



**International
Standard**

ISO 10924-5

Road vehicles — Circuit breakers —

Part 5:

**Circuit breakers with bolt with
rated voltage of 450 V**

Véhicules routiers — Coupe-circuits —

*Partie 5: Coupe-circuit moyen à boulon avec une tension
nominale de 450 V*

**Second edition
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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 22, *Road vehicles*, Subcommittee SC 32, *Electrical and electronic components and general system aspects*.

This second edition cancels and replaces the first edition (ISO 10924-5:2016), which has been technically revised.

The main changes are as follows:

— only editorial changes were made.

A list of all parts in the ISO 10924 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Road vehicles — Circuit breakers —

Part 5:

Circuit breakers with bolt with rated voltage of 450 V

1 Scope

This document specifies circuit breakers with a rated voltage of 450 V for use in road vehicles. It establishes, for this circuit breaker type, the rated current, test procedures, performance requirements and dimensions.

This document is intended to be used in conjunction with ISO 10924-1 and with ISO 10924-2. The numbering of its clauses corresponds to that of ISO 10924-1 whose requirements are applicable, except where modified by requirements particular to this document.

This document is applicable to circuit breakers with a rated voltage of 450 V (DC), a current rating of no greater than 300 A and a breaking capacity of 6 000 A.

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.

ISO 6722-1¹⁾, *Road vehicles — 60 V and 600 V single-core cables — Part 1: Dimensions, test methods and requirements for copper conductor cables*

ISO 8820-7²⁾, *Road vehicles — Fuse-links — Part 7: Fuse-links with tabs (Type G) with rated voltage of 450 V*

ISO 8820-8, *Road vehicles — Fuse-links — Part 8: Fuse-links with bolt-in contacts (Type H and J) with rated voltage of 450 V*

ISO 10924-1, *Road vehicles — Circuit breakers — Part 1: Definitions and general test requirements*

ISO 10924-2, *Road vehicles — circuit breakers — Part 2: Recommendations for users*

ISO 16750-4, *Road vehicles — Environmental conditions and testing for electrical and electronic equipment — Part 4: Climatic loads*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 10924-1 apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

1) Withdrawn document.

2) Withdrawn document.

4 Marking, labelling and colour coding

For details on how to mark, label and colour code X, see [Table 1](#) and ISO 10924-1.

Table 1 — Colour code

Rated current, I_R A	Colour code
15	blue
20	yellow
25	white (natural)
30	green
40	orange
50	red
60	blue
70	brown
80	black
100	blue
120	white
150	orange
200	blue
250	pink
300	grey

5 Tests and requirements

5.1 General

5.1.1 General test conditions

In addition to carrying out the test procedures in accordance with ISO 10924-1, the following criteria shall apply:

- tests shall be performed following the test sequence in [Table 2](#);
- the test fixture for electrical tests shall be designed in accordance with ISO 8820-8. The connection resistance shall be 1 mΩ max. to ensure the proper function of the test fixture. The ambient temperature range for circuit breakers according to this document shall be -40 °C to 85 °C, Code G, in line with ISO 16750-4.