Certificate No: LR26112152TA
Issue Date: 17/03/2026
Expiry Date: 30/08/2030

Type Approval Certificate

This is to certify that the undernoted product(s) has/have been tested with satisfactory results in accordance with the relevant requirements of the Lloyd's Register Type Approval System.

Manufacturer	**Rotor B.V.**
Address	Mors 2, Eibergen, 7151 MX, Netherlands
Place of Production	Rotor B.V. Mors 2, Eibergen, 7151 MX, Netherlands
Type	Electric Motors
Description	(x)RN 100-160 (x)RN 180-355 RF 180-315 (x) = 1 to 9
Trade Name	Asynchronous low-voltage motors with aluminium enclosure
Application	Marine, Offshore and Industrial use
Specified Standard	IEC 60034-1:2022 with all relevant parts IEC 60092-301:1980/ AMD2:1995
Ratings	0,75 till 720 kW Degree of protection: IP55 and IP56 acc NEN-EN60034-5 Frame sizes: acc NEN-EN-IEC10072-1

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CHETAN WAGH

Senior Specialist Electrical & Control to Lloyd's Register Marine and Offshore India LLP

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Insulation class: F,H acc IEC-EN60034-1 Chapter 7.10 table 6
These motors are designed to have a maximum temperature rise of 90K with insulation class F when used in combination with a 6 pulse rectifier.
If needed, the motor will be de-rated in case the tolerance on the winding temperature rise is not sufficient.
Voltage: Any voltage between 110 and 1000V (standard on stock 3x400V 50Hz/ 3x460V 60Hz).
Motors can also be equipped with an isolated bearing construction to prevent circulating currents.
Frequency: 50Hz or 60Hz
Speed: 500 up to and incl 3600 rpm
Number of poles 12,10,8,6,4,2
Number of phases: 3 phase motors
Current: depends on output and voltage
Power factor: 0,61 till 0,99
Nominal output max 720kW (S1 duty)
Service (Duty) S1; S2(10 or 30min); S3,S4; S6; S9
Ambient temperature: 45°C; max 60°C (with derated outputs on name plate)
Temp rise Limits: acc IEC-EN60092-301 App A sub clause 3,1 Table A1 (e.g. 90K at ambient 50°C for F-insulation)
Cooling: IC411(standard); IC416(Independent cooling); IC410(radiation) acc IEC-EN60034-6 Construction: IM acc.IEC-EN60034-7
Motor with a power rating of 100 kW and greater are supplied with a 3.1 shaft certificate from a Lloyds approved mill.
Motor with a power rating of 250 kW and greater are supplied with a Lloyds 3.2 shaft certificate.
The machine winding will be mounted with ETDs in case of propulsion application.

Other Conditions

The motors have to be surveyed at the manufacturer's works, where the results of class witnessed type tests of temperature rise taken on a machine identical in rating and in all other essential details may be accepted in conjunction with abbreviated tests.

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Type Approval Certificate

Type Approval does not eliminate the need (as required by LR Rules) the requirements for further review or for the product to be further inspected and/ or surveyed to be installed in ships classed or intended to be classed with LR.

If the specified standards are amended during the validity of this certificate, the product is to be reapproved prior to it being supplied to vessels to which the amended standards apply.

This certificate is not valid for equipment, the design, ratings or operating parameters of which have been varied from the specimen tested. The manufacturer should notify Lloyd's Register Marine and Offshore India LLP of any modification or changes to the equipment in order to obtain a valid Certificate.

Previous Version: LR2023244TA

The Design Appraisal Document TSO-25-047802-E-02 and its supplementary Type Approval Terms and Conditions form part of this Certificate.

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