

# TYPE APPROVAL CERTIFICATE

**This is to certify:**

**That the Electric Motor**

with type designation(s)

**MS., MS2., frame sizes 56 up to 200, T1A., T2A., T3A., T4A., TAI., TAP., frame sizes 56 up to 200**

Issued to

**Shanghai Top Motor Co., Ltd.  
Shanghai, 020, China**

is found to comply with

**DNV GL rules for classification – Ships, offshore units, and high speed and light craft**

**Application :**

**Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.**

Type	Degree of protection	Insulation class	Temp. class (°C)	Voltage (V)	Power (kW)	Frequency (Hz)	Speed (RPM)
MS., MS2., frame sizes 56 up to 200	IP 55, IP 56, IP 65	F	155	230 up to 690	0,09 up to 37	50 / 60	750 up to 3600
T1A., T2A., T3A., T4A., TAI., TAP., frame sizes 56 up to 200	IP 55, IP 56, IP 65	F	155	220 up to 690	0,09 up to 37	50 / 60	750 up to 3600

Issued at **Hamburg** on

for **DNV GL**

This Certificate is valid until .

DNV GL local station: **Shanghai**

Approval Engineer: **Andreas Andrecht**

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**Arne Schaarmann**  
**Head of Section**

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.



Job Id: **262.1-031083-1**  
Certificate No: **TAE00003HN**

## Product description

Induction Motors, Aluminium frame

### Type

MS.., MS2.., frame sizes 56 up to 200

T1A.., T2A.., T3A.., T4A.., TAI.., TAP.., frame sizes 56 up to 200

Sizes:	1, 2, 3, S, S1, S2, M, M1, M2, L, L1, L2
Rated voltage:	220 V up to 690 V
Rated power, Duty Type:	S1 0,09 kW up to 37 kW
Synchronous speed:	750 1/min up to 3600 1/min
Rated frequency:	50 Hz, 60 Hz
Ambient temperature:	45 °C
Thermal class:	155 (F)
Degree of protection:	IP 55, IP 56, IP 65
No. Of poles:	2, 4, 6 and 8
Spec. Model:	For marine applications / environments

## Application/Limitation

This certificate is issued on the basis of GL Guidelines for the Performance of Type Approvals, Chapter 1 - Procedure (VI-7-1), Edition 2007

## Marking of product

For traceability of the product to this Type Approval Certificate the products are as a minimum to be marked as follows:

1. a) Serial number, b) Manufacturer's name, c) Model and d) Type Designation
2. a) Power, b) Voltage, c) Current, d) Frequency, e) Speed, f) Power factor
3. Duty type (if other then S1/Continuous)
4. a) Winding insulation class and b) Winding connection
5. Degree of protection
6. a) Maximum permissible cooling medium temperature, b) Ambient temperature
7. Performance standard
8. Total mass

## Type Approval documentation

Drawing: 1TB.010.166 - 172.A-0 dated 2014-03-13

Technical data: TECHTOP MS-serie, page 3 to 5

Test report: T2A 180L-4, Report No. 20140311002 dated 2014.03.11

Catalogue: SHANGHAI TOP MOTOR CO., LTD, TECHTOP Motor 2013

## Tests carried out

IEC 60034-1 / 2010-02

GL Guidelines for the Performance of Type Approvals, VI-7-6 part 4, ed. 1999

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Certificate No: **TAE00003HN**

### **Place of manufacturing**

SHANGHAI TOP MOTOR CO., LTD.  
No. 303 KANGLIU Rd, KANGQIAO Town  
Pudong, Shanghai, P. R. China

SHANGHAI HIMAK ELECTRICAL MA.. CO., LTD.  
No. 568 YUANXI Rd, NANHUI Industry Area  
Pudong, Shanghai, P. R. China

### **Periodical assessment**

The scope of the periodical assessment is to verify that the conditions stipulated for the Type approval are complied with and that no alterations are made to the product design or choice of materials.

The main elements of the assessment are:

- Inspection of factory samples, selected at random from production line (where practicable)
- Results from Routine Tests (RT) checked (if not available tests according to RT to be carried out)
- Review of Type Approval documentation
- Review of possible change in design, materials and performance
- Ensuring traceability of the manufacturer's product type marking and Type Approval Certificate.

Periodical assessment is to be performed after 2 years and after 3.5 years.  
A renewal assessment will be performed at renewal of the certificate.

END OF CERTIFICATE