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Australian Standard 2086—1984

HIGH-VOLTAGE A.C. SWITCHGEAR AND CONTROLGEAR—

METAL-ENCLOSED—RATED VOLTAGES ABOVE 1 kV UP TO AND INCLUDING 72.5 kV

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AUSTRALIAN STANDARD

HIGH-VOLTAGE A.C. SWITCHGEAR AND CONTROLGEAR—

METAL-ENCLOSED—RATED VOLTAGES ABOVE 1 kV UP TO AND INCLUDING 72.5 kV

AS 2086—1984

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PREFACE

This edition of this standard was prepared by the Association's Committee on Power Switchgear to supersede AS 2086—1977, Metal-enclosed Switchgear and Controlgear for Rated Voltages above 1 kV up to and including 72.5 kV.

It is based on the 1981 edition of IEC 298 and closely follows the editorial format of AS 2650. The clause numbering is generally in line with the clauses in IEC 298.

This standard is intended to be read in conjunction with AS 2650, as in general, the clauses herein refer to, modify or supplement the corresponding clauses of AS 2650. Clauses having numbers with a component part of 101 or greater are specific to this standard only. Where clauses in AS 2650 apply without amendment in this standard they are listed in bold in the contents.

Where this standard deviates technically from IEC 298 by way of additional or different requirements, this fact is indicated by a rule in the margin against the clause, table, or part thereof, affected. A summary of technical variations between this standard and IEC 298 is given in the Annex.

In line with the 1981 edition of IEC 298 and AS 2650, this edition of this standard differs considerably from the 1977 edition and includes provisions covering the degree of protection against the effects of arcing due to internal fault.

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NOTE: The listing of clauses in **bold** below indicates that those clauses in AS 2650 apply without amendment in this standard.

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Australian Standard

for

HIGH-VOLTAGE A.C. SWITCHGEAR AND CONTROLGEAR—METAL-ENCLOSED—RATED VOLTAGES ABOVE 1 kV UP TO AND INCLUDING 72.5 kV

1. SCOPE AND GENERAL

1.1 SCOPE. This standard specifies requirements for factory-assembled metal-enclosed switchgear and controlgear for alternating current of rated voltages above 1 kV and up to and including 72.5 kV for indoor and outdoor installation, and for service frequencies up to and including 60 Hz.

Metal-enclosed switchgear and controlgear for special use, for example in flammable atmospheres, in mines or on board ships, may be subject to additional requirements.

This standard does not deal with components contained in metal-enclosed switchgear and controlgear for which individual specifications exist, nor does it apply to switchgear and controlgear assemblies having an insulation enclosure (see AS 2264).

NOTE: While this standard also covers metal-enclosed switchgear and controlgear of which the insulation is an insulating gas other than air at atmospheric pressure, additional requirements for such equipment may apply depending upon its design (see AS 2263).

1.2 APPLICATION. This standard should be read in conjunction with AS 2650.

1.3 REFERENCED DOCUMENTS. The following standards are referred to in this standard:

AS 1018	Recommendations for Partial Discharge Measurements
AS 1255	Methods of Test for Electrical Characteristics of Solid Plastics Insulating Materials 1255.3 Method 3—Determination of Electric Strength at Power Frequencies
AS 1265	Bushings for Alternating Voltages above 1000 V
AS 1306	High Voltage Isolators (Disconnectors) and Earthing Switches*
AS 1824	Insulation Coordination*
AS 1852	International Electrotechnical Vocabulary 1852(441)—Switchgear and Controlgear
AS 1939	Classification of Degrees of Protection Provided by Enclosures for Electrical Equipment
AS 2006	High Voltage Alternating Current Circuit-breakers
AS 2263	Metal-enclosed Switchgear for Rated Voltages of 72.5 kV and Above*
AS 2264	Insulation-enclosed Switchgear and Controlgear for Rated Voltages above 1 kV up to and including 36 kV*
AS 2467	Maintenance of Electrical Switchgear
AS 2650	High Voltage A.C. Switchgear and Controlgear—Common Requirements
AS K185	Colours for Specific Purposes
IEC 466	High Voltage Insulation-enclosed Switchgear and Controlgear.

2. SERVICE CONDITIONS

2.1 NORMAL AND SPECIAL SERVICE CONDITIONS. Unless otherwise specified in this standard, the metal-enclosed switchgear and controlgear is designed to be used under normal service conditions.

Clause 2 of AS 2650 applies with the following modifications:

(a) For indoor installation it is assumed that inside the enclosure the humidity may attain high values, but condensation on the equipment does not normally occur.

(b) For outdoor installation, it is assumed that inside the enclosure normal indoor conditions prevail. If necessary, appropriate measures shall be taken, such as air conditioning, so that common indoor components may be used.

3. DEFINITIONS

3.1 GENERAL. For the purposes of this standard, the definitions in AS 1852 (441) and in Clause 3 of AS 2650 apply. Additional terms used in this standard are defined below.

3.101 Switchgear and controlgear—a general term covering switching devices and their combination with associated control, measuring, protective and regulating equipment, also assemblies of such devices and equipment with associated interconnections, accessories, enclosures and supporting structures.

3.102 Metal-enclosed switchgear and controlgear—switchgear and controlgear assemblies with an external metal enclosure intended to be earthed and complete except for external connections.

NOTE: The metal-enclosed switchgear and controlgear is subdivided into three types—

(a) metal-clad switchgear and controlgear;

(b) compartmented switchgear and controlgear (with one or more non-metallic partitions); and

(c) cubicle switchgear and controlgear.

3.102.1 *Metal-clad switchgear and controlgear*—metal-enclosed switchgear and controlgear in which components are arranged in separate compartments with metal partitions intended to be earthed.

*In course of revision.