

# TYPE APPROVAL CERTIFICATE

Certificate No:  
**TAE0000211**  
Revision No:  
**4**

## This is to certify:

### That the Electric Motor

with type designation(s)  
**HMC2 80 up to HMC2 355**

Issued to

**Svend Hoyer A/S**

is found to comply with

**DNV rules for classification – Ships, offshore units, and high speed and light craft**  
**DNV class programme DNV-CP-0393 – Type approval – Rotating electrical machines**

## Application :

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

|                      |                       |
|----------------------|-----------------------|
| Degree of protection | IP55, IP56            |
| Insulation class     | F                     |
| Temp. class (°C)     | 155                   |
| Voltage (V)          | 220-690V              |
| Power (kW)           | S1 0,87kW up to 413kW |
| Frequency (Hz)       | 50, 60                |
| Speed (RPM)          | 750-3600              |

Issued at **Høvik** on **2022-09-23**

for **DNV**

This Certificate is valid until **2027-06-18**.

DNV local station: **Denmark CMC**

Approval Engineer: **Georgy Abramenko**

**Marta Alonso Pontes**  
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.



## Manufactured by

DNV ID - 10694675  
DNV ID -10330395

## Product description

3-phase induction motors with ratings as specified in page 1 of this type approval certificate.

|                       |   |
|-----------------------|---|
| Sizes:                | S, S1, S2, M, M1, M2, M3, MB, L, L1, L2, L3, LB, LA, Ly   |
| Voltage [V]:          | 220-690   |
| Power [kW]:           | S1 0,87 up to 413kW   |
| Number of Poles:      | 2, 4, 6, 8  |
| Frame material:       | Cast iron   |
| Duty type :           | S1 to S9  |
| Ambient temperature : | 45 °C, 50 °C with power reduction   |
| Ex rating :           | NA  |
| Spec. Model :         | For marine / offshore environments. On request optional with built-in units e.g. brakes, external fans, encoders. |

## Application/Limitation

For use as propulsion motor documentation according to DNV Rules must be submitted for approval for each project. Product certification shall be carried out for motors of 300kW and above, as required by DNV Rules Pt.4 Ch.8 Sec.1 Table 3.

## Type Approval documentation

Drawings: 70019/2011-10-17, 70044/2011-11-09, 70045/2011-11-09  
Technical datasheets: Hoyer Motors Manual, dated October 2011  
Test reports: SH544474-002 / SH544474-003 / SH544474-005 of 2012-05-10  
Catalogue: Hoyer Motors, IE2, Marine Motors 2012  
S9 calculation and datasheet 3243153209.

## Tests carried out

IEC 60034-1:2010-02  
GL Regulation for the Performance of Type Tests, part 4, edition 1999

## Marking of product

Svend Hoyer – type designation – technical data including rated voltage, RPM, rated power, ambient temperature, rated current, rated frequency, insulation class, IP class.

## 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 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 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