AS 2024—1991

Australian Standard®

High voltage a.c. switchgear and controlgear–Switch–fuse combinations

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Australian–British Chamber of Commerce

Australian Electrical and Electronic Manufacturers Association

Confederation of Australian Industry

Electricity Supply Association of Australia

Institution of Engineers, Australia

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PREFACE

This Standard was prepared by the Standards Australia Committee on Power Switchgear to supersede AS 2024–1977, *High voltage fuse/switch combinations and fuse/circuit–breaker combinations*.

This Standard covers only switch–fuse combinations in which fuse strikers cause the switch to open when a fuse operates.

It does not cover fuse circuit–breaker combinations.

This Standard is based on IEC document 17A(Central Office)209, Draft–Revision of IEC Publication 420: *High–voltage alternating current switch–fuse combinations*, but incorporates significant editorial and technical amendments including the specification of much higher prospective TRV for Test Duties 4 and 5 and the deletion of restrictions on the selection of fuse–links in the IEC Standard to enable the interruption of transformer currents due to a short–circuit on the secondary.

Where this Standard deviates technically from IEC document 17A (Central Office)209 by way of different or additional requirements a rule is drawn in the margin against the clause or table, or part thereof, affected. These deviations are summarized in Appendix C.

It is intended to be read in conjunction with AS 2650, *High voltage A.C. switchgear and controlgear– Common requirements*, and the clause numbering herein follows that of AS 2650.

This Standard makes reference to the application guide in IEC 282–1 and to IEC 787. However, after publication, reference should be made instead to AS 1033.3, *High voltage fuses* (*for rated voltages exceeding 1000 V*) Part 3: *Application guide*.

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High voltage a.c. switchgear and controlgear—Switch-fuse combinations

1 SCOPE AND GENERAL

1.1 Scope This Standard specifies requirements for three-pole switch-fuse combinations having rated voltages above 1 kV and up to but not including 52 kV, for use on 50 Hz three-phase a.c. systems.

It covers functional assemblies of switches or switch-disconnectors complying with AS 1025.1 in combination with current-limiting fuses complying with AS 1033.2, with strikers, which together are able to interrupt currents up to the rated short-circuit breaking current of the switch-fuse combination as follows:

(a) The fuses extend the short-circuit rating of the combination beyond that of the switch alone. The fuse strikers cause all poles of the switch to open when a fuse element melts.

(b) The switch of a switch-fuse combination may, in addition to the fuse strikers, be operated by either an overcurrent release or a shunt release.

This Standard covers combinations forming part of ring main units.

This Standard does not cover switch-fuse units with dependent manual operation, fuse-circuit-breakers, switch-fuse units specially designed for motor circuit applications, e.g. with special overload requirements, switch-fuse units for switching capacitor banks, or combinations of a switch and fuses in which all poles of the switch are not caused to open by the operation of a fuse striker.

NOTES:

1. Switch-fuse combinations are subsequently referred to as 'combinations' in this Standard.
2. The term 'fuse' used in this Standard may designate either a fuse or a fuse-link where it does not result in ambiguity in the meaning of text.
3. Switches in combinations need not comply with the short-circuit making requirements of AS 1025.1 for compliance with this Standard when the current limiting effects of the fuse-links are taken into account.
4. Earthing switches complying with AS 1306 may, in addition, form part of a combination. However if the earthing switch is required to have a short-circuit making current, its rated making current needs to be verified by test in accordance with AS 1025.1.

1.2 Application This Standard has to be read in conjunction with AS 2650. Its clauses are aligned with the clause numbers and headings in AS 2650 and the application of the specific requirements of AS 2650 is stated throughout this Standard.

1.3 Referenced documents The following documents are referred to in this Standard:

AS	
1025	High voltage a.c. switchgear and controlgear—Switches and switch-disconnectors
1025.1	Part 1: For rated voltages above 1 kV and less than 52 kV
1033	High voltage fuses (for rated voltages exceeding 1000 V)
1033.1	Part 1: Expulsion type
1033.2	Part 2: Current-limiting (powder-filled) type
1265	Bushings for alternating voltages above 1000 V
1306	High voltage a.c. switchgear and controlgear—Disconnectors (isolators) and earthing switches
1852	International electrotechnical vocabulary
1852(441)	Switchgear, controlgear and fuses
2006	High voltage a.c. switchgear and controlgear—Circuit-breakers for rated voltages above 1000 V
2086	High voltage a.c. switchgear and controlgear—Metal-enclosed—Rated voltages above 1 kV up to and including 72.5 kV
2264	High voltage a.c. switchgear and controlgear—Insulation-enclosed for rated voltages above 1 kV up to and including 36 kV
2650	High voltage a.c. switchgear and controlgear—Common requirements
2752	Preferred numbers and their use
IEC	
282	High voltage fuses
282-1	Part 1: Current limiting fuses
787	Application guide for the selection of fuse-links of high-voltage fuses for transformer applications