Certificate no.:
TAE000053Y

TYPE APPROVAL CERTIFICATE

This is to certify:

that the Electrical Equipment

with type designation(s)
F4480/F4513/X

issued to
Cavotec Specimas S.p.A.
Nova Milanese, MB, Italy

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

Application:

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

Temperature	**B**
Humidity	**NA**
Vibration	**NA**

Issued at **Høvik** on **2025-09-17**
This Certificate is valid until **2030-09-16**.
DNV local unit: **Italy/Malta CMC**

for **DNV**

Approval Engineer: **Georgy Abramenko**

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 USD 300 000.

Product description

Electro-mechanical slip ring unit facilitating the transmission of power and electrical signals from stationary power source to movable/ rotating machine.

Power rating (MVA)	13,7
Maximum rated current (A)	720A (2 rings per phase, 360A each ring)
Rated voltage (V)	11000
Input frequency (Hz)	50/60
Peak short circuit withstand current (kA)	82
RMS short circuit withstand current for 1 sec (kA)	31,5
Max rotational speed (rpm)	30
Duty cycle	S1
Ingress Protection	IP XX (to be encapsulated)
Method of cooling	Natural air cooled

Application/Limitation

1. This Type Approval Certificate does not replace the requirement to DNV Product Certificate. A Product Certificate is required for slip ring units with rated power exceeding 100kW.
2. Slipring units are not certified to be used for propulsion system or components, being designed for shore power cable management system (CMS) intended to be operated when vessel/ unit is moored.
3. IP rating has not been assessed within this type approval certification. Slipring units are delivered without enclosure. Final customer or integrator is responsible for providing the enclosure suitable for application.

Tests carried out

Tests according to DNV Rules for Ships Pt.4 Ch.8 Sec.8 (edition July 2024), DNV Class Guidance CG-0339.

Marking of product

Slipring Description – Product ID -Serial Number – Production Date – Voltage/Current – IP Rating – Unit Weight (data taken from nameplate).

Manufactured by:

Cavotec Specimas S.p.A.
Italy 20834 Nova Milanese via Gaetana Agnesi, 3.

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