

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Specification for high-voltage fuse-links for motor circuit applications

Spécification relative aux éléments de remplacement à haute tension destinés à des circuits comprenant des moteurs



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IEC 60644

Edition 2.0 2009-08

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INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

COMMISSION
ELECTROTECHNIQUE
INTERNATIONALE

PRICE CODE
CODE PRIX

M

ICS 29.120.50

ISBN 2-8318-1057-5

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**SPECIFICATION FOR HIGH-VOLTAGE FUSE-LINKS
FOR MOTOR CIRCUIT APPLICATIONS**

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International Standard IEC 60644 has been prepared by subcommittee 32A: High voltage fuses, of IEC technical committee 32: Fuses

This second edition cancels and replaces the first edition, published in 1979, and constitutes a technical revision.

The main changes with regard to the previous edition concern the following:

- update of the normative references;
- renewal of the figures.

The text of this standard is based on the following documents:

CDV	Report on voting
32A/267/CDV	32A/270/RVC

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

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

The committee has decided that the contents of this publication will remain unchanged until the maintenance result date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

SPECIFICATION FOR HIGH-VOLTAGE FUSE-LINKS FOR MOTOR CIRCUIT APPLICATIONS

1 Scope

This standard applies primarily to fuse-links used with motors started direct-on-line on alternating current systems of 50 Hz and 60 Hz.

NOTE When motors are used with assisted starting this specification can also be applied but particular attention should be paid to the selection of the rated current of the fuse-link (see 8.1) and the manufacturer of the fuse-link should preferably be consulted.

Fuse-links according to this specification are intended to withstand normal service conditions and motor starting pulses. They should comply with the requirements of IEC 60282-1.

The purpose of this standard is to standardize time-current characteristics, to formulate pulse withstand requirements regarding testing and to give guidance regarding the selection of fuse-links intended to be used with motors.

2 Normative references

The following referenced documents are indispensable for the application 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 60282-1:2005, *High-voltage fuses – Part 1: Current-limiting fuses*

3 Fuse-link time-current characteristics

Compared to fuses typically used for distribution system protection, fuses for motor circuit protection should have:

- relatively high melting current (slow operation) in the 10 s region of the pre-arcing time-current characteristic to give maximum withstand against motor starting current;
- relatively low melting current (fast operation) in the region below 0,1 s to give maximum short-circuit protection to associated switching devices, cables and motors and their terminal boxes.

Therefore pre-arcing time-current characteristics of fuse-links for motor circuit applications shall be within the following limits:

$$I_{f10} / I_n \geq 3 \quad \text{for} \quad I_n \leq 100$$

$$I_{f10} / I_n \geq 4 \quad \text{for} \quad I_n > 100$$

$$I_{f0,1} / I_n \leq 20 (I_n / 100)^{0,25} \quad \text{for all current ratings}$$

where

I_n is the numerical value of the current rating, expressed in amperes, of the fuse-link;