Energy Technology List

Department for Energy Security & Net Zero

Product application checklist

Please complete in BLOCK CAPITALS

Line Operated AC Motors

Manufacturer/supplier name: .....

Applicant's name: .....

Telephone number: .....

Product information

Product name: .....

Model number: .....

Please complete each section of this form based on your product's characteristics. Incomplete or incorrect data could affect the processing of your product application.

Each product application should be made on a separate form unless a product's design characteristics are common to all the products. In this instance a single application can be made for multiple products.

1. Product testing and certification	No	Yes

Where type testing has been used to demonstrate product performance please ensure that the information supplied is sufficient to demonstrate the performance of all products for which applications are being made.

1.1 **Has the product been tested in accordance with a low uncertainty method according to Table 2 (Induction Machines) of BS EN 60034-2-1:2007 OR method 2-1-1B according to Table 2 (Induction Machines - preferred testing methods) of BS EN 60034-2-1:2014 "Rotating electrical machines – Part 2-1: Standard methods for determining losses and efficiency from tests (excluding machines for traction vehicles)"?** ☐ ☐

1.2 **Does the product have an appropriate Conformity Assessment mark?** ☐ ☐

1.3 **How was the product(s) performance tested? (Please select one)**

a) Tested in the manufacturer's in-house laboratory, in accordance with a registered Quality Management System (i.e. 'self-tested') ☐

b) Tested in the manufacturer's in-house laboratory, in accordance with a registered Quality Management System and a representative sample of the test data has been cross-checked and verified by an independent body (i.e. 'self-tested and verified or cross-checked by an independent body'). ☐

c) Tested in a laboratory either in house or on-site, witnessed by an independent body (i.e. 'witnessed testing') ☐

d) Tested by an independent laboratory (i.e. 'independent testing') ☐

e) Representative model/s used ☐

Please refer to the ETL Testing Framework for details of the requirements that must be satisfied for each of these product testing options.

1.4 **Where product testing has been done in accordance with a registered Quality Management System, what is its registration number?**

.....

1.	Product testing and certification (continued)	No	Yes

1.5 **Where a representative sample of the test data has been cross-checked and verified by an independent body:**

a) What is the name of the independent laboratory?

.....

b) What is the laboratory's registration number (where accredited)?

.....

1.6 **Where product testing has been witnessed by an independent body, what was the name of the witness?**
(Please include contact details).

.....

1.7 **Where products have been tested by an independent laboratory:**

a) What is the name of the independent laboratory?

.....

b) What is the laboratory's registration number (where accredited)?

.....

1.8 **If representative testing has been used, what are the 'representative models'?**

ETL Product ID number	Product name and model number
.....	.....
.....	.....
.....	.....
.....	.....
.....	.....
.....	.....
.....	.....

The representative models must be selected by dividing the range of products into groups of models with similar design characteristics, and testing a model in each group. The performance of each model in the group must be predicted using a validated mathematical model. As a minimum, at least one model must be tested in each range of products

2.	Product type	No	Yes

2.1 **Is the product a totally enclosed AC motor?** ☐ ☐

2.2 **How many poles does the product have?**

a) 2 ☐

b) 4 ☐

c) 6 ☐

d) 8 ☐

2.3 **What is the product's rating in kW?**

.....

2.4 **What is the product's frame size/number?**

.....

3.	Product features	No	Yes
3.1	**Does the product have:**		
	a) A maximum rated operating voltage above 50 V up to 1,000 V	☐	☐
	b) A 'Duty type S1 – Continuous running duty' rated power output that is greater than or equal to 0.12kW and, in the case of three-phase line operated AC motors, less than or equal to 1000 kW as defined in Section 4.2.1 of BS EN 60034-1: 2010.	☐	☐
	c) A built in cooling fan that uses a cooling method that is classified as 'IC 410', 'IC 411' or 'IC 418' according to BS EN 60034-6:1994	☐	☐
3.2	**Is the product rated at 50 Hz in accordance with BS EN 60034-1:2010 (or IEC 60034-1: 2010)?**	☐	☐
3.3	**Does the product's power rating match one of the entries in the primary or secondary series defined in Table 7 of IEC 60072-1: 1991-02 (sixth edition),** ***"Dimensions and output series for rotating electrical machines – Part 1: Frame numbers 56 to 400 and flange numbers 55 to 1080"?***	☐	☐

4. Product performance

	No	Yes
4.1. Does the product meet the relevant performance thresholds set out in the table below?	☐	☐

Table 1 *Tier 1 from May 2020 performance thresholds for three-phase line operated AC motors from 0.12 kW to 1000 kW (including Ex-eb increased safety motors in red).*

Rated Power Output (kW)	% Efficiency at full load							
	2 Pole		4 Pole		6 Pole		8 Pole	
0.12	≥ 60.8	≥ 53.6	≥ 64.8	≥ 59.1	≥ 57.7	≥ 59.1	≥ 50.7	≥ 39.8
0.18	≥ 65.9	≥ 60.4	≥ 69.9	≥ 64.7	≥ 63.9	≥ 64.7	≥ 58.7	≥ 45.9
0.2	≥ 67.2	≥ 61.9	≥ 71.1	≥ 65.9	≥ 65.4	≥ 65.9	≥ 60.6	≥ 47.4
0.25	≥ 69.7	≥ 64.8	≥ 73.5	≥ 68.5	≥ 68.6	≥ 68.5	≥ 64.1	≥ 50.6
0.37	≥ 73.8	≥ 69.5	≥ 77.3	≥ 72.7	≥ 73.5	≥ 72.7	≥ 69.3	≥ 56.1
0.4	≥ 74.6	≥ 70.4	≥ 78.0	≥ 73.5	≥ 74.4	≥ 73.5	≥ 70.1	≥ 57.2
0.55	≥ 77.8	≥ 74.1	≥ 80.8	≥ 77.1	≥ 77.2	≥ 77.1	≥ 73.0	≥ 61.7
0.75	≥ 83.5	≥ 77.4	≥ 85.7	≥ 79.6	≥ 82.7	≥ 78.9	≥78.4	≥ 66.2
1.1	≥ 85.2	≥ 79.6	≥ 87.2	≥ 81.4	≥ 84.5	≥ 81.0	≥ 80.8	≥ 70.8
1.5	≥ 86.5	≥ 81.3	≥ 88.2	≥ 82.8	≥ 85.9	≥ 82.5	≥ 82.6	≥ 74.1
2.2	≥ 88.0	≥ 83.2	≥ 89.5	≥ 84.3	≥ 87.4	≥ 84.3	≥ 84.5	≥ 77.6
3	≥ 89.1	≥ 84.6	≥ 90.4	≥ 85.5	≥ 88.6	≥ 85.5	≥ 85.9	≥ 80.0
4	≥ 90.0	≥ 85.8	≥ 91.1	≥ 86.6	≥ 89.5	≥ 86.6	≥ 87.1	≥ 81.9
5.5	≥ 90.9	≥ 87.0	≥ 91.9	≥ 87.7	≥ 90.5	≥ 87.7	≥ 88.3	≥ 83.8
7.5	≥ 91.7	≥ 88.1	≥ 92.6	≥ 88.7	≥ 91.3	≥ 88.7	≥ 89.3	≥ 85.3
11	≥ 92.6	≥ 89.4	≥ 93.3	≥ 89.8	≥ 92.3	≥ 89.8	≥ 90.4	≥ 86.9
15	≥ 93.3	≥ 90.3	≥ 93.9	≥ 90.6	≥ 92.9	≥ 90.6	≥ 91.2	≥ 88.0
18.5	≥ 93.7	≥ 90.9	≥ 94.2	≥ 91.2	≥ 93.4	≥ 91.2	≥ 91.7	≥ 88.6
22	≥ 94.0	≥ 91.3	≥ 94.5	≥ 91.6	≥ 93.7	≥ 91.6	≥ 92.1	≥ 89.1
30	≥ 94.5	≥ 92.0	≥ 94.9	≥ 92.3	≥ 94.2	≥ 92.3	≥ 92.7	≥ 89.8
37	≥ 94.8	≥ 92.5	≥ 95.2	≥ 92.7	≥ 94.5	≥ 92.7	≥ 93.1	≥ 90.3
45	≥ 95.0	≥ 92.9	≥ 95.4	≥ 93.1	≥ 94.8	≥ 93.1	≥ 93.4	≥ 90.7
55	≥ 95.3	≥ 93.2	≥ 95.7	≥ 93.5	≥ 95.1	≥ 93.5	≥ 93.7	≥ 91.0
75	≥ 95.6	≥ 93.8	≥ 96.0	≥ 94.0	≥ 95.4	≥ 94.0	≥ 94.2	≥ 91.6
90	≥ 95.8	≥ 94.1	≥ 96.1	≥ 94.2	≥ 95.6	≥ 94.2	≥ 94.4	≥ 91.9
110	≥ 96.0	≥ 94.3	≥ 96.3	≥ 94.5	≥ 95.8	≥ 94.5	≥ 94.7	≥ 92.3
132	≥ 96.2	≥ 94.6	≥ 96.4	≥ 94.7	≥ 96.0	≥ 94.7	≥ 94.9	≥ 92.6
160	≥ 96.3	≥ 94.8	≥ 96.6	≥ 94.9	≥ 96.2	≥ 94.9	≥ 95.1	≥ 93.0
200	≥ 96.5	≥ 95.0	≥ 96.7	≥ 95.1	≥ 96.3	≥ 95.1	≥ 95.4	≥ 93.5
250 up to 1000	≥ 96.5	≥ 95.0	≥ 96.7	≥ 95.1	≥ 96.5	≥ 95.1	≥ 95.4	≥ 93.5

'≥' means 'greater than or equal to'

Please note that if the product's specific rated power output is not shown in Table 1 then the performance threshold is determined by interpolation in accordance with the method set out in Section 5.4.5 of BS EN 60034-30-1: 2014. Until further notice results of tests according to BS EN 60034-2-1:2007 for products listed before May 2020 will also be accepted.

5. Summary of documents to be included

No	Yes

Please send ONE copy of each of the following documents:

If the relevant information in support of the questions above is contained within a larger document, please indicate the location of the relevant information. Note that all documentation submitted must directly refer to the model numbers for which you are making this application. Documentation should be added to your online application.

a) A technical sales brochure or leaflet for the product clearly summarising:

i) The key features of the product (ideally including photographs of the product's exterior). ☐

ii) The product's operation (i.e. in-built functionality) and intended applications (i.e. usage). ☐

iii) Any product selection options (including optional extras, alternative configurations etc.). ☐

This documentation should contain sufficient detail to enable the assessor to confirm that the proposed entry on the Energy Technology List (ETL) is correct, and uniquely represents a single product of fixed design (as defined by the rules of the ETL). If the model names contain any 'wildcards' in respect of cosmetic variations please check with ETL@ICF.com that this is permitted before submitting your application.

b) A technical specification for the product, including:

i) Details of the model numbers covered (including individual features of each model). ☐

ii) The product's design ratings (electrical, mechanical, thermal, flow rates, energy use etc.). ☐

iii) A description of how to install the product including connection/wiring diagrams. Where the product must be assembled, configured and/or commissioned on site before use, please include instructions. ☐

This documentation should contain sufficient detail to enable the assessor to confirm that each product entry on the ETL has the design features specified in the eligibility criteria for that category of product. Please indicate on the checklist where information on specific design features is located in the documentation.

c) Evidence that the product meets the performance criteria, including:

i) Test reports showing product performance at the standard rating/test conditions. ☐

ii) Details of the test procedures/standards used to determine product performance. ☐

iii) A declaration certifying the accuracy of the test reports and confirming that:

- The test facilities complied with the minimum specifications outlined in the test standard, and the required test conditions where applied during testing. ☐
- All measurement equipment used in testing was calibrated by an accredited laboratory, or its calibration is otherwise traceable back to national standards. ☐
- Appropriate quality assurance procedures have been used to verify or cross-check the accuracy and repeatability of the test procedures and test results. ☐

Please note that summary test reports will only be accepted, where the accuracy of the test reports has been certified by a recognised independent body, or where two detailed test reports have been submitted per product range.

Please refer to the ETL Testing Framework for further guidance on the submission of test results, and minimum information requirements.

d) A Declaration of Conformity with UK/EU Directives on product safety, including:

i) An appropriate Conformity Assessment mark. ☐

e) Evidence that a quality assurance system/procedures is/are in place to:

i) Control the specification, design, manufacturing and testing of the products. ☐

f) Signed application checklist. ☐

Please note that all product documentation provided must be written in, or translated into, English.

6. Declaration

I confirm that the information given above is correct to the best of my knowledge and that I have read and agree to the terms and conditions governing the management of the Energy Technology List.
A copy of the terms and conditions can be found **here**.

Signature: ..... Date: .....

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