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

GB/T 28026.2-2018

Replacing GB/T 28026.2-2011

**Railway applications -- Fixed installations -- Electrical safety,
earthing and the return circuit -- Part 2: Provisions against the
effects of stray currents caused by d.c. traction systems**

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Foreword

GB/T 28026 "Electrical safety, grounding and reflow of rail transit ground devices" is divided into three parts.

- Part 1. Electric shock protection measures;
- Part 2. Protective measures for stray currents in DC traction power supply systems;
- Part 3. Interaction of AC and DC traction power systems.

This part is the second part of GB/T 28026.

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

This part replaces GB/T 28026.2-2011 "railway ground equipment - Part 2. Straight current system stray current protection

Measures, compared with GB/T 28026.2-2011, the main technical changes are as follows.

- Added normative references GB/T 1402 and GB/T 28026.3-2018 (see Chapter 2);
- Modified terms and definitions, directly defined to reference GB/T 28026.1-2018 (see Chapter 3, Chapter 3 of the.2011 edition);
- Modified the range affected by stray currents (see Chapter 4, 4.3 of the.2011 edition);
- Modified important parameters affecting the magnitude of stray current (see 5.1, 5.1 of the.2011 edition);
- Revised the limit on the average value of the structure to ground potential during the peak period of transportation for metal reinforced concrete or metal structures, 100mV increased to.200mV (see 5.3,.2011 version 7.2.3);
- Revised the general requirements for the recirculation system (see 6.2.1,.2011 version 6.1);

---Modified the regulation of the track resistance and measures to reduce the longitudinal resistance of the rail (see 6.2.2, 6.1.2 of the.2011 edition);

--- Modified the requirements for return conductors (see 6.2.4, 5.5 of the.2011 edition);

--- Revised the relationship requirements for the reflow system and the ground-insulated device (see 6.2.6,.2011 edition of 6.2.1);

--- Revised "in the case of closed roadbed, the level of the road should be avoided, the conductivity is significantly higher than the conventional value of the track connection", and changed to

"In the case of closed roadbed, the conductivity at the level crossing should not be higher than the adjacent line" (see 6.1, 6.1.1.2 of the.2011 edition);

--- Revised the requirements for the insulation level of the track (see 6.7, 5.3 of the.2011 edition);

--- Revised the title of the article, "tunnel structure" was changed to "tunnel, bridge, viaduct and reinforced concrete track bed", and is described below

Expand the scope of application (see 7.2, 7.2 of the.2011 edition).

This section uses the redrafting method to modify the electrical safety, grounding and return of IEC 62128-2.2013 "railway ground devices".

Flow Part 2. Protective measures for stray current in DC traction power supply systems.

This section is structurally adjusted compared to IEC 62128-2.2013. The appendix is arranged in the order mentioned in the article. Appendix

A is adjusted to Appendix B, Appendix B is adjusted to Appendix C, and Appendix C is adjusted to Appendix A.

There are technical differences in this section compared to IEC 62128-2.2013, and the terms involved in these differences have been passed on the outside margins.

The vertical single line (|) of the position is marked. The specific technical differences and their causes are as follows.

---About the normative reference documents, this part has made technical adjustments to adapt to China's technical conditions, adjustments

The situation is reflected in Chapter 2, "Regulatory Citations", and the specific adjustments are as follows.

* Replace IEC 60850 with GB/T 1402 modified to international standards (see 6.2.6);

* Replace IEC 62128-1 with GB/T 28026.1-2018 modified to international standards (see Chapters 4, 6.2.1, 6.2.6,

6.5, 6.7, 7.2.3, 7.2.5, 7.4, Chapter 9);

* Replace IEC 62128-3 with GB/T 28026.3-2018 with international standards (see 6.4).

--- Modified the note as the text, as the note contains requirements (see 7.2.5).

This section has the following editorial changes compared to IEC 62128-2:2013.

--- Removed Note 1 (see 5.3);

--- Removed the note for the example (see Chapter 8);

--- Revised Table 1 of the reference EN50162:2004 to list Table A.1 directly in the text (see A.2);

--- Added the number of the formula in the appendix to facilitate the reference of the formula (see Appendix A, Appendix B).

1 Scope

This part of GB/T 28026 gives the requirements for stray current protection in DC traction power supply systems.

This section applies to all metallic fixtures inside the traction power supply system, and also applies to other rail traffic buried in the ground.

A metal part through which an electric current flows.

This section applies to all new DC power supply lines, as well as to existing electrified lines that need to consider the effects of stray currents.

Renovation of roads and existing lines.

Its scope of application includes.

---railway;

---guided public transport systems, such as. trams, elevated and underground railways, mountain railways, trolleybus systems and installations

Contact system or contact rail magnetic levitation system;

--- Material transportation system.

This section does not apply to.

--- Underground mine traction power supply system;

--- Cranes, rail transport platforms and similar transport equipment, temporary buildings (eg exhibition structure), because such facilities are currently not available

The precedent for powering the net, they are not affected by the traction power supply

system;

--- Suspension cable car;

--- Funicular railway.

This section does not stipulate maintenance procedures.

2 Normative references

The following documents are indispensable for the application of this document. For dated references, only dated versions apply to this article.

Pieces. For undated references, the latest edition (including all amendments) applies to this document.

GB/T 1402 rail transit traction power supply system voltage (GB/T 1402-2010, IEC 60850.2007, MOD)

GB/T 28026.1-2018 Electrical safety, grounding and recirculation of rail transit ground units - Part 1

(IEC 62128-1.2013, MOD)

GB/T 28026.3-2018 Electrical safety, grounding and recirculation of rail transit ground units - Part 3. AC and DC

Interaction of lead-in power supply systems (IEC 62128-3.2013, MOD)

3 Terms and definitions

The terms and definitions defined in GB/T 28026.1-2018 apply to this document.

4 Identification of hazards and risks

When the reflow system is not completely insulated from the ground, the DC traction power supply system can generate stray currents and relate to the internal and external rail transit.