# IEC 62973-5

Edition 1.0 2023-08

# INTERNATIONAL STANDARD

# NORME INTERNATIONALE

colour inside

## Railway applications – Rolling stock – Batteries for auxiliary power supply systems –
## Part 5: Lithium-ion batteries

**Applications ferroviaires – Matériel roulant – Batteries pour systèmes d'alimentation auxiliaire –**
**Partie 5: Batteries lithium-ion**

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

| Draft | Report on voting |
|---|---|
| 9/2974/FDIS | 9/2995/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.

A list of all parts in the IEC 62973 series, published under the general title *Railway applications – Rolling stock – Batteries for auxiliary power supply systems*, can be found on the IEC website.

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

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# RAILWAY APPLICATIONS – ROLLING STOCK – BATTERIES FOR AUXILIARY POWER SUPPLY SYSTEMS –

## Part 5: Lithium-ion batteries

## 1 Scope

This part of IEC 62973 applies to lithium-ion batteries for auxiliary power supply systems used on rolling stock. This document specifies the requirements of the characteristics and tests for the lithium-ion cells, and supplements IEC 62973-1 which is applied to any rolling stock types (e.g. light rail vehicles, tramways, streetcars, metros, commuter trains, regional trains, high speed trains, locomotives, etc.).

Unless otherwise specified in this document, the requirements of IEC 62973-1 apply.

This document specifies the requirements of the interface between battery system including BMS and the converter.

This document is used in conjunction with generic IEC 62619 (safety requirements) and IEC 62620 (performance requirements) of lithium-ion cells and batteries used in industrial applications. This document specifies the requirements for railway rolling stock applications.

Such batteries for auxiliary power supply systems are also sometimes used for:

– occasional traction power for shunting in depot, or for rescue or emergency mode such as stop on third rail gaps;
– peak power shaving and engine starting.

If the nominal battery voltage exceeds the voltage specified in Table 1 of IEC 62973-1:2018, then IEC 62928 applies to the battery.

## 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 60077-1:2017, *Railway applications – Electric equipment for rolling stock – Part 1: General service conditions and general rules*

IEC 60721-4-1:2010, *Railway applications – Environmental conditions for equipment – Part 1: Equipment on board rolling stock*

IEC 60529:1989, *Degrees of protection provided by enclosures (IP Code)*
IEC 60529:1989/AMD1:1991
IEC 60529:1989/AMD2:2013

IEC 62619:2022, *Secondary cells and batteries containing alkaline or other non-acid electrolytes – Safety requirements secondary lithium cells and batteries for use in industrial applications*