Certificate No:
TAE00004KJ

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Electric Motor

with type designation(s)
IHDV and IHVC

Issued to
Taiyo Electric Co., Ltd. Gifu Factory
Motosu-gun, Gifu Pref., **Japan**

is found to comply with
DNV rules for classification – Ships, offshore units, and high speed and light craft

Application :

Products approved by this certificate is/are accepted for installation on all vessels classed by DNV.

Degree of protection	**IP 22, IP 23, IP 44, IP 54**
Insulation class	**155 (F)**
Temp. class (°C)	**155 (F)**
Voltage (V)	**1000 V up to 6600 V**
Power (kW)	**300 kW up to 3000 kW**
Frequency (Hz)	**6 Hz up to 60 Hz**
Speed (RPM)	**300 1/min up to 3600 1/min**

Issued at **Høvik** on **2023-03-28**
This Certificate is valid until **2025-05-03**.
DNV local station: **Kobe**

Approval Engineer: **Nicolay Horn**

for **DNV**

Frederik Tore Elter
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.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.

Product description

AC High voltage Induction Motors
Types: IHVC, (totally enclosed motors, vertical)
IHDV (open drip motors, vertical)

IHDV ,IHVC Type designation	Technical date
Size	IHVC:425S/M/L/LL ,500S/M/L/LL, 560S/M/L/LL ,630S/M/L/LL, 710S/M/L/LL, 800S/M/L/LL, 900S/M/LL -4 ,6 ,8 pole (to combination) IHDV:560S/M/L/LL, 630S/M/L/LL, 710 S/M/L/LL -4 ,6 ,8 pole (to combination)
Rated power	300 kW up to 3000 kW
Rated voltage	1000 V up to 6600 V (690V is specially categorized by manufactures request)
Duty type	S1 ,S2-30 min ,S2-60 min
Rated frequency	6 Hz up to 60 Hz
Ambient temperature	45℃
Thermal class	155 (F)
Degree of Protection	IP22. IP23, IP44 & IP54

Application/Limitation

This Type Approval Certificate does not replace the requirement to DNV Product Certificate

Type Approval documentation

Instruction Manual for three phase induction motor IHVC and IHDV doc. No. I B 912-3.

According to test reports
- Taiyo Test report no. TS-017-061 undated.
- IHDV, DNV certificate order number 21-2521-06 dated 2022-03-15
- IHVC ABS certificate order number 20-6087-01 dated 2021-10-.27

Tests carried out

In accordance with DNV Rules Pt.4 Ch.8, Sec.5, table 2, IEC 60034-1 (2010-02) and IEC 60034-15 (2009) item 4.2 and 4.4.

Marking of product

According to IEC 60034-1, clause 10.2

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 on factory samples, selected at random from the production line (where practicable)
- Results from Production Sample Tests (PST) and Routines (RT) checked (if not available, tests according to PST and RT to be carried out)
- Review of type approval documentation
- Review of possible change in design, materials and performance
- Ensuring traceability between 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