AS/NZS 61459:2000
IEC 61459:1996

Australian/New Zealand Standard™

Low-voltage fuses—Coordination between fuses and contactors/ motor-starters—Application guide

Standards Australia

STANDARDS NEW ZEALAND

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee EL/7, Power Switchgear. It was approved on behalf of the Council of Standards Australia on 2 June 2000 and on behalf of the Council of Standards New Zealand on 24 November 2000. It was published on 6 December 2000.

The following interests are represented on Committee EL/7:

Australasian Railway Association
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This Standard was issued in draft form for comment as DR 99416.

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First published as AS/NZS 61459:2000

Jointly published by Standards Australia International Ltd, GPO Box 5420, Sydney, NSW 2001 and Standards New Zealand, Private Bag 2439, Wellington 6020

ISBN 0 7337 3486 3

PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee EL/7, Power Switchgear.

The objective of this Standard is to provide guidance in the selection of fuse-links to ensure coordination with contactors or motor-starters (contactors with overload relay).

This Standard is identical with and has been reproduced from IEC 61459:1996, *Low-voltage fuses–Coordination between fuses and contactors/motor-starters–Application guide*.

A reference to an International Standard identified in the 'Reference documents' clause by strikethrough (~~example~~) is replaced by a reference to the Australian or Australian/New Zealand Standard(s) listed immediately thereafter and identified by shading (example). Where the struck-through referenced document and the referenced Australian or Australian/New Zealand Standard are identical, this is indicated in parenthesis after the title of the latter.

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The term ‘informative’ has been used in this Standard to define the application of the annex to which it applies. An ‘informative’ annex is only for information and guidance.

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Any IEC table, figure or passage of text that is struck-through is not part of this Standard. Any Australian/New Zealand table, figure or passage of text that is added (and identified by shading) is part of this Standard.

1 Scope

The information given in this technical report provides guidance to assist in selecting a fuse-link to ensure coordination with contactors or motor-starters (contactors with overload relay).

The coordination between motor-starters and the fuses which protect them is covered in IEC standards by test requirements such as those in IEC 60947, in particular parts 1 and 4.

Overcurrent protection of other equipment, such as motors, conductors, etc., is not covered by this technical report.

Tests are specified at three levels of prospective current, according to IEC 60947-4-1:

a) in the region of the current I_c (see clause 5). Tests are made at 0,75 I_c when the starter shall disconnect the current without damage and the fuse does not operate, and at 1,25 I_c when the fuse shall operate before the starter (see annex A, figure A.1);

b) at the appropriate value of prospective current "r" shown in IEC 60947-4-1, table XI (see table A.1 in annex A);

c) at the rated conditional short-circuit current I_q, if higher than the test current "r".

The fuse selected is capable of absorbing the surge of current on starting the motor and is normally selected from the recommendations of the manufacturer or by compliance with national installation codes and wiring rules.

Studies carried out by IEC committee "Fuses" in collaboration with motor-starter manufacturers worldwide have revealed that there is no major difficulty in achieving satisfactory coordination at the most exacting of the levels of type of coordination using selected fuses according to IEC 60269-2 in coordination with modern contactors. A survey is presented in annex B of the rated currents, I^2t values and cut-off currents of fuses correctly chosen according to the ratings of the starters they protect, based on the results of successful type testing throughout the world.

Examples of suitable fuse-links used for motor protection are also given in annex B.