



**ANSI C12.30-2022**

**American National Standard  
for Electric Meters—  
Test Requirements for  
Meters Equipped with Service Switches**

Secretariat:

**National Electrical Manufacturers Association**

Approved: December 5, 2022

**American National Standards Institute, Inc.**

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## Foreword

This standard provides a testing basis to types of meters with an integral service switch.

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

This standard 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 standard. Other contributions were provided by:

- Larry O'Dell, Itron, Inc. (via Brent Cain) from the original proposal on April 1, 2008.
- Tests performed by NEETRAC on various service switch meters that were included in their report *Integral Disconnect Switches for Single-Phase Revenue Meters*.
- Johnson Electric through email submission.

This work and contributions will help facilitate proper testing of meters with integral service switches.

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

Tom Nelson, Chair ASC C12  
Larry Kotewa, Vice Chair ASC C12  
Paul Orr, Secretary

*Name of Representative:*

*Organization Represented:*

Kerry Barnette	Duke Energy
Frank Boudreau	Radian Research
Brent Cain	Itron, Inc.
Joel Canine	Radian Research
Curt Crittenden	Aplara
Andrew Dudding	Sensus, A Xylem Brand
David Ellis	Public Service Electric & Gas
Shawn Glasgow	Milbank Manufacturing Company
Sean Gorman	Baltimore Gas & Electric Company
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Zach Hughes	Oncor Electric Delivery Company LLC
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Bin Lu	Sask Power
Don MacArthur	Schweitzer Engineering Laboratories
Avy Moise	Future DOS R&D Inc.
Tom Nelson	NIST
D. Young Nguyen	Pacific Gas & Electric Company
Dan O'Dell	Xcel Energy
Patrick Zydatek	Schneider Electric
Jim Reed	Eurofins MET Labs
Earl Rhoades	Alabama Power Company
Jean-Luc Sabourin	Hydro-Québec
Aaron Snyder	EnerNex
Eduardo Sotolongo	Florida Power & Light Company

Kostas Tolios  
Don Tucker  
Lea Wren

Independent  
Ercot  
Wathour Engineering Company, Inc.

The working group creating the ANSI C12.30-2022 standard was composed of the following:

Brent Cain, Itron (Work Group Chairperson)  
Curt Crittenden, Aclara  
Greg Dickson, Itron  
Avy Moise, FutureDOS R&D/ECMX  
Dan Nordell, Xcel Energy  
Derl Rhoades, Alabama Power  
Andrew Dudding, Sensus (Xylem, Inc)  
John Voisine, Landis+Gyr

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

NEMA Technical and Industry Affairs Department  
National Electrical Manufacturers Association  
1300 North 17<sup>th</sup> Street, Suite 900  
Rosslyn, VA 22209

## Test Requirements for Meters Equipped with Service Switches

### 1 Scope

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

### 2 References

This standard shall be used in conjunction with the following standards. Refer to latest edition of the following documents, except where noted.

ANSI C12.1-2014	<i>Code for Electricity Metering</i>
IEC 60068-2-6	<i>Environmental testing – Part 2-6: Tests – Test Fc: Vibration (sinusoidal)</i>
IEC 60068-2-27	<i>Environmental testing – Part 2-27: Tests – Test Ea and guidance: Shock</i>
IEC 61000-4-4	<i>Electromagnetic compatibility (EMC) – Part 4-4: Testing and measurement techniques – Electrical fast transient/burst immunity test</i>
IEEE C37.90.1	<i>IEEE Standard for Surge Withstand Capability (SWC) Tests for Relays and Relay Systems Associated with Electric Power Apparatus</i>

International Safe Transit Association, Test Procedure 10, Performance Test for Individual Packaged-Products Weighing 150 lb. (68 kg) or Less (revision date: 2011), Vibration and Shock

### 3 Definitions

For additional definitions, see ANSI C12.1.

**Back-Feed Voltage:** A voltage applied to the load terminals of a meter by a local power source (generator) that would appear at the line side terminals if the service switch were in the closed state.

**Service Switch:** A switch component built into the meter enclosure that allows disconnection/connection of all phases of the electric service at a customer location by isolating/connecting the line side terminals of the meter from/to the load side terminals. Also referred to as a remote connect/disconnect switch.

**Service Switch Check:** 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, where the discontinuity/continuity of the switch is verified in each state.

**State, Closed:** A state of the service switch, whereby current can flow through all phases of the service switch.

**State, Open:** A state of the service switch, whereby current cannot flow through any phase of the service switch.