
Road vehicles — Fuse-links —

Part 9:

**Fuse-links with shortened tabs (Type
K)**

Véhicules routiers — Liaisons fusibles —

Partie 9: Liaisons fusibles à languettes raccourcies (Type K)
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ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

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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 documents 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).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

The committee responsible for this document is ISO/TC 22, *Road vehicles*, Subcommittee SC 3, *Electrical and electronic equipment*.

ISO 8820 consists of the following parts, under the general title *Road vehicles – Fuse-links*:

- *Part 1: Definitions and general test requirements*
- *Part 2: User's guide*
- *Part 3: Fuse-link's with tabs (blade type) Type C (medium), Type E (high current) and Type F (miniature)*
- *Part 4: Fuse-links with female contacts (Type A) and bolt-in contacts (Type B) and their test fixtures*
- *Part 5: Fuse links with axial terminals (Strip fuse-links) Type SF 30 and SF 51 and test fixture*
- *Part 6 Single-bolt fuse-links*
- *Part 7: Fuse-links with tabs (Type G) with rated voltage of 450 V*
- *Part 8: Fuse-links with bolt-in contacts (Type H and J) with rated voltage of 450 V*
- *Part 9: Fuse-links with shortened tabs (Type K)*

Road vehicles — Fuse-links —

Part 9: Fuse-links with shortened tabs (Type K)

1 Scope

This part of ISO 8820 specifies fuse-links with shortened tabs (Type K) for use in road vehicles. It establishes, for these fuse-link types, the rated current, test procedures, performance requirements, and dimensions.

This part of ISO 8820 is applicable to fuse-links with a rated voltage of 58 V, a current rating of ≤ 30 A, and a breaking capacity of 1 000 A intended for use in road vehicles.

This part of ISO 8820 is intended to be used in conjunction with ISO 8820-1 and ISO 8820-2. The numbering of clauses in this part of ISO 8820 corresponds to that of ISO 8820-1. This part of ISO 8820 includes additional or modified requirements that are intended to be applied in addition to those given in ISO 8820-1.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

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

ISO 8820-1, *Road vehicles — Fuse-links — Part 1: Definitions and general test requirements*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 8820-1 apply.

4 Marking, labelling and colour coding

Marking, labelling, and colour coding shall be in accordance with ISO 8820-1 and [Table 1](#).

Table 1 — Fuse-link colour coding

Current rating A	Colour
1	Black
2	Grey
3	Violet
4	Pink
5	Tan/Light brown
7,5	Brown
10	Red
15	Blue
20	Yellow
25	White ^a
30	Green

^a For transparent fuse bodies, "white" means no colour in the plastic material is added.

5 Tests and requirements

5.1 General

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In addition to carrying out the test procedures in accordance with ISO 8820-1, the following criteria shall apply.

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Tests shall be performed following the test sequences in [Table 2](https://standards.iteh.ai/catalog/standards/sis/d84d5300-a1a1-402b-bd9-37c87f717633/iso-8820-9-2014);

The test fixtures for electrical tests shall be designed in accordance with [Figure 1](#);

Fuse-links according to this part of ISO 8820 shall provide for visible evidence of an open fuse element.

5.1.1 Test sequence

Table 2 — Test sequence

No	Test		Clause	Sample groups ^a						
				1	2	3	4	5	6	7
1	Dimensions		6	X	X	X	-	-	-	-
2	Marking, labelling, and colour coding		4	X	X	X	X	X	X	X
3	Fuse-link voltage drop		5.2	X	X	X	-	-	-	-
4	Strength of terminals		5.8	X	X	X	-	-	-	-
5	Environmental conditions	Climatic load	5.4	-	-	-	X	-	-	-
		Chemical load		-	-	-	-	X	-	-
		Mechanical load		-	-	-	-	-	X	-
6	Transient current cycling		5.3	-	-	-	-	-	-	X
7	Fuse-link voltage drop		5.2	-	-	-	X	X	X	X
8	Current steps		5.6	-	-	X	-	-	-	-
9	Breaking capacity		5.7	X	-	-	-	-	-	-
10	Operating time rating test	1,1 I _R	5.5	-	X	-	X	X	X	X
		1,35 I _R		-	Y	-	Y	Y	Y	Y
		1,6 I _R		-	Y	-	Y	Y	Y	Y
		2 I _R		-	Y	-	Y	Y	Y	Y
		3,5 I _R		-	Y	-	Y	Y	Y	Y
6 I _R	-	Y	-	Y	Y	Y	Y			
11	Strength of terminals		5.8	X	X	X	X	X	X	X

Y For these operating time tests, the sample groups 2, 4, 5, 6, and 7 shall be divided equally; these fuse-links are intended to be subjected to a single operating time test only.

- Not required.

^a Each sample group should contain a minimum of 10 fuse-links for each current rating.

5.1.2 Test cable sizes

Test cable sizes shall be as given in Table 3. All tests for a particular fuse-link rating shall be performed using the same cable size.

Test cable sizes are specified to allow comparative fuse-link tests to be carried out. The cable size specified herein does not necessarily indicate the size of cable to be used in the vehicle application.

Table 3 — Test cable sizes

Rated current I_R A	Conductor cross-sectional area ^a mm ²	Length mm
1	0,35	500 ± 50
2		
3		
4		
5	0,5	
7,5	0,75	
10	1,0	
15	1,5	
20	2,5	
25		
30	4,0	

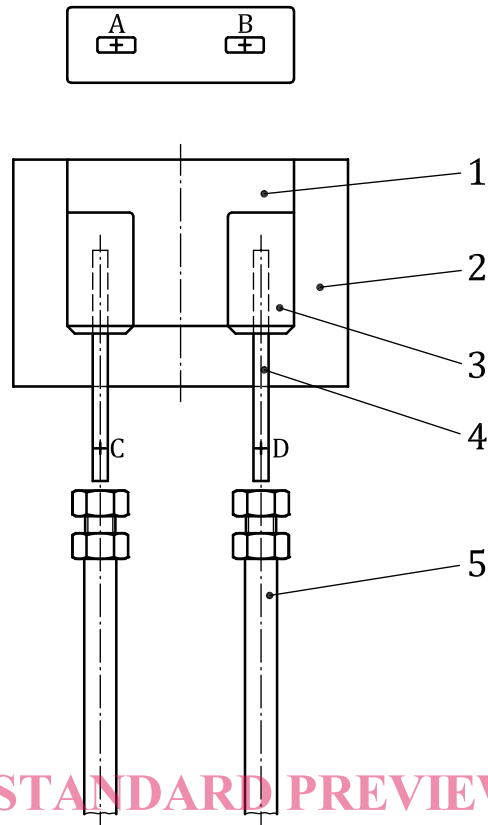
^a Conductor material according ISO 6722-1.

5.2 Voltage drop and connection resistance

5.2.1 Test

The voltage drop U_{AB} shall be measured at points A and B across the fuse-link tabs as shown in [Figure 1](#). The connection resistance shall be measured at the points A, C and B, D.

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Key

- 1 fuse-link
- 2 test fixture
- 3 fuse blade
- 4 test clip (as defined in [Table 9](#))
- 5 cable size according to [Table 3](#)

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NOTE 1 Points A and B are the measuring points for the voltage drop.

NOTE 2 Points A, C and B, D are the measuring points for connection resistance.

Figure 1 — Test schematic (type K)

5.2.2 Requirements

The requirements shall be in accordance with [Table 4](#).