



ANSI/NEMA C12.9-2005

American
National Standard
for Test Switches
for Transformer-
Rated Meters



National Electrical Manufacturers Association
1300 North 17th Street, Suite 900 • Rosslyn, VA 22209
www.NEMA.org

Currently in preview, click buy full version





ANSI C12.9-2005

American National Standard

for Test Switches for
Transformer-Rated Meters

Currently in preview, click buy full version



ANSI C12.9-2005
Revision of
ANSI C12.9-1987

American National Standard
For Test Switches for Transformer-Rated Meters

Secretariat:

National Electrical Manufacturers Association

Approved April 15, 2005

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.

NEMA 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, direct 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 has no 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 verify, 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 issuer or maker of the statement.

AMERICAN NATIONAL STANDARD

Approval of an American National Standard requires verification by ANSI 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 much more than a simple majority, but not necessarily unanimity. Consensus requires that all views and objections be considered, and that a 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 the name has 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 in 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, Rosslyn, VA 22209

© Copyright 2005 by 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.

This page intentionally left blank.

Contents

	Page
Foreword	v
1 Scope	1
2 Definitions	1
2.1 Short-circuiting switch	1
2.2 Test jack	1
2.3 Test jack switch	1
2.4 Test plug	1
2.5 Voltage switch	1
3 Standard ratings	1
3.1 Current	1
3.2 Voltage	1
4 General requirements	1
4.1 Material and workmanship	1
4.2 Nameplates	1
4.3 Movable parts	2
4.4 Number of poles	2
4.5 Alternative switch arrangements	2
4.6 Provision for test plugs	4
4.7 Insulating carriers	4
4.8 Wiring terminals and test clips	4
4.8.1 Wiring terminals	4
4.8.2 Test clips	6
4.9 Mounting holes	6
4.10 Cover	6
4.10.1 General	6

4.10.2	Cover holes	7
4.10.3	Cover studs	7
4.11	Acceptable spacings	7
4.11.1	Barriers	7
4.11.2	Dimensions	7
5	Performance	7

Tables

1	Minimum acceptable spacings	7
----------	-----------------------------------	---

Figures

1	Alternative arrangements and dimensions for four-, seven-, and ten-pole switches.....	3
2	Alternative arrangements and dimensions for four-, seven-, and ten-pole switches.....	5
3	Alternative arrangements and dimensions for four-pole switches, also applicable for seven- and ten-pole switches	6
4	Performance test wiring diagram	9

Foreword (This Foreword is not part of American National Standard C12.9-2005.)

This standard is a revision of American National Standard for Test Switches for Transformer-Rated Meters, ANSI C12.9-1987.

This standard was developed by the Accredited Standards Committee on Electricity Metering, C12, for full consensus approval as an American National Standard. This revised version supersedes ANSI C12.9-1987.

This standard covers the dimensions and functions of meter test switches for transformer-rated watt-hour meters when used in conjunction with instrument transformers.

Suggestions for improvements of this standard will be welcomed. They should be in the form of a proposed change of text, together with appropriate supporting comments.

Comments on standards and requests for interpretations should be addressed to:

ANSI Committee C12 Secretary
National Electrical Manufacturers Association
1300 North 17th Street
Rosslyn, Virginia 22209

At the time this standard was completed, the American National Standards Committee C12 had the following membership:

Tom Nelson, Chairman
Carin Bernstiel, Secretary

Organization Represented:

Name of Representative:

American Public Power Association

C. Gomez

Edison Electrical Institute

L. Kotewa
 J. McEvoy
 J. Mining
 T. Morgan
 D. Y. Nguyen
 L. Pananen

Institute of Electrical and Electronics Engineers

H. Millican

Measurement Canada (Liaison No Vote)

V. Nguyen

National Electrical Manufacturers Association

M. Anderson
 E. Beraset
 C. Crittenden
 F. Marta
 S. Weikel

National Institute of Standards and Technology

T. Nelson

NARUC

J. Ruehl

Underwriters Laboratories, Inc.

R. Breschini

Independent Members:

B. Hughes

A. Moise

A. Snyder

At the time this standard was completed, Subcommittee 15 of ANSI Committee C12, which developed and revised this standard, had the following membership:

Francis Marta, Chairman

Carin Bernstiel, Secretary

Organization Represented:

Name of Representative:

Florida Power and Light Company

J. McEvoy

Florida Power and Light Company

J. DeMars

GE Consumer and Industrial

C. Crittenden

Houston Lighting and Power

J. Darnell

Meter Devices Company

J. Gagnon

Milbank Manufacturing

S. Glasgow

National Institute of Standards and Technology

T. Nelson

Oncor

G. Hendley

Pacific Gas and Electric

D. Y. Nguyen

Pacificorp

L. Pananen

Public Service Electric and Gas

D. Ellis

Austin Energy

H. Millican

Center for Neighborhood Technology

L. Kotewa

Central Hudson Gas and Electric

R. Lokys

Cooper B-Line

F. Marta

Duke Energy

W. Ray

Malemezian Consulting

E. Malemezian

Ekstrom

M. Lewis

Elster Electricity

S. Weikel

Ercot

D. Tandon

Schlumberger Electricity

A. Snyder

Siemens Energy & Automation

J. Young

Siemens Energy & Automation

W. Rose

The Durham Company

M. Shoemaker

For Test Switches for Transformer-Rated Meters

1 Scope

This standard is intended to encompass the dimensions and functions of meter test switches used with transformer-rated watt-hour meters in conjunction with instrument transformers.

2 Definitions

2.1 short-circuiting switch: A single-pole double-throw (make-before-break) transfer switch used to transfer current away from the meter.

2.2 test jack: A spring-jaw receptacle in the current element of a test switch that provides a bipolar test connection in the metering current circuit without interruption of the current circuit.

2.3 test jack switch: A single-pole single-throw disconnect switch used in conjunction with a test jack to provide a parallel current path during normal operating conditions.

2.4 test plug: A bipolar mating plug to a test jack for inserting instrumentation into the metering current circuit.

2.5 voltage switch: A single-pole single-throw switch used to open or close a voltage circuit.

3 Standard ratings

3.1 Current

The current rating shall be 20 A minimum.

3.2 Voltage

The voltage rating shall be 300 V or 600 V.

4 General requirements

4.1 Material and workmanship

The test switch and its components shall be substantially constructed of suitable material in a workmanlike manner.

4.2 Nameplates

Nameplates are not required on these test switches, but a manufacturer's identifying marking (such as catalog number, trademark, etc.) shall be stamped, printed, affixed, or cast in a convenient place on each test switch. When required, a warning label indicating hidden internal jumpers should be affixed.