Australian Standard®

LOW VOLTAGE CONTACTORS

Part 1—ELECTROMECHANICAL—UP TO AND INCLUDING 1000 V a.c. AND 1200 V d.c.

[Title allocated by the Defence Cataloguing Authority: CONTACTOR, ELECTROMECHANICAL, (Up to 1000 V a.c. or 1200 V d.c.)]

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The following interests are represented on Committee EL/6:

Australian Electrical and Electronic Manufacturers Association
Australian-British Chamber of Commerce
Bureau of Steel Manufacturers of Australia
Confederation of Australian Industry
Department of Defence
Department of Defence Support
Electrical Contractors Associations of Australia
Electricity Supply Association of Australia
Institution of Engineers Australia
Metropolitan Water Sewerage and Drainage Board, Sydney
Railways of Australia Committee

Representatives of the following interests also participated in the drafting of this standard:

Department of Public Works, N.S.W.
State Rail Authority of New South Wales

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PREFACE

This edition of this standard was prepared by the Association's Committee on Industrial Switchgear and Controlgear to supersede AS 1029, Part 1—1982, Low Voltage Contactors—Electromechanical (Up to and Including 1000 V a.c.).

This standard closely follows IEC 158—1 with its supplements 158—1A, 158—1B and 158—1C which cover both a.c. and d.c. electromechanical contactors.

This standard differs from the 1982 edition in the following respects:

(a) The title and scope now reflect that it covers both a.c. and d.c. electromechanical contactors.

(b) A number of requirements in the 1982 edition which differed from IEC 158—1 are considered to be no longer appropriate and in consequence are no longer included herein. In particular, following the breaking capacity test, contactors are no longer required to withstand the full dielectric test voltage, a condition considered too onerous for many contactors of modern design.

Where this standard deviates technically from the IEC a rule is shown in the margin alongside the clause, table or part thereof affected and such deviations are summarized in the Annex.

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Part 1—ELECTROMECHANICAL (UP TO AND INCLUDING 1000 V a.c. AND 1200 V d.c.)

SECTION 1. SCOPE AND GENERAL

1.1 SCOPE. This standard applies to electromechanical type contactors for industrial use, intended for closing and opening electric circuits and, where combined with suitable relays, for protecting these circuits against operating overloads.

It applies only to contactors, the main contacts of which are intended to be connected to circuits where the voltage does not exceed 1000 V a.c. or 1200 V d.c.

The standard also applies to the electromechanical part of hybrid semiconductor (solid state) contactors which comply with AS 1029, Part 2 for voltages up to and including 1000 V a.c. and 1500 V d.c.

There may be arduous service conditions which are not represented by the test requirements of this standard and the use of electromechanical contactors for such purposes shall be subject to the manufacturer's recommendations (see the Note 1 to Clause 4.3.7).

NOTES:

1. For electromechanical contactors with a rated voltage exceeding 1000 V a.c., see AS 1864.
2. Contactors which are intended to provide short-circuit protection must additionally satisfy the relevant conditions specified for circuit-breakers (see AS 1930, AS 2184 and AS 3111).
3. Where contactors are used in motor starters, reference should also be made to AS 1202.
4. Information to be supplied by the purchaser is listed in Appendix A.

1.2 OBJECTS. The objects of this standard are to state —

(a) the characteristics of contactors;

(b) the conditions with which contactors must comply with reference to —

  (i) their operation and behaviour;

  (ii) their dielectric properties;

  (iii) the degrees of protection provided by their enclosures;

(c) the tests intended for confirming that these conditions have been met and the methods to be adopted for these tests; and

(d) the data to be marked on the apparatus.

NOTE: This standard does not include all the electrical safety requirements with which compliance may be necessary to secure approval for installation of contactors.

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

AS 1029	Low Voltage Contactors Part 2—Semiconductor (Solid State) (Up to and Including 1000 V a.c. and 1500 V d.c.)
AS 1136	Switchgear and Controlgear Assemblies for Voltages Up to 1000 V a.c.
AS 1202	A.C. Motor Starters (Up to and Including 1000 V) Part 1— Direct-on-line (Full Voltage) Starters
AS 1864	High Voltage Alternating Current Contactors
AS 1930	Circuit-breakers for Distribution Circuits (Up to and Including 1000 V a.c. and 1200 V d.c.)
AS 1939	Classification of Degrees of Protection Provided by Enclosures for Electrical Equipment
AS 2184	Moulded-case Circuit-breakers (Up to and Including 600 V a.c. and 250 V d.c.) (Interrupting Rating 10 kA and More)
AS 3100	Approval and Test Specification for Definitions and General Requirements for Electrical Materials and Equipment
AS 3111	Approval and Test Specification for Miniature Overcurrent Circuit-breakers
AS C320	Classification of Insulating Materials for Electrical Machinery and Apparatus on the Basis of Thermal Stability in Service
SAA MP19	Report on Preferred Numbers and Their Use
BS 3781	Method for Determining the Comparative Tracking Index of Solid Insulating Material
IEC 158	Low-voltage Controlgear 158—1 Part 1—Contactors
IEC 410	Sampling Plans and Procedures for Inspection by Attributes