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

GB/T 31465.2-2015

**Road vehicles -- Fuse-link -- Part 2: Users guide
(English Translation)**

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Table of Contents

Foreword...	3
1 Scope...	5
2 Normative References...	5
3 Terms and Definitions...	5
4 Rated Voltage...	5
5 Rated Current and Continuous Operating Current...	5
6 Cold-state Resistance...	6
7 Current and Conductor...	8
8 Current and Connecting Resistance...	8
9 Current and Ambient Temperature...	9
10 Circuit Protection, and Time-current Characteristic...	10
11 Selectivity...	11
12 Replacement of Fuse-link...	12
13 Voltage Surge at the Moment of Fuse-link Breaking...	12
14 Surge Resistance of Fuse-link...	12
Appendix A (Informative) Selection of Fuse-link Parameters...	13
Appendix B (Informative) Principle of Fuse-link and Wire Selection...	15

Foreword

GB/T 31465 Road Vehicles - Fuse-links includes the following 7 parts:

- Part 1: Definitions and General Test Requirements;
- Part 2: Users Guide;
- Part 3: Fuse-link with Blade Type;
- Part 4: Fuse-links with Female Contacts and Bolt-in Contacts;
- Part 5: Fuse-links with Axial Terminals (strip fuse-links);
- Part 6: Fuse-links with Bolt-in Contacts with High Voltage;
- Part 7: Fuse-links with Shortened Tabs.

This is the second part of GB/T 31465.

This Part was drafted in accordance with the rules in GB/T 1.1-2009.

The amendment of this Part adopts the Redrafting Law; the formulation of this Part adopts ISO 8820-2: 2005 Road Vehicles - Fuse-links - Part 2: User's Guide.

In comparison with ISO 8820-2, the technical differences and the causes for these differences are as follows:

---Appendix B adopts the latest version of the draft of ISO 8820-2. The selection process of Figure B.1 is added; the directive function of the standard is reinforced;

---Chapter 15 in the previous context does not contain any specific content; it is deleted in this Part;

---In the previous context, Appendix A is normative. However, it is not mentioned in the main body, but the scope. In addition, the content itself belongs to the nature of reference. Hence, it is modified into informative appendix in this Part.

Editorial modifications are as follows:

---Decimal point "." is used to replace comma ",", which is used as decimal point in the previous standard;

---The Foreword of the international standard is deleted;

---Word description or format of scope and definition is modified;

Road Vehicles - Fuse-link - Part 2: User's Guide

1 Scope

This Part of GB/T 31465 describes various aspects of factors that must be taken into consideration in the selection of fuse-links.

This Part is applicable to guidance for the selection and application of fuse links for road vehicles.

NOTE: in terms of parameter selection for fuse-links, for example, the selection of rated current and wire specifications, please refer to Appendix A and Appendix B.

2 Normative References

The following documents are indispensable to the application of this document. In terms of references with a specific date, only versions with a specific date are

applicable to this document. In terms of references without a specific date, the latest versions (including all the modification lists) are applicable to this document.

GB/T 31465.1 Road Vehicles - Fuse-link - Part 1: Definitions and General Test Requirements (GB/T 31465.1-2015, ISO 8820-1: 2008, MOD)

3 Terms and Definitions

Terms and definitions that are defined in GB/T 31465.1 are applicable to this document.

4 Rated Voltage

Fuse-link's rated voltage shall be more than the nominal voltage of vehicle's electrical system, so as to adapt to the overvoltage condition that might emerge.

5 Rated Current and Continuous Operating Current

Rated current (IR) is used to identify fuse-link's specifications.

The continuous operating current (IC) shown in Figure 1 is at the highest ambient temperature, the maximum current of continuous circuit (fuse-link, terminal, fuse holder and wire). Continuous operating current shall be smaller than the rated current.

Appendix A

(Informative)

Selection of Fuse-link Parameters

All parts of GB/T 31465 define basic requirements, rated voltage, rated current, and test methods for time-current characteristics of fuse-links, so as to provide comparable and reproduceable test results of fuse-links.

During the practical applicable, other parameters also need to be taken into consideration, so that fuse-links may be correctly selected. Parameters like:

- Continuous operating current and operating time;
- Short-circuit protection for one or multiple electrical/electronic devices;
- Connecting resistance;
- Wire types, such as different cross sections, lengths and insulations;
- Internal resistance of terminal, wire and electrical appliances;

- Voltage drop of various elements in the components;
- Short-circuit factors;
- Electrical appliances' surge current;
- Locked-rotor current;
- Different voltages, currents, systems and ambient temperatures;
- Fixture and electrical junction box;
- Fuse-link's installation direction and working environment, for example, engine, compartment or luggage compartment;
- The gap among fuse-links in electrical junction box;
- Environmental conditions (such as mechanical load, climate load and chemical load, etc.);
- Fuse-link's forced cooling;
- Other aspects.

It is suggested that users shall consult relevant manufacturers regarding the

- Whether this load current is continuous or pulse current;
- Whether high current surge exists while the switch is switched off;
- Whether the load current provided during vehicle operation is in short-term or long-term operation.

B.2.2.2 Determine ambient temperature for fuse-link installation

After determining the load current, the next step is to consider fuse-link's ambient temperature. Since fuse-link itself is a heating device, its working characteristics are under the influence of ambient temperature. Generally speaking, rated current and regular characteristics are measured at room temperature $[(23 \pm 5) ^\circ\text{C}]$. When the difference of ambient temperature is extremely large, fuse-link's rated current shall be re-calculated based on the manufacturer's characteristic curve.

B.2.2.3 In accordance with B.2.2.1 and B.2.2.2, determine fuse-link's rated current

Through the result obtained in B.2.2.1 and B.2.2.2, fuse-links which have correct rated