

Australian Standard®

**ELECTRICAL EQUIPMENT FOR
COAL MINES—**

**EXPLOSION-PROTECTED
DISTRIBUTION AND CONTROL
BOXES FOR VOLTAGES UP TO
3300 V A.C.**

This Australian standard was prepared by Committee EL/23, Electrical Equipment in Coal Mines. It was approved on behalf of the Council of the Standards Association of Australia on 9 September 1986 and published on 3 November 1986.

The following interests are represented on Committee EL/23:

Australian Coal Association
Australian Electrical and Electronic Manufacturers Association
Confederation of Australian Industry
Department of Industrial Relations, NSW
Department of Mines, QLD
Elcom Collieries, NSW
Institute of Mining Electrical and Mining Mechanical Engineers
Joint Coal Board
Queensland Confederation of Industry
University of Newcastle

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This standard was issued in draft form for comment as DR 84272.

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First published	1972
Second edition	1983
Third edition	1986

PUBLISHED BY STANDARDS AUSTRALIA
(STANDARDS ASSOCIATION OF AUSTRALIA)
1 THE CRESCENT, HOMEBUSH, NSW 2140

PREFACE

This standard was prepared by the Association's Committee on Electrical Equipment in Coal Mines to supersede AS 1039—1983, Electrical Equipment for Coal Mines—Flameproof Distribution and Control Boxes for Voltages up to 1100 V a.c. It is intended for the guidance of manufacturers, users, regulatory authorities and associated interests and for use with other Australian standards and relevant mining regulations.

The purpose of the standard is to establish requirements for a form of enclosed electrical equipment for use in flammable or explosive atmospheres, i.e. for explosion protected distribution and control boxes associated with electrical equipment, in coal mines.

Major changes made in this edition are the inclusion of equipment up to 3300 V a.c., (previously 1100 V a.c.) and the use of the term 'explosion-protected' equipment which more readily describes the type of equipment to users. Various technical changes have been made throughout to line up with the techniques currently in use in the industry and the design and construction requirements have been reorganized and expanded to include more specific items.

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STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard

for

**ELECTRICAL EQUIPMENT FOR COAL MINES—
EXPLOSION-PROTECTED DISTRIBUTION AND CONTROL BOXES FOR VOLTAGES
UP TO 3300 V A.C.**

SECTION 1. SCOPE AND GENERAL

1.1 SCOPE. This standard specifies requirements for multiple-outlet or single-outlet explosion-protected distribution and control boxes (hereinafter referred to as 'DCB') designed for use with a.c. voltages up to 3300 V, in the coalmining industry.

NOTE: Appendix A sets out information to be specified by the purchaser with an enquiry or order.

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

AS 1029	Low Voltage Contactors Part 1—Electromechanical—Up to and Including 1000 V a.c. and 1200 V d.c.	AS 2067	Switchgear Assemblies and Ancillary Equipment for Alternating Voltages above 1 kV
AS 1042	Direct-acting Indicating Electrical Measuring Instruments and their Accessories	AS 2081	Earth-fault Protection, Monitoring and Current Limitation Equipment for Use in Coal Mines and Shale Mines
AS 1147	Plastics Insulating Materials of Mouldings for Cable Connecting Devices for Use in Coal Mines	AS 2184	Low Voltage Switchgear and Control gear—Moulded-case Circuit-breakers for Rated Voltages up to and including 600 V a.c. and 250 V d.c.
AS 1299	Electrical Equipment for Coal Mines—Flameproof Restrained Plugs and Receptacles	AS 2374	Power Transformers Part 1—General Requirements
AS 1300	Electrical Equipment for Coal Mines—Bolted Flameproof Cable Coupling Devices	AS 2480	Electrical Equipment for Explosive Atmospheres—Flameproof Enclosure—Type of Protection d
AS 1675	Current Transformers for Measurement and Protection	AS 2536	Surface Texture
AS 1740	Electrical Equipment for Coal Mines—Transformer Substations for Use Underground	AS 2595	Electrical Equipment for Coal Mines—Electrical Requirements for Underground Mining Machines and Accessories Part 1—Equipment for Use in Explosive Atmospheres
AS 1802	Reeling and Trailing Electric Cables for Underground Coal Mining Purposes	AS 3000	SAA Wiring Rules
AS 1828	Electrical Equipment for Explosive Atmospheres—Cable Glands	AS 3100	Approval and Test Specification for Definitions and General Requirements for Electrical Materials and Equipment
AS 1864	High Voltage Alternating Current Contactors	AS 3111	Approval and Test Specification for Miniature Overcurrent Circuit Breakers
AS 1930	Circuit-breakers for Distribution Circuits (up to and including 1000 V a.c. and 1200 V d.c.)	AS 3135	Approval and Test Specification for Semi-enclosed Fuses for a.c. Circuits
AS 1931	High Voltage Testing Techniques Part 1—General Definitions, Test Requirements, Test Procedures and Measuring Devices Part 2—Application Guide for Measuring Devices	1.3 DEFINITIONS.	For the purpose of this standard, the following definitions apply:
AS 1972	Cables for Use Below Ground in Coal Mines (other than Trailing Cables)	1.3.1 Access cover	—cover which provides access to electrical equipment that—
AS 2006	High Voltage Alternating Current Circuit-breakers	(a)	may require adjustment or alteration;
		(b)	is used to make and break load current under normal conditions; and
		(c)	requires frequent removal or opening of the cover for maintenance.
		1.3.2 Adaptor	—device designed to connect a cable coupling to apparatus in such a manner as will form a flameproof enclosure. It may be either attached to or integral with the apparatus.
		1.3.3 Approved	—means approved by the relevant Regulatory Authority.
		1.3.4 Automatic control	—control by means of any device other than a manually operated switch or control button.