

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Electric Motor

with type designation(s)
TCA, QCA & SCA

Issued to

Rotor B.V.
EIBERGEN, Netherlands

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)	220-1000V
Power (kW)	S1 0,75kW up to 431kW
Frequency (Hz)	50, 60
Speed (RPM)	750-3600

Issued at **Høvik** on **2021-11-08**

This Certificate is valid until **2026-11-07**.

DNV local station: **Netherlands FIS**

for **DNV**

Approval Engineer: **Nicolay Horn**

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Trond Sjøvåg
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

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

Shaft heights [mm]:	80, 90, 100, 112, 132, 160, 180, 200, 225, 250, 280, 315, 355
Frame Sizes:	NEN-EN-IEC 10072-1
Voltage [V]:	220-1000
Power [kW]:	S1 0,75 up to 408 kW
Number of Poles:	2, 4, 6, 8
Frame material:	Cast iron
Duty type :	S1 to S9
Degree of protection :	IP55, IP56 and IP65 in accordance with IEC 60034-5
Ambient temperature :	45 °C, 60 °C with power reduction
Cooling:	IC411 (standard), IC416 (indepentant cooling) and IC410 (radiation)
Ex rating :	NA
Spec. Model :	For marine / offshore environments.

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

Shaft heights [mm]:	80, 90, 100, 112, 132, 160, 180, 200, 225, 250, 280, 315, 355
Frame Sizes:	NEN-EN-IEC 10072-1
Voltage [V]:	220-1000
Power [kW]:	S1 0,75 up to 430 kW
Number of Poles:	2, 4, 6, 8
Frame material:	Cast iron
Duty type :	S1 to S9
Degree of protection :	IP55, IP56 and IP65 in accordance with IEC 60034-5
Ambient temperature :	45 °C, 60 °C with power reduction
Cooling:	IC411 (standard), IC416 (indepentant cooling) and IC410 (radiation)
Ex rating :	NA
Spec. Model :	For marine / offshore environments.

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

Shaft heights [mm]:	80, 90, 100, 112, 132, 160, 180, 200, 225, 250, 280, 315, 355
Frame Sizes:	NEN-EN-IEC 10072-1
Voltage [V]:	220-1000
Power [kW]:	S1 0,75 up to 431 kW
Number of Poles:	2, 4, 6, 8
Frame material:	Cast iron
Duty type :	S1 to S9
Degree of protection :	IP55, IP56 and IP65 in accordance with IEC 60034-5
Ambient temperature :	45 °C, 60 °C with power reduction
Cooling:	IC411 (standard), IC416 (indepentant cooling) and IC410 (radiation)
Ex rating :	NA
Spec. Model :	For marine / offshore environments.

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

Tests carried out

In accordance with IEC 60034-1:2017-05 and the DNV Rules / DNV Class Program DNV-CP-0393.

Marking of produc

Rotor, 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