Approved as an American National Standard
ANSI Approval Date: December 2, 2021

ANSI/NEMA SM 31000-7-2021

Electrical Submeter—Current Sensor Accuracy

Published by

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

www.nema.org

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Foreword

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This standard was originally developed by the NEMA BS-SM Working Group and announced in ANSI (PINS) under the NEMA ESM1-7 designation. NEMA changed its designation policy in 202[illegible] and subsequently changed the designation of the entire ESM1 standards series to SM 31000.

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Section 1
General

1.1 Scope

SM 31000-7 covers metrological requirements and associated testing for current sensors used with electrical energy submeters. The standard applies to multiple sensor technologies with a variety of outputs. These sensors enable current measurement for AC and DC energy submetering.

The standard applies to indoor and outdoor applications and covers temporary and permanently installed sensors for AC and DC applications.

The SM 31000 standard is broken into the following parts:

a. SM 31000-1 General Requirements
b. SM 31000-2 AC Active Energy Accuracy
c. SM 31000-4 Additional Measurements Accuracy
d. SM 31000-5 DC Energy Accuracy
e. SM 31000-6 Power Quality Measurements and Accuracy
f. SM 31000-7 Current Sensor Accuracy
g. SM 31000-8 Demand Metering
h. SM 31000-9 Field Testing
i. SM 31000-10 Voltage Sensor Accuracy

1.2 Normative References

In addition to the requirements of this part, products certified to this standard shall also meet applicable requirements from the following other SM 31000 parts.

a. SM 31000-1 General Requirements
b. SM 31000-2 AC Active Energy Accuracy

1.3 Informative References

a. Canadian Electricity and Gas Inspection Act (R.S. 1985, c. E-4), subsection 9(4)
b. Canadian Electricity and Gas Inspection Regulations (SOR/86-131), subsection 12(1)
c. CAN/CSA/IEC-61869/C61869-1:14 Instrument transformers – Part 1: General requirements
d. CAN/CSA/IEC-61869/C61869-2:14 Instrument transformers – Part 2: Additional requirements for current transformers
e. CAN/CSA/IEC-61869/C61869-4:14 Instrument transformers – Part 4: Additional requirements for combined transformers
f. IEC 60044-8:2002-07: Instrument transformers – Part 8: Electronic current transformers
g. IEEE C57.13-2008: IEEE Standard Requirements for Instrument Transformers
h. mA Current transformer references
    1. Measurement Canada, LMB-EG-07: Specifications for Approval of Type of Electricity Meters, Instrument Transformers and Auxiliary Devices
    2. Measurement Canada, S-E-07: Specifications for the Approval of Measuring Instrument Transformers