

Industrial control equipment



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Preface

This is the eleventh edition of CSA C22.2 No. 14, *Industrial control equipment*, 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 2005, 1995, 1991, 1987, 1985, 1973, 1966, 1953, 1942, and 1935.

This edition incorporates numerous revisions to the text, figures, and tables. These revisions have been incorporated to satisfy two key criteria. First, some are intended to expand on and clarify requirements where the previous text possibly allowed for some ambiguity. These revisions attempt to more precisely specify requirements that perhaps had to be inferred or were implied. Examples include expansion of tables to include values that were previously extrapolated and clarification of elevator duty requirements. Secondly, many of the revisions are necessary to avoid introducing conflicting requirements for similar products. Canada will be adopting a number of CANENA-developed trinational documents that are based on the IEC 60947 series of Standards and deal with industrial control products. The revisions will ensure that as the adoption of these IEC 60947-based documents continues, no conflict will be created with the requirements specified in this Standard.

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 is considered suitable for use for conformity assessment within the stated scope of the Standard.

This Standard was prepared by the Integrated Committee on Industrial Control, 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."

February 2010

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.
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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. 14-10

Industrial control equipment

1 Scope

1.1

This Standard applies to control and protective devices, and accessory devices, rated at not more than 1500 V, for starting, stopping, regulating, controlling, or protecting electric motors, generators, heating apparatus, or other equipment used to control an industrial process that is intended to be installed and used in non-hazardous locations in accordance with the rules of the *Canadian Electrical Code, Part I*.

Notes:

- (1) *Examples of the industrial control devices covered by this Standard are manual and magnetic starters and controllers; thermal and magnetic overload relays; push-button stations (including selector switches and pilot lights); control circuit switches and relays; float-, flow-, pressure-, and vacuum-operated switches; resistors and rheostats; proximity switches; time-delay relays and switches; resistors and rheostats intended for heating and lighting, including those for motor generator fields; and control devices intended for heating and lighting.*
- (2) *The term "control" as used throughout this Standard applies to both starters and controllers.*
- (3) *Electrical instruments, such as meters, that can be included as part of control equipment are not covered by this Standard.*

1.2

This Standard also applies to assemblies of industrial control and protective devices rated 750 V or less, and includes assemblies of automatic control and process equipment.

1.3

Certain equipment intended for use with electric elevators, air-conditioning and refrigeration equipment, cranes and hoists, electronic and solid-state control equipment, and "TV"-rated relays, etc., can be subject to additional requirements not included in this Standard.

1.4

This Standard does not apply to equipment covered by other CSA Standards, such as power supplies, programmable logic controllers, assemblies of equipment intended solely for the distribution of power, assemblies for controlling power factor, switches other than manual motor controllers, and electrical components intended to protect circuits other than motor branch-circuits.

1.5

The industrial control equipment covered by this Standard is intended for use in an ambient temperature of 0 to 40 °C.

1.6

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. Annexes are designated normative (mandatory) or informative (non-mandatory) to define their application.