

PC62.39

Submitter Email: m.j.maytum@ieee.org

Type of Project: Modify Existing Approved PAR

PAR Request Date: 25-Jul-2012

PAR Approval Date: 30-Aug-2012

PAR Expiration Date: 31-Dec-2013

Status: Modification to a Previously Approved PAR

Root PAR: PC62.39 **Approved on:** 02-Nov-2006

Project Record: PC62.39

1.1 Project Number: PC62.39

1.2 Type of Document: Standard

1.3 Life Cycle: Full Use

2.1 Title: Standard for Test Methods and Preferred Values for Self-Restoring Current Limiter Components Used in Telecommunication Surge Protection

Changes in title: Standard for Test Methods and Preferred Values for Self-Restoring Current Limiter Components used in Telecommunication Surge Protectors Protection

3.1 Working Group: 3.6.2 LV Solid State Surge Protective Device Components WG (PE/SPDLV/LV3.6.2)

Contact Information for Working Group Chair

Name: Michael Maytum

Email Address: m.j.maytum@ieee.org

Phone: 01234838589

Contact Information for Working Group Vice-Chair

None

3.2 Sponsoring Society and Committee: IEEE Power and Energy Society/Surge Protective Devices/Low Voltage (PE/SPDLV)

Contact Information for Sponsor Chair

Name: Antony Surtees

Email Address: surtees@ieee.org

Phone: 440 708 1121

Contact Information for Standards Representative

Name: Raymond Hill

Email Address: raymond.hill@neetrac.gatech.edu

Phone: 404-675-1881

4.1 Type of Ballot: Individual

4.2 Expected Date of submission of draft to the IEEE-SA for Initial Sponsor Ballot: 11/2007

4.3 Projected Completion Date for Submittal to RevCom: 10/2012

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

5.2 Scope: This standard sets terms, test methods, test circuits, measurement procedures and preferred result values for series connected, self-restoring current limiter components used in low-voltage telecommunication circuit surge protection. It is only applicable for components in telecommunications circuits with sinusoidal ringing voltages up to 150 V rms at 15 Hz to 70 Hz and dc powering voltages up to 400 V. The self-restoring current limiters covered by this standard have the following properties:

- * Excessive current causes a transition from a low-resistance state to a high-resistance state
- * Reverts to a low-resistance state when the excessive current ends
- * Directly operated by the current flow through the component
- * Solid-state (no moving parts)
- * Withstands specified levels of impulse
- * Withstands specified AC voltage levels when in the high-resistance state

Examples of this type of current limiter technology are positive temperature coefficient step-function thermistors of ceramic or polymeric material and silicon semiconductor based electronic circuits. This standard does

Changes in scope: This standard sets terms, test methods, and test circuits, measurement procedures and preferred result values for series connected, self-restoring current limiter components used in low-voltage telecommunication circuit surge protection. It is only applicable for components in telecommunications circuits with sinusoidal ringing voltages equal up to or 150 less V than rms 1000 at 15 rms Hz or to 1200 70 V Hz and dc powering voltages up to 400 V. The self-restoring current limiters covered by this standard have the following properties: * Excessive current causes a transition from a low-resistance state to a high-resistance state * Reverts to a low-resistance state when the excessive current ends * Directly operated by the current flow through the component * Solid-state (no moving parts) * Withstands specified levels of impulse * Withstands specified AC voltage levels when in the high-resistance state Examples of this type of current limiter technology are positive temperature coefficient step-function thermistors of ceramic or polymeric material and silicon semiconductor based electronic circuits. This standard does not cover self-restoring current limiter components used in other applications, such as heaters, inrush-current limiters or sensing devices. Current interrupting

not cover self-restoring current limiter components used in other applications, such as heaters, inrush-current limiters or sensing devices. Current interrupting type components, which reduce the current to zero by a mechanical circuit break, are not covered by this standard. In this standard, a telecommunications circuit is a circuit that uses metallic conductors to handle the remote transmission of information, such as data, communications and signaling.

type components, which reduce the current to zero by a mechanical circuit break, are not covered by this standard. In this standard, a telecommunications circuit is a circuit that uses metallic conductors to handle the remote transmission of information, such as data, communications and ~~signalling~~signaling.

5.3 Is the completion of this standard dependent upon the completion of another standard: No

5.4 Purpose: The test criteria and terms of this standard provide a means of component comparison and a common engineering language for users and manufacturers of self-restoring current limiter components intended for use in low-voltage telecommunication circuit surge protection. The test and measurement of low-voltage telecommunication (data, communications, and signalling) surge protectors is given in IEEE Std C62.36TM. This standard provides the corresponding component tests for the surge protector non-surge and active tests.

Changes in purpose: The test criteria and terms of this standard provide a means of component comparison and a common engineering language for users and manufacturers of self-restoring current limiter components intended for use in low-voltage telecommunication circuit surge ~~protectors~~protection. The test and measurement of low-voltage telecommunication (data, communications, and signalling) surge protectors is given in IEEE ~~Standard~~Std C62.3636TM. This standard provides the corresponding component tests for the surge protector non-surge and active tests.

5.5 Need for the Project: None of the existing standards adequately cover the testing of self-restoring current limiters for use in Telecommunication Surge Protectors. Such standards are: UL 1434 (APRIL 3, 1998), Thermistor-type devices A general PTC and NTC thermistor safety document. Testing does not cover many of the parameters needed for surge protector use e.g. Impulse withstand. ITU-T Recommendation K.30 (03/93), Positive temperature coefficient (PTC) thermistors Tests are for equipment applications and not surge protector usage (where the current limiter is usually connected after the voltage limiter). Critical tests, like component inherent resistance recovery, are not covered. IEC 60738-1 (1998), Thermistors - Directly heated positive step-function temperature coefficient - Part 1: Generic specification Only covers thermistors made with ceramic material. Testing does not cover many of the parameters needed for surge protector use e.g. Impulse withstand.

5.6 Stakeholders for the Standard: The stakeholders are telecom designers, standards makers, specifiers and test houses concerned with these components.

Intellectual Property

6.1.a. Is the Sponsor aware of any copyright permissions needed for this project?: No

6.1.b. Is the Sponsor 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 Joint Development

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

8.1 Additional Explanatory Notes (Item Number and Explanation): The scope (5.2) of the project has been expanded by including "preferred test and result values" The voltage range of "equal to or less than 1000 V rms or 1200 V dc", which is for power systems, changes to "ringing voltages up to 150 V rms at 15 Hz to 70 Hz and dc powering voltages up to 400 V", which are the maximum voltage levels in Telecommunications systems.