CERTIFICATION Informs
An Urgent Bulletin from CSA International

Ref No: I10-071

Verification Service Announcement No. 47
(Supersedes Verification Service Announcements Nos. 2 and 2A)

New Verification Service available as of today

Date: June 24, 2010

Apply any time to have your products evaluated

Announcing: CSA C390-10 Test methods, marking requirements and energy efficiency levels for three-phase induction motors, 4th Edition

Class No: 8811 01, ENERGY EFFICIENCY - Motors - Three Phase Induction

To purchase the Standard, visit us at www.shopcsa.ca

Who is affected?

Manufacturers of AC 3ph induction motors rated 1 to 500hp.

What do you do?

1. This publication provides for new energy efficiency verification services, which are now available. Your currently verified product designs are not affected.
2. Please contact CSA engineering staff if you have questions or need information concerning this publication and how it applies to you.
3. If you would like to initiate an energy efficiency verification project, please contact CSA engineering staff to arrange for an evaluation of your product design. Please supply your CSA engineer with appropriate supporting documentation*. If testing is needed, we will inform you of the samples required.

*Technical information as well as company name, address, factory locations and CSA file number or master contract number (if assigned) when applying.

Introduction:

CSA Standard C390-10 supersedes the previous edition of CSA Standard C390-98.

AC 3ph induction motors evaluated in Accordance with Attachments 1, 2 and 3, "Guide to the CSA Energy Efficiency Verification Service for AC 3ph induction motors", are eligible to bear the CSA Energy Efficiency Verification Mark.

Background and Rationale:

CSA Standard C390-10 was developed at the request of the industry and other stakeholders interested in reducing energy consumption.

The Standard defines minimum energy efficiency levels for AC 3ph induction motors, open or enclosed, with output rated from 1 to 500hp.

Major Revisions:

The 4th edition of the Standard includes minimum nominal efficiency levels for "energy-efficient" and "premium efficiency" motors with output rated from 1 to 500hp for both at 50Hz and 60Hz frequency.

Clarifications to the testing methodology are added and revisions to the accuracy of testing equipment.

Definitions are also added for clarity. Motors with NEMA Design B and C or IEC Design N and H, normal and high locked rotor torque, are included in the scope of the Standard.

For questions specific to your file or products contact your regular CSA International engineering staff.
Go to http://directories.csa-international.org/ and enter your Master Contract # and the class numbers associated with this Informs to view your certified products.

For technical questions on this Informs

Contact Jean-Pierre Boivin
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ATTACHMENT 1

GUIDE TO THE CSA ENERGY EFFICIENCY VERIFICATION SERVICE – AC 3ph induction motors

1. Scope

1.1 The scope of the CSA energy efficiency verification service covers AC 3 ph induction motors specified in CSA Standard C390-10.

2. Requirements

2.1 The technical requirements for the regulated AC 3 ph induction motors are contained in Standard C390-10

2.2 Each manufacturing facility is required to have adequate controls in place to ensure manufacturing consistency and ultimately a consistent product performance with respect to energy usage.

2.3 The criteria for the assessment of such controls are contained in the Product Control Checklist provided in Attachment 2.

3. Marking

3.1 Conforming products manufactured at facilities listed by CSA International will be authorized to bear the CSA Energy Efficiency Marking shown below, which may be either:

A. Incorporated by the manufacturer into other marking on the product, or
B. Applied in the form of a special, serialized label available from CSA International.

OR

OPTION A **OPTION B**

Figure 1

CSA Energy Efficiency Marking

3.2 The CSA Energy Efficiency Marking is in addition to all other marking required by the energy efficiency standards, e.g. specific performance ratings. The CSA Verification Mark, forming a part of the Energy Efficiency Marking, must be at least 0.25 in by 0.25 in. Where limitations of space prevent the use of the CSA Verification Mark of the minimum size, requests from the manufacturer to use a Mark of smaller dimensions will be considered by CSA International on the basis of legibility. There is no minimum size specified for the accompanying text, other than that it must be legible.

3.3 In cases where there are problems in using either option A or B above due to limited available space, the following option C will be permitted.

OPTION C

Figure 2

CSA Energy Efficiency Marking

The "E" qualifier shall be 1/4 the height of the CSA Verification Mark, or larger if necessary to be clearly distinguishable and legible, and be recognized by the regulatory authorities as an indicator of compliance with Energy Efficiency Legislation.

4. Applications

4.1 Applications for the CSA energy efficiency verification service may be made at any of the CSA office. Please contact CSA International Customer Service Centre.*Call us from anywhere in North America by dialing 1-866-797-4272 from 8 a.m. to 5 p.m. EST, Monday to Friday. (Dial 416-747-2661 if calling from outside North America) Or send an e-mail to mailto:client.services@csa-international.org*

4.2 The following information is required with each application:

- Company names and locations of the head office and all factories;
- A list of all AC 3 ph induction motors to be submitted, by type, model designation and the applicable performance ratings. See Illustration 1;
- Information on test facilities used or to be used by the applicant and on available performance test data;

4.3 To facilitate the assessment of in-plant controls of each factory, the applicant will be asked to complete the Product Control Checklist (Attachment 2) and return it to CSA International.

5. Product Testing

5.1 The acceptance of products under this service will be based on the results of tests to the applicable requirements.

5.2 The AC 3 ph induction motors will be evaluated through testing and/or review of test data on representative samples, as deemed necessary by CSA International.

5.3 Testing may be carried out at any testing facility, including a manufacturer's own testing facility, which has been evaluated and found acceptable by CSA International.

6. Qualification of Manufacturers' Testing Facilities

6.1 Manufacturers who have their own testing facilities and wish to have their test data accepted by CSA may apply for qualification of these facilities for participation in the following CSA programs in accordance with the requirements of Standard ISO/IEC 17025-2005 “General Requirements for the Competence of Calibration and Testing Laboratories”:

- Witness Manufacturer’s Testing Program for Certification (WMTC)
- Supervised Manufacturer’s Testing for Certification (SMTC)
- Category for Certification Program (CPC).

6.2 Testing facility qualification will be conducted in accordance with Standard ISO/IEC 17025-2005 with particular attention to:

- Test equipment specifications,
- Test equipment accuracy, calibration and calibration traceability,
- Competence of the test personnel,
- Environmental conditions for testing,
- Test procedures and measurement techniques,
- System for documentation of test results.

6.3 Products for testing to be witnessed will be selected by CSA International on the basis of representative size and type of motors. In addition to items 6.1 and 6.2 above, each manufacturer will be asked to provide the information required in Testing Information (Attachment 3).

7. Qualification of Other Laboratories

7.1 At the manufacturer’s request CSA International will qualify other, independent facilities used by the manufacturer under the CSA Agent Program – Testing (APT) CSA International will witness the energy efficiency testing at these facilities.

8. Reference Testing Facility

8.1 For each group of products covered by a particular performance standard, one qualified testing facility will be, designated by CSA International as the Reference Testing Facility.

8.2 In that capacity, the Reference Testing Facility will act as the official CSA reference testing facility for such products, for the purpose of product qualification testing, cross-testing with other testing facilities, resolution of test-related disputes, and for the Challenge Testing procedure described in item 15 below.

8.3 In product areas for which CSA International has no testing capability, other facilities may be selected and qualified as Reference Testing Facilities.

9. Marking Authorization

9.1 Upon successful completion of testing and/or review of test data on specified AC 3 ph induction motors, CSA International will authorize the manufacturer to apply the Energy Efficiency Marking to the Verified AC 3ph motors and will update the CSA product listing accordingly.

10. CSA Service Agreement

10.1 Manufacturers who are authorized to display the Energy Efficiency Marking will be required to sign an agreement with CSA International to address the use of the CSA Verification Mark, acceptable advertising, access to facilities and records, follow-up, annual fees, product re-testing, and challenge testing.

11. Follow-up Visits

11.1 A minimum of one visit to each factory will be carried out each year to monitor the manufacturer's:

- Product control measures;
- Use of the Energy Efficiency Marking; and
- Testing facilities, as designated by the manufacturer and qualified by CSA.

11.2 Where possible and applicable, these visits will be combined with the ongoing safety certification follow-up.

11.3 Product samples required for re-testing, item 12 below; will be selected and sealed by CSA International staff during these visits.

12. Product Re-testing

12.1 To ensure a consistent performance of CSA Verified products, motors samples selected and sealed, as necessary, by CSA International or its agents from a manufacturer's production or stock, during a follow-up visit, will be re-tested to the specified requirements.

12.2 The total number of motors to be re-tested annually will be established so as to agree closely with the existing industry practices.

12.3 Re-testing may be conducted at the Reference Testing facility or may be witnessed by CSA International staff at any other testing facility qualified by CSA International, including the manufacturer's own testing facility.

12.4 The results of re-testing will be reported to CSA International within 90 days from the time that samples are selected. Failure to report, except in special circumstances, will result in product delisting.

12.5 If a motor fails to meet its original energy efficiency performance ratings, the testing facility will notify CSA International immediately to initiate the selection of a second, identical sample. All additional costs associated with the selection of the second sample, by CSA International or its agents, will be borne by the manufacturer.

(The manufacturer has the option to initially request CSA International to select two identical samples instead of one and keep the second sealed sample in storage, in case the first one fails.)

12.6 The second sample will be selected and tested within 45 days of the first failure or the initial results will stand.

12.7 A second failure will result in delisting of energy efficiency records for a given model. A representative sample will then be chosen from another line to verify that it complies with the stated ratings. This process will continue, if necessary, for other listed lines of AC 3 ph induction motors until confidence is re-established.

13. Periodic Cross-Testing

13.1 Where the re-testing is conducted by a manufacturer's own testing facility or at an outside testing facility other than the Reference Testing Facility, a periodic cross-testing will be carried out at least once every three years for each such facility.

13.2 One sample re-tested by the testing facility in the presence of CSA International staff, will be sealed and shipped for testing to the Reference Testing Facility. The results of this cross-testing will be judged by CSA International on the basis of known measurement uncertainties for that particular product.

14. CSA Service Charges

14.1 All CSA charges related to evaluation of testing facilities, initial testing and re-testing (if carried out by CSA International), review of data, including re-testing data, and documentation of the results, are accrued on a time/cost basis and are invoiced on completion of each project.

14.2 The cost of the CSA International follow-up visits will be charged as an annual fee reflecting the actual costs of the follow-up and incorporating the savings achieved through combining of work.

15. Challenge Testing

15.1 A challenge process is available to any manufacturer or other party wishing to challenge the performance ratings of any "energy performance verified" product.

15.2 The challenger must make an application to CSA International and must initially cover all costs associated with obtaining suitable test samples, as well as the costs of all necessary testing at the Reference Testing Facility.

15.3 The results of the challenge process are treated as if they were obtained in the course of scheduled re-testing.

15.4 Upon a failure of a motor to meet its energy efficiency and performance ratings CSA International will:

(1) Notify the manufacturer immediately;

(2) Initiate the second sample selection process as per the re-testing procedure above.

15.5 Upon a second failure CSA International will:

(1) Refund monies paid by the challenger and invoice the motor manufacturer for all costs associated with the challenge test;

(2) Proceed with de-rating of the motor or with delisting.

ATTACHMENT 2

CSA INTERNATIONAL PRODUCT CONTROL CHECKLIST

This form must be completed by the manufacturer and returned to CSA International before the final authorization to use the CSA Energy Efficiency Marking may be given.

1. Company Name: _____

   Factory Location: _____

   Product Type(s): _____

2 List the critical product features that the manufacturer must control to maintain a consistent product performance with respect to energy efficiency.

_____

_____

3. Describe the existing controls for these critical features and provide copies of the appropriate documentation as evidence.

_____

_____

4 Person responsible for the overall operation of these controls

Name: _____

Position/Title: _____

Location _____

5. Does this person have the authority to perform this function effectively? Please elaborate.

_____

_____

6. How is the application of the CSA Energy Efficiency Marking controlled to ensure that it appears only on conforming products?

_____

_____

Signature: _____ Title: _____

Date: _____ _____

ATTACHMENT 3

TESTING INFORMATION

To assess your facility for conformance with the applicable CSA standard, the submittal information on the test facility shall include the following:

A) Testing Facility and Test Set-Up:

1. A drawing showing the motor test bench and the test method arrangement used.

2. A list of instruments used for the following measurements as applicable:

   (a) Temperature
   (b) Stator winding resistance (ohms, milliohms)
   (c) Electrical measurements (Volts, Amps, Watts, Hz, etc)
   (d) Torque and rotational speed

   The list shall show the instrument manufacturer's name, model number, accuracy and capability.

3. Photographs showing the test set-up, test stations, measurement instruments, and test facility.

B) Calibration:

Please provide calibration sheets for all applicable testing equipment, a calibration schedule for this equipment and confirmation that the calibration is traceable to National standards.

C) Test Methods:

Please provide a description of the test methods that were used in determining energy efficiency test results. Please note that test methods and energy efficiency calculations shall be in accordance with the applicable standards.

Also, please provide a printout of test record(s) showing the various parameters (data) which were recorded during the testing together with an explanation of how the data was used for the computation of energy efficiency ratings. This should be submitted for each model listed in Illustration 1.

ILLUSTRATION 1 (AC 3 ph induction motors)

Class 8811 01 (Energy Efficiency Verification Service)

_____ (Client Name)
_____ (Address)
_____

MOTORS - Three-Phase Induction (output Power in hp or kW)

Enclosure: _____ (Totally Enclosed or Open)
Model: _____

Indicate the NEMA Design A, B or C (IEC Design N or H): _____ (locked-rotor torque Normal or High)

QUOTED EFFICIENCY VALUE (%)

No. of Poles	**8**	**6**	**4**	**2**
Power in hp/ kW				
1/0.75				
1.5/1.1				
2/1.5				
3/2.2				
5/3.7				
7.5/5.5				
10/7.5				
15/11				
20/15				
25/18.5				
30/22				
40/30				
50/37				
60/45				
75/55				
100/75				
125/90				
150/110				
200/150				
250/185				
…../….				
500/375				