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IEEE Standard for the Surge Parameters of Isolating Transformers Used in Networking Devices and Equipment

Amendment 1: Addition of Saturated Core Secondary Winding Parameters

IEEE Power and Energy Society

Sponsored by the
Surge Protective Devices Committee

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USA

IEEE Std C62.69a™-2017
(Amendment to
IEEE Std C62.69-2016)

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Abstract: Added in this amendment is a new sub-clause, 4.5 Saturated core secondary winding parameters, to IEEE C62.69™-2016. Test methods, test circuits, measurement procedures, and result treatment to determine the secondary winding resistance and saturated core inductance are given.

Keywords: core-saturation, IEEE C62.69™

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Introduction

This introduction is not part of IEEE Std C62.69a™-2017, IEEE Standard for the Surge Parameters of Isolating Transformers used in Networking Devices and Equipment—Amendment 1.

Ferrite cored broadband signal transformers tend to saturate when a differential surge occurs across the primary winding. Core saturation causes the loss of primary winding to secondary winding coupling, shortening the transformed surge duration in the secondary winding circuit. The main surge stress occurs after the transformer core saturates and the key secondary winding parameters controlling this surge stress level are the secondary winding resistance and saturated core inductance. This amendment adds a new sub-clause, 4.5 Saturated core secondary winding parameters, to IEEE C62.69™-2016, which define techniques for the determination of the secondary winding resistance and saturated core inductance.

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