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Motors and generators



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Contents

Technical Committee on Industrial Products *vii*

Subcommittee on C22.2 No. 100 *viii*

Preface *x*

1 Scope 1

2 Reference publications and definitions 2

2.1 Reference publications 2

2.2 Definitions 3

3 General requirements 6

4 Construction 7

4.1 General 7

4.2 Enclosure 7

4.2.1 Guarded machines 7

4.2.2 Totally enclosed machines 7

4.2.3 Drip-proof and weather-proof enclosures 8

4.3 Non-metallic enclosure materials 8

4.4 Terminal boxes (750 V and less) 8

4.5 Conduit hubs and equivalent threaded openings 10

4.6 Flexible cords 10

4.7 Leads 11

4.7.1 Lead type and size 11

4.7.2 Lead insulation 11

4.7.3 Lead protection 11

4.8 Spacings (low voltage) 12

4.9 Capacitors 12

4.10 Suppressors 13

4.11 Grounding and bonding 13

4.12 Brush holders and terminals 14

4.13 Receptacles 14

4.14 Inverters 14

4.14.1 Inverters integral with a variable-speed machine 14

4.14.2 Construction — two-wire circuits 14

4.14.3 Construction — three-wire circuits 15

4.14.4 Receptacle grounding terminal 15

5 Marking 5

6 Tests 7

6.1 General 17

6.2 Temperature test 18

6.3 Rating 19

6.4 Dielectric strength test 19

6.5 Threaded conduit openings 20

6.6 Strain relief 20

6.7 Guarded machine test 20

6.8 Water tests 20

- 6.9 Flame tests 22
- 6.10 Impact test 22
- 6.11 Physical abuse (terminal boxes) 22
- 6.12 Integral insulation 23

7 DC machines and AC machines (including universal motors) in IEC frame size 80 and smaller 23

- 7.1 Scope 23
- 7.2 Construction 23
 - 7.2.1 General 23
 - 7.2.2 Terminal boxes 24
 - 7.2.3 Spacings 24
 - 7.2.4 Leads (30 V rms and less) 24
 - 7.2.5 Soldered connections 24
 - 7.2.6 Hobby motors 24
 - 7.2.7 Insulation systems 25
- 7.3 Marking 25
- 7.4 Tests 26
 - 7.4.1 General 26
 - 7.4.2 Rating — AC motors 26
 - 7.4.3 Rating — DC motors 26
 - 7.4.4 Temperature test 26
 - 7.4.5 Starting of hobby motors 26
 - 7.4.6 Overspeed (ac series and universal motors) 27
 - 7.4.7 Moisture absorption 27

8 AC machines (including universal motors) in IEC frame sizes 90 to 280 and rated 750 V ac and less 27

- 8.1 Scope 27
- 8.2 Construction 27
 - 8.2.1 General 27
 - 8.2.2 Leads to embedded detectors 27
 - 8.2.3 Insulation systems 27
- 8.3 Markings 28
- 8.4 Tests 28
 - 8.4.1 General 28
 - 8.4.2 Embedded detectors 28
 - 8.4.3 Moisture absorption 28

9 AC machines rated over 750 V ac or in IEC frame size 315 and larger 29

- 9.1 Scope 29
- 9.2 Construction 29
 - 9.2.1 General 29
 - 9.2.2 Enclosures 29
 - 9.2.3 Terminal boxes 29
 - 9.2.4 Mechanical strength 30
 - 9.2.5 Insulation (for parts over 750 V) 30
 - 9.2.6 Internal wiring (over 750 V) 30
 - 9.2.7 Internal wiring (750 V ac and less and 500 V dc and less) 31
 - 9.2.8 Terminal box spacings 31
 - 9.2.9 Insulation systems 31
- 9.3 Marking 32
- 9.4 Tests 32
 - 9.4.1 Test voltage 32

- 9.4.2 Rating 32
- 9.4.3 Temperature 32
- 9.4.4 Dielectric strength 33
- 9.4.5 Water tests 34

10 DC machines in IEC frame size 90 and larger 34

- 10.1 Scope 34
- 10.2 Construction 34
 - 10.2.1 General 34
 - 10.2.2 Enclosures 34
 - 10.2.3 Mechanical safe speed 34
 - 10.2.4 Terminal boxes 34
 - 10.2.5 Insulation systems 35
 - 10.2.6 Insulation (for parts over 750 V) 35
 - 10.2.7 Spacings 35
 - 10.2.8 Lifting supports 36
- 10.3 Marking 36
- 10.4 Tests 36
 - 10.4.1 General 36
 - 10.4.2 Temperature 36
 - 10.4.3 Motor-rated load current 37
 - 10.4.4 Dielectric strength 37
 - 10.4.5 Overspeed 37
 - 10.4.6 Water tests 37

11 Portable and standby generators 37

- 11.1 Scope 37
- 11.2 Construction 38
 - 11.2.1 General 38
 - 11.2.2 Enclosure or panels 38
 - 11.2.3 Terminal boxes (750 V and less) 38
 - 11.2.4 Leads 39
 - 11.2.5 Grounding and bonding 39
 - 11.2.6 Brush holders and terminals 40
 - 11.2.7 Battery chargers 41
- 11.3 Marking 42
- 11.4 Tests 43
 - 11.4.1 Temperature 43
 - 11.4.2 Terminal panel 43
 - 11.4.3 Rating 43
 - 11.4.4 Dielectric strength test 44
 - 11.4.5 Generator probe test 44
 - 11.4.6 Flame tests 44
 - 11.4.7 Impact test 44
 - 11.4.8 Physical abuse (terminal boxes) 45
 - 11.4.9 Integral insulation 45
 - 11.5 Shipping 46

12 Inverter-duty AC machines 46

- 12.1 Scope 46
- 12.2 Construction 46
- 12.3 Tests 46
 - 12.3.1 General 46
 - 12.3.2 Power supply 46

- 12.3.3 Rating 46
- 12.3.4 Temperature 46
- 12.3.5 Dielectric strength 47
- 12.4 Marking 47

Annexes

- A** (informative) — Drip test 64
- B** (informative) — Marking translations 65

Tables

- 1** — Thickness of metal for boxes for wiring terminal parts 48
- 2** — Usable space in terminal boxes (for machines 750 V and less and copper conductors) 49
- 3** — Minimum spacings for bare live parts 50
- 4** — Maximum allowable temperatures, °C 51
- 5** — Maximum allowable terminal box temperature, °C (based on an ambient temperature of 40 °C) 52
- 6** — Bending moment and tightening torques 52
- 7** — Maximum allowable temperatures for DC motors rated 30 V and less, °C 53
- 8** — Minimum size of terminal boxes for insulated terminations 54
- 9** — Minimum spacings for bare live parts over 750 V 55
- 10** — Maximum operating temperatures (induction motors) 56
- 11** — Maximum operating temperatures (synchronous motors) 57
- 12** — Maximum temperatures (synchronous generators) 58
- 13** — Corona-extinction and impulse test voltages 59

Figures

- 1** — Test power supplies 60
- 2** — High-voltage symbol 60
- 3** — Spray-head piping 61
- 4** — Spray head 62
- 5** — Power > 5 kW, two-wire circuits 63
- 6** — Power < 5 kW, two-wire circuits 63
- 7** — Three-wire circuits 63

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Preface

This is the sixth edition of CSA C22.2 No. 100, *Motors and generators*, one of a series of Standards issued by the Canadian Standards Association under Part II of the *Canadian Electrical Code*. It supersedes the previous editions published in 1995, 1992, 1985, 1982, and 1974.

Significant changes from the previous edition are as follows:

- (a) the addition of the construction requirements for two- and three-wire generator circuits in [Clause 4.14](#); and
- (b) an expansion of testing requirements in [Clause 11.4](#).

For general information on the standards of the *Canadian Electrical Code, Part II*, see the Preface of CAN/CSA-C22.2 No. 0.

This Standard was prepared by the Subcommittee on C22.2 No. 100, under the jurisdiction of the Technical Committee on Industrial Products and the Strategic Steering Committee on Requirements for Electrical Safety, and has been formally approved by the Technical Committee.

Interpretations: The Strategic Steering Committee on Requirements for Electrical Safety has provided the following direction for the interpretation of standards under its jurisdiction: "The literal text shall be used in judging compliance of products with the safety requirements of this Standard. When the literal text cannot be applied to the product, such as for new materials or construction, and when a relevant committee interpretation has not already been published, CSA's procedures for interpretation shall be followed to determine the intended safety principle".

June 2004

Notes:

- (1) Use of the singular does not exclude the plural (and vice versa) when the sense allows.
- (2) Although the intended primary application of this Standard is stated in its Scope, it is important to note that it remains the responsibility of the users of the Standard to judge its suitability for their particular purpose.
- (3) This publication was developed by consensus, which is defined by CSA Policy governing standardization — Code of good practice for standardization as "substantial agreement. Consensus implies much more than a simple majority, but not necessarily unanimity". It is consistent with this definition that a member may be included in the Technical Committee list and yet not be in full agreement with all clauses of this publication.
- (4) CSA Standards are subject to periodic review, and suggestions for their improvement will be referred to the appropriate committee.
- (5) All enquiries regarding this Standard, including requests for interpretation, should be addressed to Canadian Standards Association, 5060 Spectrum Way, Suite 100, Mississauga, Ontario, Canada L4W 5N6.
 - Requests for interpretation should
 - (a) define the problem, making reference to the specific clause, and, where appropriate, include an illustrative sketch;
 - (b) provide an explanation of circumstances surrounding the actual field condition; and
 - (c) be phrased where possible to permit a specific "yes" or "no" answer.

Committee interpretations are processed in accordance with the CSA Directives and guidelines governing standardization and are published in CSA's periodical Info Update, which is available on the CSA Web site at www.csa.ca.

C22.2 No. 100-04

Motors and generators

1 Scope

1.1

This Standard applies to electric motors and generators for installation and use, in accordance with the Rules of the *Canadian Electrical Code, Part I*, in non-hazardous locations.

Note: The term “machine” throughout this Standard should be assumed to mean “motor” and “generator”.

1.2

Clauses 1 to 6 are general in nature and apply, unless otherwise noted, to the motors and generators covered by Clauses 7 to 12 as follows:

- (a) Clause 7 — DC machines and AC machines (including universal motors) in IEC frame size 80 and smaller;
- (b) Clause 8 — AC machines (including universal motors) in IEC frame sizes 90 to 280 and rated 750 V ac and less;
- (c) Clause 9 — AC machines rated over 750 V ac or in IEC frame size 315 and larger;
- (d) Clause 10 — DC machines in IEC frame size 90 and larger;
- (e) Clause 11 — portable and standby generators; and
- (f) Clause 12 — inverter-duty AC machines.

1.3

This Standard provides basic requirements for machines and does not exclude any additional requirements given in other Standards of the *Canadian Electrical Code, Part II*.

1.4

This Standard does not apply to

- (a) sealed- (hermetic-) type motors such as those used in refrigerant compressors; or
- (b) electric machines for use in aircraft, marine service installations, drives for land transportation equipment, or machines used in underground mining.

1.5

In CSA Standards, “shall” is used to express a requirement, i.e., a provision that the user is obliged to satisfy in order to comply with the standard; “should” is used to express a recommendation or that which is advised but not required; and “may” is used to express an option or that which is permissible within the limits of the standard. Notes accompanying clauses do not include requirements or alternative requirements; the purpose of a note accompanying a clause is to separate from the text explanatory or informative material. Notes to tables and figures are considered part of the table or figure and may be written as requirements. Legends to equations and figures are considered requirements.