

# INTERNATIONAL STANDARD

# NORME INTERNATIONALE



**Railway applications – Rolling stock – Electrical equipment in trolley buses –  
Safety requirements and current collection systems**

**Applications ferroviaires – Matériel roulant – Équipements électriques des  
trolleybus – Exigences de sécurité et systèmes de captage de courants**



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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

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# RAILWAY APPLICATIONS – ROLLING STOCK – ELECTRICAL EQUIPMENT IN TROLLEY BUSES – SAFETY REQUIREMENTS AND CURRENT COLLECTION SYSTEMS

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**In this Redline version, a vertical line in the margin shows where the technical content is modified by amendment 1. Additions are in green text, deletions are in strikethrough red text. A separate Final version with all changes accepted is available in this publication.**

International Standard IEC 63076 has been prepared by IEC technical committee 9: Electrical equipment and systems for railways.

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This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

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## RAILWAY APPLICATIONS – ROLLING STOCK – ELECTRICAL EQUIPMENT IN TROLLEY BUSES – SAFETY REQUIREMENTS AND CURRENT COLLECTION SYSTEMS

### 1 Scope

This document applies to electrical systems aboard vehicles of the trolley bus type, as defined in 3.1, fed with a nominal line voltage ( $U_n$ ) between 600 V DC and 750 V DC.

This document defines the requirements and constructional advice, especially to avoid electrical danger to the public and to staff. Where special requirements exist for trolley buses, advice is given for mechanical and functional safety, as well as for protection against fire.

This document covers vehicles intended for public transportation. This document applies to:

- trolley buses without on-board isolation interface from the contact line,
- buses with a current rail for guidance in the road surface,
- guided buses with bipolar roof current collectors.

This document does not apply to:

- a) electric driven vehicles fitted only with an internal power supply:
  - 1) hybrid vehicles,
  - 2) diesel-electric vehicles,
  - 3) fuel-cell vehicles,
  - 4) battery-powered vehicles,
- b) vehicles with safe protective bonding:
  - 1) rubber-tyred commuter trains,
  - 2) guided buses with power supplied by a separate current rail,
  - 3) rail-guided buses with unipolar roof current collector,
- c) vehicles operated outside publicly accessible areas:
  - 1) electrically driven lorries on motorways.

Guidance and current rails are special solutions and, at this time, are not subject to standardization, unlike trolley bus current collectors and overhead contact lines.

This document refers mainly to earthed networks, but reference is made also to galvanically insulated networks.

### 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 60077 (all parts), *Railway applications – Electric equipment for rolling stock*

IEC 60077-1, *Railway applications – Electric equipment for rolling stock – Part 1: General service conditions and general rules*