Certificate no.:
TAE000052R

TYPE APPROVAL CERTIFICATE

This is to certify:

that the Frequency Converter

with type designation(s)
MGU2 - ACH65M30D

issued to
Scania CV AB
Södertälje, Stockholms Län, Sweden

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

Application:

Product approved by this certificate is accepted for installation on all vessels classed by DNV following DNV Rules of July 2025 edition.

Issued at **Høvik** on **2026-01-30**
This Certificate is valid until **2031-01-29**.
DNV local unit: **Sweden 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.

Manufactured by:

Inmotion Technologies AB
Solkraftsvägen 13,
13570 Stockholm,
Sweden

Product description

Semi-conductor inverter MGU2 ACH65M30D is specially designed for controlling one electric machine with dual windings. In motor mode it converts power from the DC grid to three phase permanent magnet machine. In generator mode MGU2 ACH65M30D converts AC power from machine to the DC grid accordingly.

Type	Nominal current	Nominal power	Enclosure rate
MGU2 ACH65M30D	450A (380A DC)	230kW	IP67

Application/Limitation

Supply voltage range:	DC connection: 560 - 800V DC AC connection: 400 V AC
Output frequency (motor mode):	0 – 599Hz
Temperature class:	B
Vibration class:	B
Humidity class:	B
EMC class:	A

Product certificate
Inverter serving essential or important functions as defined in DNV Rules for Ships Pt.4 Ch.8 shall have a product certificate according to DNV Rules for Ships Pt.4 Ch.8 Sec.1 Table 8 for each delivery to DNV classed vessels. Certification of inverter may be a part of overall propulsion system assembly certification.

For product certification, the following documents shall be submitted for approval:
- Reference to this Type Approval Certificate
- Datasheet stating general electrical data as per DNV Rules for Ships Pt.4 Ch.8 Sec.1 Table 7, item E120 defined in DNV Class Guidance CG-0550 Sec.5 with serial numbers data.
- If additional components apart from the type approved frequency converter are part of the delivery, documentation in accordance with DNV Rules for Ships Pt.4 Ch.8 Sec.1 Table 7 shall be delivered for the additional components.

Clause for software control:

All changes in software are to be recorded as long as the system is in use on board. The records of all changes are to be forwarded to DNV for evaluation and approval. Major changes in the software are to be approved before being installed in the converter.

Type Approval documentation

Tests carried out

According to DNV Rules for Ships Pt.4 Ch.8 Sec.7, DNV Class Guidance CG-0339.

Marking of product

Product identifier – Serial number

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.

Assessment to be performed at 2 and 3.5 year and at renewal.

END OF CERTIFICATE