C37.27 WG meeting

IEEE Guide for Low-Voltage AC (635 V and below) Power Circuit Breakers Applied with Separately Mounted Current-Limiting Fuses (latest edition - 2015)

Meeting Date: Tuesday, October 18, 1 of 1 session

Meeting Time: 2:00 – 3:45 PM (EST)

Location: Hilton Burlington Lake Champlain, Burlington, VT

Chair; Marcelo E. Valdes, ABB, Marcelo.E.Valdes@ieee.org

Secretary/VC: Keith Flores

1. **Call to Order**
2. **Introduction of Officers, Members and Guests followed by acceptance of the agenda.**

   Introductions were made. For this initial Working Group meeting, there were three members and no guests in attendance.

   - Marcelo Valdes (Chair)
   - Keith Flowers (VC/Secretary)
   - Clint Carne (Member)

3. **IEEE-SA Patent & Copyright Policies**

   a. https://development.standards.ieee.org/myproject/Public/mytools/mob/slideset.pdf

   b. https://standards.ieee.org/content/dam/ieee-standards/standards/web/documents/other/copyright-policy-WG-meetings.potx

   Even if from another IEEE document permission is needed!

   No concern over patent claims was brought up or discussed.

4. **New Business**

   a. Discussion of potential changes or need for changes

      i. Newer LVPCB derived from IEC ACB platforms a concern, some of them may have somewhat low withstand or MCCB like behavior…?

         1. Is dynamic impedance a concern when newer LVPCBs are protected by large fuses where contacts can pop & impact fuse performance before fuses are fully current limiting? In other words, can newer LVPCB act enough like MCCB that no field

evaluation for suitability of fuse protection can be relied upon? Or that evaluation needs to be done differently from how it is currently described in this guide?

ii. Discussion was had regarding whether there were any other significant technical concerns.

iii. A suggestion was made to change the “guide” to a “recommended practice”. Suggestion was positively received.

iv. Marcelo Valdes made suggestions for minor changes to the document that will be document in a draft sent to interested members and those interested in participating in this WG.

5. **Next actions discussed:**

   a. **Before Next meeting**

      i. Send suggestion to Marcelo E. Valdes at marcelo.e.valdes@ieee.org by middle of January?

      ii. Manufacturer representatives requested to discuss with in house experts on whether the concerns identified above in 4. A. i. are realistic or not and if they need to be addressed or may be ignored.

      iii. Teleconference before next C37 meeting to consider suggestion for the purpose of an updated draft to be issued prior to the Spring meeting. Possibly by first week in February or late January? Also, to decide if WG wants to change the document to an RP.

      iv. Subsequent teleconferences as needed to have a draft that the WG can send to ballot by spring meeting in April!

6. **Meeting was adjourned** by the chair at the end of the allotted time after completing the intended agenda

Appendix 1

Introduction and contents of current 2015 document

Excerpted from the document

Introduction as included in current guide

Tuesday, October 18, 2:00 – 3:45 PM 1 of 1 session

C37.27 WG meeting

IEEE Std C37.27™-2008 revised IEEE Std C37.27-1987 to address the following issues:

a) Modification of all dimensional information to provide metric dimensions,

b) General revision for harmonization with related standards,

c) General revision for current products and applications including details associated with electronic and electromechanical trip devices, and

d) Clarification of the differences between low-voltage nonintegrally fused circuit breakers (covered by

IEEE Std C37.13™)[1] and low-voltage ac power circuit breakers with separately mounted fuses.

Nonintegrally fused circuit breaker construction is not the same as separately mounted fuses construction. The previous title of IEEE Std C37.27-1987 included the reference to nonintegrally fused power circuit breakers.

This reference is removed from the 2008 revision and only the reference to separately mounted fuses is used to clarify this construction difference and the applicability of this guide only to low-voltage AC power circuit breaker using separately mounted current-limiting fuses.

While this document is intended as a guide for application of fuses in low-voltage ac power circuit breakers with separately mounted current-limiting fuses, the guide may also be useful as an application guide for low-voltage integrally or nonintegrally fused power circuit breakers.

The present revision updates the references to preferred ratings from IEEE Std C37.16™, which will be withdrawn when IEEE Std C37.13 and IEEE Std C37.14™ revisions have been completed to incorporate the information previously included within IEEE Std C37.16.

Contents as included in current guide

1. Overview
   1.1. Scope
   1.2. Purpose
2. Normative references
3. Definitions
4. General
5. Coordination of circuit breaker and fuse
   5.1. Maximum fuse rating to be used
   5.2. Minimum fuse rating to be used
6. Location of fuses
7. Open-fuse trip devices
8. Addition or substitution of fuses in existing installations
9. Protection of connected equipment
10. Tested combinations of circuit breakers and fuses
11. Annex A (informative) Bibliography

C37.27 WG meeting

Appendix 2 PAR

PC37.27

Type of Project: Revision to IEEE Standard C37.27-2015

Project Request Type: Initiation / Revision

PAR Request Date: 27 May 2022, PAR Approval Date: 21 Sep 2022

PAR Expiration Date: 31 Dec 2026

PAR Status: Active Root Project: C37.27-2015

1.1 Project Number: PC37.27

1.2 Type of Document: Guide

1.3 Life Cycle: Full Use

2.1 Project Title: Guide for Low-Voltage AC (635 V and below) Power Circuit Breakers Applied with Separately-Mounted Current-Limiting Fuses

3.1 Working Group: LVSD - IEEE Standard Application Guide for Low-Voltage AC Nonintegrally Fused Power Circuit Breakers (Using Separately Mounted Current-Limiting Fuses) (PE/SWG/LVSD-WG_C37.27)

3.1.1 Contact Information for Working Group Chair:

Name: Marcelo Valdes, Email Address: marcelo.valdes@us.abb.com

3.1.2 Contact Information for Working Group Vice Chair:

Name: Keith Flowers, Email Address: keith.flowers@ieee.org

3.2 Society & Committee: IEEE Power & Energy Society/Switchgear(PE/SWG)

3.2.1 Contact Information for Standards Committee Chair:

Name: Keith Flowers, Email Address: keith.flowers@ieee.org

3.2.2 Contact Information for Standards Committee Vice Chair:

Name: Douglas J Edwards, Email Address: doug.edwards@ieee.org

3.2.3 Contact Information for Standards Representative:

Name: Michael Wactor, Email Address: mwactor@ieee.org

4.1 Type of Ballot: Individual

4.2 Expected Date of submission of draft to the IEEE SA for Initial Standards Committee Ballot: Dec 2025

4.3 Projected Completion Date for Submittal to RevCom: Aug 2026

5.1 Approximate number of people expected to be actively involved in the development of this project: 10

5.2 Scope of proposed standard: This guide applies to unfused low-voltage ac power circuit breakers of the 635 V maximum voltage class with separately-mounted current-limiting fuses for use on ac circuits with available short-circuit currents of 200 000 A (rms symmetrical) or less. Low-voltage ac fused power circuit breakers and combinations of fuses and molded-case circuit breakers are not covered by this guide. In this guide, the term circuit breaker means unfused low-voltage ac power circuit breaker.

5.3 Is the completion of this standard contingent upon the completion of another standard? No

5.4 Purpose: This guide sets forth recommendations believed essential for the selection of current-limiting fuses (see NEMA FU-1 and UL 248-1) for use in combination with low-voltage ac power circuit breakers, rated in accordance with IEEE Std C37.13™ and applied in metal-enclosed low-voltage power circuit breaker switchgear in accordance with IEEE Std C37.20.1. NOTE--The combination of a circuit breaker and separately mounted fuses is limited to 600 V based on fuse maximum voltage ratings.

5.5 Need for the Project: A revision is needed to reflect changes in companion documents which are referenced by this document, to incorporate updated industry practices and changes in relevant technology. Change to Need for the Project: The Working Group will revise the is document as needed to reflect changes in companion documents which are referenced by this document, to incorporate updated industry practices and changes in relevant technology.

5.6 Stakeholders for the Standard: Manufacturers and end users of nonintegrally fused power circuit breakers. Change to Stakeholders for the Standard: The stakeholders of this application guide are the manufacturers Manufacturers and end users of nonintegrally fused power circuit breakers.

6.1 Intellectual Property

6.1.1 Is the Standards Committee aware of any copyright permissions needed for this project? No

6.1.2 Is the Standards Committee aware of possible registration activity related to this project? No

7.1 Are there other standards or projects with a similar scope? No

7.2 Is it the intent to develop this document jointly with another organization? No

8.1 Additional Explanatory Notes:

- NEMA FU-1, Low Voltage Cartridge Fuses
- UL 248-1, UL Standard for Safety Low-Voltage Fuses – Part 1: General Requirements
- IEEE 37.13, IEEE Standard for Low-Voltage AC Power Circuit Breakers Used in Enclosures
- IEEE 37.20.1, IEEE Standard for Metal-Enclosed Low-Voltage (1000 Vac and below, 3200 Vdc and below) Power Circuit Breaker Switchgear

End of agenda for C37.27 PAR review Fall 2022

by Marcelo E. Valdes

Marcelo.e.valdes@ieee.org

C37.27 WG meeting

Tuesday, October 18, 2:00 – 3:45 PM 1 of 1 session