of 25kV, 50kV and frequency of 50Hz. Electrical measurement and protection Device.

2 Normative reference documents

The following documents are indispensable for the application of this document. For dated references, only the dated edition applies to this article Pieces. For undated references, the latest edition (including all modifications) applies to this document.

GB/T 32580.302 Railways - Ground equipment - Particular requirements for AC switchgear - Part 3-2. AC traction system Special measurement, control and protection devices Single-phase current transformers (IEC 62505-3-2.:2009, MOD) GB/T 32580.303 Special requirements for AC switchgear for ground transportation applications - Part 3-3. AC traction system Special measurement, control and protection devices Single phase inductive voltage transformers (IEC 62505-3-3.:2009, MOD)

3 Measurements

Two types of measurements.

- measuring the current and voltage signals connected to the instrument and telemetry instrument;
- Measure current and voltage signals for overcurrent, low impedance, overvoltage/low voltage, short circuit or distance protection relays.

Accuracy class, variable ratio and load should be selected from GB/T 32580.302 or GB/T 32580.303. The choice of accuracy level is taken Depending on measurement accuracy and use.

4.1 Overview

The functions specified in this chapter are selected according to the requirements of the user control system.

The closing control system is usually a switchgear associated with electrical closing. According to the state of the system (and equipment) and meet the requirements to allow or prevent the closure of the switch.

4.2 Bulletproof function

The function of the system is to limit the closing device to operate again when the closing signal is maintained. If the closing signal is held, the switching device is not