

Requirements on Energy Efficiency and the Inspection of Low-Voltage Three-Phase Squirrel-Cage Induction Motors (including as a component of the specified equipment)

1. The low-voltage three-phase squirrel-cage induction motor (“induction motor” hereafter) set in this announcement covers goods in compliance with Clause 14400 of Chinese National Standards (CNS), with a rated output power from 0.75kW/1HP to 200kW/270HP or which are subjected to inspection by the Central Competent Authority.
2. The specific equipment mentioned in this announcement indicate pumps, air compressors or fans that include induction motors.
3. The energy efficiency labeling for the induction motors mentioned in the above two points, should be in compliance with regulations as in the Induction Motor IE2 Energy Efficiency Standards (See Appendix 1) or Induction Motor IE3 Energy Efficiency Standards (See Appendix 2).
4. Before making or importing the induction motor, the supplier shall apply for account ID and password to the Energy Efficiency Labeling Management System (“EELMS” hereafter) administered by the central competent authority (CCA) with the following documents:
 - (1) The EELMS account ID and password application form (Appendix 3).
 - (2) Copy of the company or commerce registration certificate.
5. Before making or importing the induction motor, with a rated output power greater than 74.6kW, the supplier shall apply for the induction motor’s energy efficiency labeling with the EELM, administered by the CCA with the following documents:
 - (1) Original of the energy efficiency labeling for induction motor application form (Appendix 4).
 - (2) When applying for more than three type of registration for energy

efficiency labeling for induction motors, the supplier shall provide hard or soft copy of the energy efficiency test report for the two designated types, and reports will be chopped with official company stamp.

- (3) For suppliers that have entrusted the application to a third party, the original mandate of delegated power (Appendix 5) shall be included.

The energy efficiency test report mentioned above, shall be issued by certification authorities that are members of the mutual recognition agreement signed by the Taiwan Accreditation Foundation (“TAF” hereafter) and the International Laboratory Accreditation Cooperation (“ILAC” hereafter), laboratories certified by the Bureau of Standards, Metrology and Inspection, MoEA, Bureau of Energy, MoEA, etc., or by Underwriters Laboratories Inc. (“UL” hereafter) and Technischer Überwachungs-Verein (“TÜV” hereafter); the energy efficiency testing method used in the test reports shall conform to the active CNS 14400, the International Electrotechnical Commission (“IEC” hereafter) standard 60034-2-1 or the Institute of Electrical and Electronics Engineers (“IEEE” hereafter) standard 112B.

Machines with the same type, number of poles and rated output power, shall be considered to be the same basic model induction motor.

6. Before making or importing the induction motor, with a rated output power lower than 74.6kW, the supplier shall apply for the induction motor’s energy efficiency labeling (Appendix 4), and include the Certificate of the Registration of Product Certification issued by the Bureau of Standards, Metrology and Inspection, MoEA, according to IE2 energy efficiency standard of induction motors (Appendix 1) or IE3 energy efficiency standard of induction motors (Appendix 2), the

original certificate will be color scanned into digital file and transmitted to the EELMS or sent the disk containing the file to the CCA.

7. The supplier shall apply for the induction motor's energy efficiency labeling again before making or importing it in case of the following:
 - (1) Design changes which may have impact on energy efficiency.
 - (2) Model changes.
 - (3) Amended regulation for IE2 energy efficiency standard of induction motors (Appendix 1) or IE3 energy efficiency standard of induction motors (Appendix 2).

Before making or importing the induction motor, if changes affect the contents detailed in the Certificate of the Registration of Product Certification, application for changes shall be submitted according to the regulations of Bureau of Standards, Metrology and Inspection, MoEA. The copy of changed Certificate of the Registration of Product Certification chopped with official company stamp shall be submitted to the CCA.

8. When displaying, selling, making or importing induction motors, the supplier shall attach the following items to the front and visible position of the machine:
 - (1) Name: Three-phase squirrel-cage high efficiency induction motor.
 - (2) Number of poles;
 - (3) Rated output power (kW or HP) ;
 - (4) Rated Voltage;
 - (5) Rated frequency;
 - (6) Symbol for the degree of protection by enclosure (IP code);
 - (7) Symbol of motor type;
 - (8) Year of manufacture;
 - (9) Manufacturer's name or trade mark.
 - (10) Efficiency at rated load(efficiency at full load);

(11) Type of efficiency (IE2 or IE3)

The above items shall all be labeled in Mandarin Chinese, except for unit symbols or special characters, and cannot be concealed, destroyed or rendered otherwise unrecognized.

9. From 1 July 2015, rated output power, number of poles or revolutions, rated voltage, rated frequency, IP code, full load efficiency and other energy efficiency related performance parameters shall be labeled on the induction motors installed in specific equipment or on visible positions on the machine.
10. The supplier shall report last year's unit sales of each model of the induction motor before the end of February each year.
11. The CCA may run annual random tests for energy efficiency checks, the supplier shall deliver units of models specified by the CCA to given labs before the given date; if values of the test outcome are not conform to the IE2 energy efficiency standard of induction motors (Appendix 1) or IE3 energy efficiency standard of induction motors (Appendix 2), the CCA shall call the supplier for another test, the second test shall be made against the same mode at twice the quantity given for the first one, and the supplier shall foot the bill of the second test.

Supplier making or importing specific equipment shall comply with the CCA random tests on energy efficiency and labeling for induction motors, and provide relevant data.

12. The CCA shall subject suppliers who do not undergo the secondary test or who failed the secondary test to Clause 21 and 24 of the Energy Administration Act. This does not apply to the suppliers who do not undergo secondary test due to termination of production or import and have been approved by the CCA for revoking their induction motor's energy efficiency labeling.
13. Units of random test said in Item 11 shall be determined by the induction motors made or imported in the last year: test one for

every 5000 units and on for less than 5000 units, test a maximum of 10 for each supplier. The CCA may revise test units as required.

Appendix 1

IE2 energy efficiency requirements for low-voltage three-phase squirrel-cage induction motors

Effective date		Jan. 1, 2015~June 30,2016								
Rated output power		2pole			4pole			6pole		
		Synchronous speed (rpm)	Rated full- load efficiency η (%)		Synchronous speed (rpm)	Rated full- load efficiency η (%)		Synchronous speed (rpm)	Rated full- load efficiency η (%)	
kW	HP (reference)	60Hz	Totally enclosed (TE) type	Drip proof type	60Hz	Totally enclosed (TE) type	Drip proof type	60Hz	Totally enclosed (TE) type	Drip proof type
0.75	1	3600	75.5	-	1800	82.5	82.5	1200	80.0	80.0
1.1	1.5		82.5	82.5		84.0	84.0		85.5	84.0
1.5	2		84.0	84.0		84.0	84.0		86.5	85.5
2.2	3		85.5	84.0		87.5	86.5		87.5	86.5
3.7	5		87.5	85.5		87.5	87.5		87.5	87.5
5.5	7.5		88.5	87.5		89.5	88.5		89.5	88.5
7.5	10		89.5	88.5		89.5	89.5		89.5	90.2
11	15		90.2	89.5		91.0	91.0		90.2	90.2
15	20		90.2	90.2		91.0	91.0		90.2	91.0
18.5	25		91.0	91.0		92.4	91.7		91.7	91.7
22	30		91.0	91.0		92.4	92.4		91.7	92.4
30	40		91.7	91.7		93.0	93.0		93.0	93.0
37	50		92.4	92.4		93.0	93.0		93.0	93.0
45	60		93.0	93.0		93.6	93.6		93.6	93.6
55	75		93.0	93.0		94.1	94.1		93.6	93.6
75	100		93.6	93.0		94.5	94.1		94.1	94.1
90	125		94.5	93.6		94.5	94.5		94.1	94.1
110	150		94.5	93.6		95.0	95.0		95.0	94.5
150	200		95.0	94.5		95.0	95.0		95.0	94.5
185~200	250~270		95.4	95.2		95.4	95.6		95.0	95.4

Note:

- η is the rated full-load efficiency. Full-load efficiency is measured according to CNS14400 "Low-voltage three-phase squirrel-cage high-efficiency induction motors (for general purpose)" or in accordance with test standard prescribed by the Central Competent Authority.
- The efficiency marked by the manufacturer on nameplate shall be greater than or equal to standard value listed in the above table.
- The tested value of full- load efficiency shall not be less than the marked value η' on the product minus tolerance ε , where ε is calculated as follows:

$$= (1 - \eta') \times 15\% \quad (\text{for rated output power} \leq 150\text{kW})$$

$$= (1 - \eta') \times 10\% \quad (\text{for rated output power} > 150\text{kW})$$
- The tested value of full- load efficiency (%) is rounded off to the first decimal place, with the second decimal place rounded off.
- If a rated output power value not defined in the tables is at or above the midpoint between two consecutive power ratings, the efficiency shall be the higher of the two efficiencies.
If a rated output power value not defined in the tables is below the midpoint between two consecutive power ratings, the efficiency shall be the lower of the two efficiencies.

Appendix 2

IE3 energy efficiency requirements for low-voltage three-phase squirrel-cage induction motors

Effective date		July. 1, 2016								
Rated output power		2pole			4pole			6pole		
		Synchronous speed (rpm)	Rated full- load efficiency η (%)		Synchronous speed (rpm)	Rated full- load efficiency η (%)		Synchronous speed (rpm)	Rated full- load efficiency η (%)	
kW	HP (reference)	60Hz	Totally enclosed (TE) type	Drip proof type	60Hz	Totally enclosed (TE) type	Drip proof type	60Hz	Totally enclosed (TE) type	Drip proof type
0.75	1	3600	77.0	77.0	1800	85.5	85.5	1200	82.5	82.5
1.1	1.5		84.0	84.0		86.5	86.5		87.5	86.5
1.5	2		85.5	85.5		86.5	86.5		88.5	87.5
2.2	3		86.5	85.5		89.5	89.5		89.5	88.5
3.7	5		88.5	86.5		89.5	89.5		89.5	89.5
5.5	7.5		89.5	88.5		91.7	91.0		91.0	90.2
7.5	10		90.2	89.5		91.7	91.7		91.0	91.7
11	15		91.0	90.2		92.4	93.0		91.7	91.7
15	20		91.0	91.0		93.0	93.0		91.7	92.4
18.5	25		91.7	91.7		93.6	93.6		93.0	93.0
22	30		91.7	91.7		93.6	94.1		93.0	93.6
30	40		92.4	92.4		94.1	94.1		94.1	94.1
37	50		93.0	93.0		94.5	94.5		94.1	94.1
45	60		93.6	93.6		95.0	95.0		94.5	94.5
55	75		93.6	93.6		95.4	95.0		94.5	94.5
75	100		94.1	93.6		95.4	95.4		95.0	95.0
90	125		95.0	94.1		95.4	95.4		95.0	95.0
110	150		95.0	94.1		95.8	95.8		95.8	95.4
150	200		95.4	95.0		96.2	95.8		95.8	95.4
185~200	250~270		95.8	95.4		96.2	96.0		95.8	95.8

Note:

- η is the rated full-load efficiency. Full-load efficiency is measured according to CNS14400 "Low-voltage three-phase squirrel-cage high-efficiency induction motors (for general purpose)" or in accordance with test standard prescribed by the Central Competent Authority.
- The efficiency marked by the manufacturer on nameplate shall be greater than or equal to standard value listed in the above table.
- The tested value of full- load efficiency shall not be less than the marked value η' on the product minus tolerance ε , where ε is calculated as follows:

$$= (1 - \eta') \times 15\% \quad (\text{for rated output power} \leq 150\text{kW})$$

$$= (1 - \eta') \times 10\% \quad (\text{for rated output power} > 150\text{kW})$$
- The tested value of full- load efficiency (%) is rounded off to the first decimal place, with the second decimal place rounded off.
- If a rated output power value not defined in the tables is at or above the midpoint between two consecutive power ratings, the efficiency shall be the higher of the two efficiencies.
If a rated output power value not defined in the tables is below the midpoint between two consecutive power ratings, the efficiency shall be the lower of the two efficiencies.

Appendix 3

The EELMS account application form

Apply on:

Applied by: _____

Contact: _____ Tel: _____ Fax: _____

E-MAIL: _____

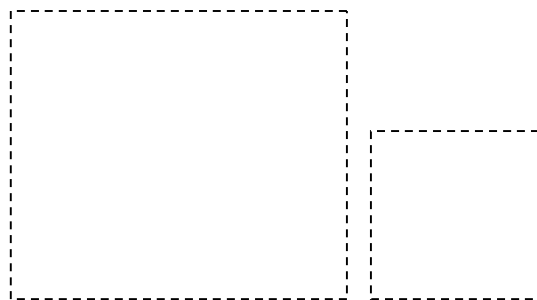
Merchant category: _____

Account ID: _____

Password: _____

We hereby apply for accessing the EELMS and agree to be held accountable for information provided here by us.

Chop with official company and owner stamp:



(Official company and owner stamp)

Appendix 4

Application number: _____

Energy efficiency labeling registration application form of the Low-voltage three-phase squirrel-cage induction motor

Apply on:

1. Basic data of the applicant

Company name: _____

Company address: _____

Owner: _____ Tax ID: _____

Contact: _____ Unit: _____ Title: _____

Tel: _____ Mobile: _____ Fax: _____

Email: _____

2. Manufacturer name or trade mark

3. Manufacturer name and address

Ditto

Manufacturer name: _____

Manufacturer address: _____

4. Contents of energy efficiency labeling Efficiency at rated load

No.	Model	Number of poles (P)	Rated frequency (Hz)	Rated voltage (V)	Rated output power (kW)	IP Code	Efficiency at rated load (%)	Type of Efficiency	Installation method	Notes
1								IE2	Horizontal	
2								IE3		
3									Flange type (vertical)	
4										

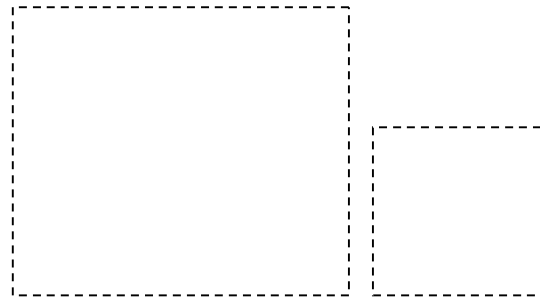
5										
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Note: Please login the EELMS to fill out the application form, and download for your use.

5. Application declaration and affidavit

We declare under our sole responsibility to the CCA that information provided here by us is all true and we shall be liable for any legal responsibilities for errors made here. Contents of energy efficiency labeling contained in market available products are in conformity with data accompanied by this application. Should there be any false and/or untrue data, we shall be subjected to registration revocation and penalties set for in the Energy Administration Act unconditionally.

Chop by the applicant (official company and owner stamp):



(Official company and owner stamp)

Appendix 5

**Mandate of delegated power for
Energy efficiency standard and energy efficiency labeling
registration application of the Low-voltage three-phase
squirrel-cage induction motor**

For registration application delegated to a mandatory for the energy efficiency standard and energy efficiency labeling registration, according to **Item 5 (3)** of the “Requirements on Energy Efficiency and the Inspection of Low-Voltage Three-Phase Squirrel-Cage Induction Motors”, the present is delegated as mandatory for the application of the registration, and provides the present document.

To

Bureau of Energy, MoEA

Company name of the principal:

Owner:

Address:

Tax ID:

Tel:

Two dashed rectangular boxes are positioned to the right of the labels for 'Address:', 'Tax ID:', and 'Tel:'. The larger box on the left is aligned with 'Address:' and 'Tax ID:', and the smaller box on the right is aligned with 'Tel:'. These boxes are intended for official stamps.

(Official company and owner stamp)

Company name of the mandatory:

Owner:

Address:

Tax ID:

Tel:

Two dashed rectangular boxes are positioned to the right of the labels for 'Address:', 'Tax ID:', and 'Tel:'. The larger box on the left is aligned with 'Address:' and 'Tax ID:', and the smaller box on the right is aligned with 'Tel:'. These boxes are intended for official stamps.

(Official company and owner stamp)

Date: