



ANSI C37.51-2018

American National
Standard for
Switchgear—
Metal-Enclosed
Low Voltage AC
Power Circuit
Breaker
Switchgear
Assemblies—
Conformance Test
Procedures





ANSI C37.51-2018

*American National Standard for Switchgear—
Metal-Enclosed Low Voltage AC Power
Circuit Breaker Switchgear Assemblies—
Conformance Test Procedures*

Secretariat:

National Electrical Manufacturers Association

Approved March 29, 2018

American National Standards Institute, Inc.

NOTICE AND DISCLAIMER

The information in this publication was considered technically sound by the consensus of persons engaged in the development and approval of the document at the time it was developed. Consensus does not necessarily mean that there is unanimous agreement among every person participating in the development of this document.

American National Standards Institute (ANSI) Standards and guideline publications, of which the document contained herein is one, are developed through a voluntary consensus Standards development process. This process brings together volunteers and/or seeks out the views of persons who have an interest in the topic covered by this publication. While NEMA administers the process and establishes rules to promote fairness in the development of consensus, it does not write the document and it does not independently test, evaluate, or verify the accuracy or completeness of any information or the soundness of any judgments contained in its Standards and guideline publications.

NEMA disclaims liability for any personal injury, property, or other damages of any nature whatsoever, whether special, indirect, consequential, or compensatory, directly or indirectly resulting from the publication, use of, application, or reliance on this document. NEMA disclaims and makes no guaranty or warranty, express or implied, as to the accuracy or completeness of any information published herein, and disclaims and makes no warranty that the information in this document will fulfill any of your particular purposes or needs. NEMA does not undertake to guarantee the performance of any individual manufacturer or seller's products or services by virtue of this Standard or guide.

In publishing and making this document available, NEMA is not undertaking to render professional or other services for or on behalf of any person or entity, nor is NEMA undertaking to perform any duty owed by any person or entity to someone else. Anyone using this document should rely on his or her own independent judgment or, as appropriate, seek the advice of a competent professional in determining the exercise of reasonable care in any given circumstances. Information and other Standards on the topic covered by this publication may be available from other sources, which the user may wish to consult for additional views or information not covered by this publication.

NEMA has no power, nor does it undertake to police or enforce compliance with the contents of this document. NEMA does not certify, test, or inspect products, designs, or installations for safety or health purposes. Any certification or other statement of compliance with any health or safety-related information in this document shall not be attributable to NEMA and is solely the responsibility of the certifier or maker of the statement.

AMERICAN NATIONAL STANDARD

Approval of an American National Standard requires verification by ANSI. ANSI states that the requirements for due process, consensus, and other criteria for approval have been met by the Standards developer.

Consensus is established when, in the judgment of the ANSI Board of Standards Review, substantial agreement has been reached by directly and materially affected interests. Substantial agreement means significantly more than a simple majority, but not necessarily unanimity. Consensus requires that all views and objections be considered, and concerted effort be made toward their resolution.

The use of American National Standards is completely voluntary; their existence does not in any respect preclude anyone, whether they have approved the Standards or not, from: manufacturing, marketing, purchasing, or using products, processes, or procedures not conforming to the Standards.

The American National Standards Institute does not develop Standards, and will under no circumstances give an interpretation of any American National Standard. Moreover, no person shall have the right or authority to issue an interpretation of an American National Standard in the name of the American National Standards Institute. Requests for interpretations should be addressed to the secretariat or sponsor whose name appears on the title page of this Standard.

Caution Notice: This American National Standard may be revised or withdrawn at any time. The procedures of the American National Standards Institute require that action be taken periodically to reaffirm, revise, or withdraw this Standard. Purchasers of American National Standards may receive current information on all Standards by calling or writing the American National Standards Institute.

Published by

National Electrical Manufacturers Association
1300 North 17th Street, Suite 900
Rosslyn, VA 22209

© 2018 National Electrical Manufacturers Association

All rights reserved including translation into other languages, reserved under the Universal Copyright Convention, the Berne Convention for the Protection of Literary and Artistic Works, and the International and Pan American Copyright Conventions.

No part of this publication may be reproduced in any form, in an electronic retrieval system or otherwise, without the prior written permission of the publisher.

Printed in the United States of America

CONTENTS

1	Scope.....	1
1.1	Purpose.....	1
2	References	1
3	Definitions	1
3.1	Conformance Tests.....	1
3.2	Design Tests (Type Tests).....	2
3.3	Production Tests (Routine Tests)	2
4	Test Conditions.....	2
4.1	Ambient Conditions.....	2
5	Conformance Test Requirements.....	2
5.1	General	2
5.2	Test Requirements.....	2
5.3	Test Arrangements	3
5.4	Dielectric Tests.....	4
5.5	Continuous Current Test.....	4
5.6	Short-Time Withstand Current Tests	4
5.7	Short-Circuit Withstand Current Tests	4
5.8	Mechanical Performance Tests—Removable Circuit Breakers.....	5
6	Treatment of Nonconforming Results.....	5
7	Production Tests (Routine Tests).....	5
7.1	General	5
7.2	Dielectric Withstand Voltage Tests	5
7.3	Mechanical Operation Tests	5
7.4	Grounding of Instrument Transformer Cases Test	6
7.5	Electrical Operation and Wiring Tests	6
8	Retesting.....	6