

NEMA C12.30 TR-2013

Test Requirements for: Metering Devices Equipped with Service Switches



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*Test Requirements for:
Metering Devices Equipped with Service Switches*

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Foreword

With increasing emphasis being placed on technical reports both in the European Community and internationally, it is important to have an established mechanism for the registration of such technical reports. This is particularly important in areas of developing technology that may eventually be covered by International Standards but for which the only documentation currently available is an International Technical Report.

Accredited standards developers develop technical reports that are useful in conjunction with American National Standards. These are often informational or tutorial in nature, or give methods for application of an American National Standard. Registration of such documents is undertaken by the American National Standards Institute (ANSI) to encourage widespread use and acceptance, not only of the technical report, but also of the related American National Standard.

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With the advent of AMI (Advanced Metering Infrastructure) systems, several meter manufacturers have introduced residential meters with a built in service switch. The current ANSI standards do not adequately cover these types of meters. This technical report provides a testing basis to these types of meters with the intention to lead to a standardized method for testing electrical meters with an integral service switch.

Sections specific to ANSI C12.1-2008 have been referenced within the various tests of this document.

This technical report was developed within a working group under the guidance of ANSI C12 Subcommittee 1 with the intention for it to be used in conjunction with the ANSI C12.1-2008 standard. The use of both will help facilitate proper testing of meters with integral service switches.

This technical report was processed and approved for submittal to ANSI by Accredited Standards Committee for Electricity Metering, C12. At the time the committee approved this technical report, the C12 Committee had the following members:

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Other contributions:

- Larry O'Dell, Itron, Inc. Original proposal. (Reference.: "Document to Establish Scope for Standard Covering Meters with Built in Disconnect Switches", April 1, 2008.)
- Brent Cain, Itron, Inc. Submitted to ANSI C12 SC1. (Reference.: "Suggested Additions to the Next Revision of ANSI C12.1-2008", October 8, 2008.)
- NEETRAC. Tests performed on various Service Switch meters were taken into consideration when developing this technical report. (Reference.: "Integral Disconnect Switches for Single-Phase Revenue Meters. Recommendations for ANSI C12.1", October 2010.)

Suggestions for improvement to this technical report are welcome. They should be sent to:

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Test Requirements for Metering Devices Equipped with Service Switches

1 Scope

This technical report identifies test requirements for meters containing a Service Switch. Most of the tests included in this report are tailored to fit Service Switch type meters and originate from the ANSI C12.1-2008 standard. Sections within the ANSI standard have been referenced within these tests where applicable. The intent is to use this technical report in conjunction with C12.1-2008. Other tests that are specific to the Service Switch have been added for completeness.

2 References

This technical report shall be used in conjunction with the following standard.

ANSI C12.1-2008	<i>Code for Electricity Metering</i>
IEC 60068-2-6:2012	<i>Environmental testing – Part 2-6: Tests – Test Fc: Vibration (sinusoidal)</i>
IEC 60068-2-27:2008	<i>Basic environmental testing procedures – Part 2-27: Tests – Test Ea and guidance: Shock</i>
IEC 61000-4-4:2012	<i>Electromagnetic compatibility (EMC) – Part 4-4: Testing and measurement techniques – Electrical fast transient/burst immunity test</i>
IEEE C37.90.1-2002	<i>IEEE Standard Surge Withstand Capability (SWC) Tests for Relays and Relay Systems Associated with Electric Power Apparatus</i>

International Safe Transit Association, Test Procedure 1A, Performance Test for Individual Packaged - Products Weighing 150 lb. (68 kg) or Less, (revision date: 2001), Vibration and Shock

3 Definitions

For additional definitions, see ANSI C12.1.

Service Switch

A built-in switch that allows the electric utility to remotely disconnect/reconnect all phases of the electric service at a customer location by isolating the line side terminals of the meter from the load side terminals. Also referred to as a Remote Connect/Disconnect Switch.

Service Switch Check

A verification of the operation of the Service Switch by performing a Service Switch Cycle.

Service Switch Cycle

One open and one close operation of the Service Switch.

State, Closed

The state of the Service Switch, whereby current can flow through all phases of the Service Switch.