

**C37.14 Working Group**  
MINUTES OF THE FALL 2022 MEETING  
Hilton Lake Champlain, Burlington, VT  
Monday, October 17, 2022, 3:45-5:30 PM

Attendance:

18 people were in attendance  
12 of 14 members were present, thus Quorum was met.

Attendance recorded below

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A. Call to order

*Meeting was called to order by WG Chair, Lou Grahor, at 3:46 PM on Monday, October 17, 2022.*

B. Introduction of attendees

*Complete*

C. Approval of Agenda

*Agenda was reviewed by WG motion to accept by M. Lafond (1<sup>st</sup>) and D. Hrncr (2<sup>nd</sup>), motion was approved by unanimous consent*

D. Verbal call for essential patents

*A link to the IEEE patent policy slides was distributed in the agenda and displayed during the meeting, no patent issues were voiced by the meeting attendees*

E. Approval of Minutes from previous meetings

*Minutes were reviewed by WG and were approved by unanimous consent*

F. Working group P&Ps and Copyright Policy

*A link to the IEEE-SA WG Policies & Procedures and the IEEE copyright policy slides was distributed in the agenda, the slides were displayed online during the meeting*

G. Document Status

*Current document: C37.14-2015 due to expire 12-31-2025*

*C37.14 PAR approved 2-23-2022, expires 12-31-2026*

H. New Business

*Working group vote on request by IEEE VTS Traction Power Systems Standards committee to be co-sponsor, Spring 2022 LVSD voted in favor of co-sponsoring the document with the VTS group. Motion from M. Valdes (1<sup>st</sup>) and M. Lafond (2<sup>nd</sup>) to co-sponsor the document with VTS, motion carries unanimously.*

*Review and discussion: "Low Voltage" was removed from the title of the document in the 2015 version. Discussion around if the term "Low Voltage" should be added back*

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*into the title. Motion from M. Lafond to add the term “Low Voltage” back into the document title, second by K. Sippel. Motion carries unanimously.*

*AdHoc Report: discussed and reviewed potential changes to definitions as submitted from the Ad Hoc. Ad Hoc report is included at the end of the meeting minutes.*

*M. Valdes requests to join the Ad Hoc*

*Review and discussion of comments submitted on Draft 2*

*Discussion of circuit breaker contact temperature limits, consensus was to reject the proposal to increase the temperature limits of the contacts due to unintended consequences and implications of acceptance in the switchgear.*

*Potential Addition of Product Photos*

*Decision was to use circuit diagrams instead of photos*

I. Adjourn

*Meeting adjourned at 5:24 PM.*

Reported by: Darryl Moser – Secretary

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Attendance record:

<b>First Name</b>	<b>Last Name</b>	<b>Company Name</b>	<b>Role:</b>	<b>10/17/2022</b>
Lou	Grahor	Eaton Corporation	Chair	✓
Darryl	Moser	ABB	Secretary	✓
Clint	Carne	Schneider Electric	Member	✓
Daniel	Delfino	ABB	Member	✓
Brian	Gerzeny	Powell Electrical Systems Inc	Member	✓
Dan	Hrncir	Eaton	Member	✓
Michael	Lafond	No affiliation	Member	✓
Jeff	Mizener	Siemens Industry, Inc.	Member	✓
Owen	Parks	ABB	Member	✓
Kevin	Sippel	Eaton	Member	✓
Christo	Thomas	SCHNEIDER ELECTRIC USA INC	Member	✓
Danish	Zia	UL LLC	Member	✓
Paul	Rakus	Eaton	Guest	✓
Marcelo	Valdes	ABB	Guest	✓
Tom	Hawkins	Siemens	Guest	✓
Erin	Hardy	Eaton	Guest	✓
Wahaj	Saleem	Siemens	Guest	✓
Victor	Savulyak	KEMA	Guest	✓

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**C37.14 Draft Ad Hoc Report**

- Existing definitions for circuit breaker types contain performance requirements.
- IEEE style manual states: “Each definition should be a brief, self-contained description of the term in question and shall not contain any other information, such as requirements or elaborative text”
- Need to revise the circuit breaker type definitions so that differences can be easily understood.

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Ad Hoc Recommended Changes to the definitions

IEEE C37.14-2015 Definition:

**general-purpose dc power circuit breaker:** A circuit breaker that, during interruption, does not limit the current peak of the available (prospective) fault current, and may not prevent the fault current from rising to its sustained value.

Change definition to:

**Direct-current low-voltage power circuit breaker, general-purpose:** A manually or electrically operated circuit breaker which includes a trip device in accordance with IEEE Std C37.17.

IEEE C37.14-2015 Definition:

**high-speed dc power circuit breaker:** A circuit breaker that, during interruption, limits the current peak to a value less than the available (prospective) fault current.

Change definition to:

**Direct-current low-voltage power circuit breaker, high-speed:** An electrically operated current-limiting circuit breaker which includes a trip device in accordance with this standard.

IEEE C37.14-2015 Definition:

**semi-high-speed dc power circuit breaker:** A circuit breaker that, during interruption, does not limit the current peak of the available (prospective) fault current on circuits with minimal inductance, but that does limit current to a value less than the sustained current available on higher inductance circuits.

Change definition to:

**Direct-current low-voltage power circuit breaker, semi-high-speed:** An electrically operated circuit breaker which includes a trip device in accordance with this standard and is not current-limiting.

IEEE C37.14-2015 Definition:

**rectifier dc power circuit breaker:** A circuit breaker that carries the normal current output of one rectifier, and during fault conditions, functions to withstand and/or interrupt abnormal current as required.

Change definition to:

**Direct-current low-voltage power circuit breaker, rectifier:** An electrically operated circuit breaker, tailored to rectifier applications.

IEEE C37.14-2015 Definition:

**mining duty general-purpose dc power circuit breaker:** A general-purpose dc power circuit breaker, with preferred ratings tailored to mining applications.

Change definition to:

**Direct-current low-voltage power circuit breaker, mining duty general-purpose:** A general-purpose dc power circuit breaker, tailored to mining applications.

IEEE C37.14-2015 Definition:

**sustained short-circuit current:** A long duration overcurrent resulting from a dc fault of negligible resistance between live conductors having a difference in potential under normal operating conditions.

Change definition to:

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**Sustained short-circuit current (dc):** An overcurrent measured at a no less than 4 times the circuit time constant, ignoring any peak or ripple, resulting from a dc fault of negligible resistance between conductors having a difference in potential.

Add two new definitions:

**Direct-current low-voltage power circuit breaker:** A direct current low-voltage power circuit breaker capable of operating (making, carrying, and breaking dc electrical current) under normal and specified abnormal circuit conditions and that includes a trip device in accordance with this standard.

**current-limiting (dc):** A qualifying term indicating that, under specified circuit conditions, the clearing time of a direct-current low-voltage power circuit breaker shall prevent a short-circuit current reaching its peak value it would have attained without interruption. Note: see Figure E.1

Next steps if working group accepts Ad Hoc recommended changes:

- Address the problems with the use of the term Rated Peak Current.
- Issues with the use of other terms related to short circuit current
- Address Use (rectifier, line, tie)
- Develop requirements for Current Interruption Direction (unidirectional, bidirectional)