Australian Standard®

HIGH VOLTAGE MOTOR STARTERS

Part 1—DIRECT-ON-LINE (FULL VOLTAGE) A.C. STARTERS

The following scientific, industrial and governmental organizations were officially represented on the committee entrusted with the preparation of this standard:

Australian-British Trade Association

Australian Electrical and Electronic Manufacturers Association

Bureau of Steel Manufacturers of Australia

Confederation of Australian Industry

Department of Defence

Department of Productivity

Electrical Contractors Associations of Australia

Electricity Supply Association of Australia

Institution of Engineers, Australia

Railways of Australia Committee

Testing Authorities

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PREFACE

This standard was prepared by the Association's Committee on Industrial Switchgear and Controlgear. It is the first part of a multi-part standard for high voltage motor starters. Other parts are under consideration.

The standard has been based on the International Electrotechnical Commission's Document 17 (Central Office)935, Draft Specification for High-voltage Motor Starters, Part 1: Direct-on-line (Full Voltage) A.C. Starters. Where this standard deviates technically from the IEC document by way of additional or different requirements this fact is indicated by a rule in the margin against the clause, or part thereof, affected.

This standard may require reference to the following Australian standards:

AS 1023 Thermal Protection of Electric Motors
Part 1— Built-in Thermal Detectors and Associated Control Units
Part 2— Thermal Overload Protective Devices
Part 3— Inherent Overheat Protectors

AS 1034 High Voltage Current-limiting Fuses

AS 1202 A.C. Motor Starters (up to and including 1 000 V)
Part 1— Direct-on-line (Full Voltage) Starters

AS 1431 Control Switching Devices for Voltages up to 650 V a.c. and 250 V d.c.
Part 2— Push-button and Related Control Switches (Including Indicator Lights)

AS 1824 Insulation Coordination
Part 1— Basic Principles, Standard Insulation Levels and Test Procedures
Part 2— Application Guide

AS 1852 International Electrotechnical Vocabulary

AS 1864 High Voltage Alternating Current Contactors

AS 1931 High Voltage Testing Techniques
Part 1— General Definitions, Test Requirements, Test Procedures and Measuring Devices
Part 2— Application Guide for Measuring Devices

AS 2006 High Voltage Alternating Current Circuit-Breakers

AS 2067 Switchgear Assemblies and Ancillary Equipment for A.C. Voltages above 1 kV

AS 2086 Metal-enclosed Switchgear and Controlgear for Rated Voltages above 1 kV up to and Including 72.5 kV

AS . . . . Insulation-enclosed Switchgear and Controlgear for Rated Voltages above 1 kV up to and including 36 kV*

AS C100 Approval and Test Specification for Definitions and General Requirements for Electrical Materials and Equipment

AS C320 Classification of Insulating Materials for Electrical Machinery and Apparatus on the Basis of Thermal Stability in Service.

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* In course of preparation.

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PART 1
DIRECT-ON-LINE (FULL VOLTAGE) A.C. STARTERS

SECTION 1. SCOPE AND OBJECT

1.1 SCOPE. This standard applies to direct-on-line (full voltage) starters for industrial use, intended to start and accelerate a motor to normal speed and to provide means for the protection of the motor and its associated circuit against operating overloads, and to intentionally cause the motor to stop.

This standard also applies to reversing starters, and includes inching and plugging duties.

It applies only to starters, the main contacts of which are intended to be connected to circuits of above 1000 V up to and including 15 000 V a.c. rated voltage for use in installations not exposed to atmospheric over-voltages. As such starters are normally for three-phase motors with three-pole switching, this specification is limited to these arrangements. Variations necessary for any other arrangement are subject to special agreement.

Breaking of short-circuit currents is outside the scope of this standard, and the standard does not apply to starters using static main switching devices or to dependent manual starters (see Note to Clause 2.1.4).

NOTES:

1. Suitable short-circuit protection should be ensured by protective devices (e.g. fuses or circuit-breakers) which may form part of the installation or of the starter itself. These protective devices should comply with the appropriate Australian standards. Appendix B gives requirements for their coordination with the starter.

2. The use of starters in installations exposed to atmospheric overvoltages is subject to special agreement. When necessary, reference should be made to the appropriate Australian standard, e.g. AS 2086 and AS ...., Insulation-enclosed Switchgear and Controlgear for Rated Voltages above 1 kV and including 36 kV (in course of preparation).

The clauses of this standard relating to overload protection may not be applicable in the case of controlgear relying for its operation on built-in over-temperature protective devices.

NOTE: The expression 'built-in' means built into the motor.