CSA Group

C22.2 No. 292-18
National Standard of Canada

Dc arc fault protection for photovoltaic applications

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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 to judge its suitability for their particular purpose.

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Dc arc fault protection for photovoltaic applications

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Preface

This is the first edition of CSA C22.2 No. 292, *Dc arc fault protection for photovoltaic applications,* one of a series of Standards issued by CSA Group under Part II of the *Canadian Electrical Code*.

This Standard is intended to replace the requirements previously contained in CSA TIL M-07.

Arc fault protective devices are often embodied in combination with another device. As such, the user of this Standard may need to reference additional requirements as found in CSA C22.2 No. 5, CSA C22.2 No. 144.1, CSA C22.2 No. 21, CSA C22.2 No. 42, or elsewhere, as applicable.

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

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

This Standard was prepared by the Subcommittee on Arc Fault Protective Devices for Photovoltaics 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.

This Standard has been developed in compliance with Standards Council of Canada requirements for National Standards of Canada. It has been published as a National Standard of Canada by CSA Group.

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."

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 Standard 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 Standard.*
4) *To submit a request for interpretation of this Standard, please send the following information to* ***inquiries@csagroup.org*** *and include "Request for interpretation" in the subject line:*
   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) *where possible, phrase the request in such a way that a specific "yes" or "no" answer will address the issue.*

   Committee interpretations are processed in accordance with the CSA Directives and guidelines governing standardization *and are available on the* Current Standards Activities *page at* ***standardsactivities.csa.ca****.*
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   a) *Standard designation (number);*

b) *relevant clause, table, and/or figure number;*
c) *wording of the proposed change; and*
d) *rationale for the change.*

C22.2 No. 292-18
Dc arc fault protection for photovoltaic applications

1 Scope

1.1
This Standard applies to dc arc fault protective devices (DC-AFPDs) and devices incorporating arc fault circuit protection intended for use in direct current circuits in photovoltaic (PV) systems having a maximum voltage rating of 1000 V dc and intended for installation in accordance with the rules of the *Canadian Electrical Code, Part I*.

1.2
This Standard contains construction, test, and marking requirements for DC-AFPDs and is designed to be used in conjunction with CSA CAN/CSA-C22.2 No. 5, CSA C22.2 No. 144.1, CSA C22.2 No. 305, and CSA C22.2 No. 107.1 as applicable.

1.3
A DC-AFPD is intended to detect and mitigate the effects of arcing faults that can pose a risk of fire ignition under certain conditions if the arcing persists. A DC-AFPD is not intended to detect glowing connections.

1.4
In this Standard, “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.

2 Reference publications
This Standard refers to the following publications, and where such reference is made, it shall be to the edition listed below:

CSA Group

C22.1-15
Canadian Electrical Code, Part I

CAN/CSA-C22.2 No. 0-10 (R2015)
General Requirements

C22.2 No. 0.2-16
Insulation coordination

C22.2 No. 0.4-17
Bonding of electrical equipment

C22.2 No. 0.8-12 (R2016)
Safety functions incorporating electronic technology

CAN/CSA-C22.2 No. 0.17-00 (R2013)
Evaluation of properties of polymeric materials

C22.2 No. 5-16
Molded-case circuit breakers, molded-case switches, and circuit-breaker enclosures

CAN/CSA-C22.2 No. 65-13
Wire connectors

C22.2 No. 94.1-15
Enclosures for electrical equipment, non-environmental considerations

C22.2 No. 94.2-15
Enclosures for electrical equipment, environmental considerations

C22.2 No. 107.1-16
Power conversion equipment

C22.2 No. 144.1-16
Ground-fault circuit-interrupters

C22.2 No. 305-16
Molded-case circuit breakers, molded-case switches, and circuit-breaker enclosures for use with photovoltaic (PV) systems

CAN/CSA-IEC 61000-4-5-08 (R2013)
Electromagnetic compatibility (EMC) Part 4-5: Testing and measurement techniques – Surge immunity test.

CAN/CSA-IEC 61000-4-2:12
Electromagnetic compatibility (EMC) Part 4-12: Testing and measurement techniques — Electrostatic discharge immunity test

3 Definitions and abbreviations

3.1 Definitions

The following definitions shall apply in this Standard.

