Australian Standard®

SEPARABLE INSULATED CONNECTORS FOR POWER DISTRIBUTION SYSTEMS ABOVE 1 kV

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Australian-British Trade Association

Australian Electrical and Electronic Manufacturers Association

Confederation of Australian Industry

Electricity Supply Association of Australia

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PREFACE

This standard was prepared by a special Working Group of the Association's Committee on Power Switchgear, following a request from the Electricity Supply Association of Australia.

It applies to a simple and relatively inexpensive method of connection and switching of transformers and other electrical equipment in distribution systems using special flexible cable connectors.

The separable connectors covered by this standard are intended for use only as a part of a fully protected distribution system.

This standard illustrates a number of suitable connection interfaces, and users and manufacturers are encouraged to adopt the interface designs shown. However, connectors with interfaces different from those shown in this standard may be in the course of development.

A recent revision document for ANSI/IEEE Standard 386—1977 was used as the basis for this standard and acknowledgement is made of the assistance received therefrom.

Owing to the fact that separable insulated connectors imported into Australia are manufactured to comply with requirements specified in the country of manufacture and may not be available in a form to comply with all the requirements of AS 1824, Insulation Coordination, certain exemptions are permitted in this standard subject to the agreement of the purchaser.

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STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard

for

SEPARABLE INSULATED CONNECTORS FOR POWER DISTRIBUTION SYSTEMS ABOVE 1 kV

SECTION 1. SCOPE AND GENERAL

1.1 SCOPE. This standard specifies requirements for load-break and dead-break separable insulated connectors and ancillary equipment for use on power distribution systems at alternating voltages above 1 kV.

The standard applies to separable insulated connectors rated at not more than 1250 A.

NOTE: Load-break connectors are available only for the lower current ratings. The purchaser should obtain information from manufacturers on available current ratings.

1.2 REFERENCED DOCUMENTS. The following documents are referred to in this standard:

AS 1018 Recommendations for Partial Discharge Measurements

AS 1429 Polymeric Insulated Cables for Electricity Supply at Working Voltages 1.9/3.3 kV Up to and Including 19/33 kV
Part 1— Cables Having Individual Screened Cores

AS 1931 High Voltage Testing Techniques
Part 1— General Definitions, Test Requirements, Test Procedures and Measuring Devices

IEEE 592 Exposed Semiconducting Shields on Premoulded High Voltage Cable Joints and Separable Insulated Connectors

1.3 SERVICE CONDITION

1.3.1 Normal Service Conditions. Connectors complying with this standard are suitable for use in clean air and exposure to direct sunlight, under the following conditions:

(a) The ambient air temperature does not exceed 40°C, and its average value measured over a period of 24 h does not exceed 35°C.

(b) The ambient air temperature is not less than −10°C.

(c) The maximum temperature due to sunlight does not exceed an equivalent black body temperature of 80°C.

NOTE: For practical purposes this is equivalent to 1.1 kW/m^2.

(d) The altitude does not exceed 1000 m.

(e) The ambient air is not materially polluted by dust, smoke, corrosive or flammable gases and vapours or salt.

NOTE: Sudden drops of temperature of up to 20°C in a period of 20 min and the presence of rain and condensation should be taken into account.

1.3.2 Special Service Conditions.

1.3.2.1 *General*. The use of connectors under special service conditions shall be subject to agreement between the purchaser and manufacturer.

1.3.2.2 *Unusual environments*. Connectors may become buried in earth or immersed in water. For this reason, an accelerated sealing life test is specified in Clause 7.13.

NOTE: This Clause does not imply that connectors may be operated submerged under conditions where the interfaces could become wet or contaminated.

1.3.3 *Altitudes above 1000 m*. Where connectors are required for use at altitudes above 1000 m, one or other of the following procedures shall be adopted:

(a) The test voltages for such installations shall be determined by multiplying the rated withstand voltages given in Table 3.1 by the appropriate factor given in column 2 of Table 1.1.

(b) Connectors may be selected having a rated voltage which, when multiplied by the appropriate correction factor given in column 3 of Table 1.1, is not lower than the system voltage.

TABLE 1.1

ALTITUDE CORRECTION FACTOR

1	2	3
Maximum altitude m	**Correction factor for test voltages referred to sea level**	**Correction factor for rated voltages**
1000	1.0	1.0
1500	1.05	0.95
3000	1.25	0.80

NOTE: For altitudes between 1000 m and 1500 m, and between 1500 m and 3000 m, the correction factors may be obtained by linear interpolation.