



Certificate No:
TAA000031V

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Programmable Electronic System

with type designation(s)
IMAC-S

Issued to

Siemens Energy Co.,Ltd
Shanghai, China

is found to comply with

DNV GL rules for classification – Ships Pt.6 Ch.5 Sec.21 Cyber security

Application :

This type approval covers security capabilities in accordance with DNV security profile 1 and IACS UR E27 (Apr. 2022), subject to conditions stated in this certificate.

Issued at **Høvik** on **2022-12-06**

This Certificate is valid until **2024-12-05**.

DNV local station: **Shanghai**

Approval Engineer: **Knut Omberg**

for **DNV**

.....
Jarle Coll Blomhoff
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.



Form code: TA 251

Revision: 2021-03

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Product description

This type approval covers cybersecurity capabilities and reference architecture of the Integrated Monitoring, Alarm and Control System:

IMAC-S version 01.00

The IMAC-S is intended used on board ships and offshore installations and is designed for functionality such as remote control, alarming, monitoring, power management, propulsion control, and safety functions.

Application/Limitation

External devices connected by network (Modbus TCP or Profinet) to S7-1500 controllers in the IMAC-S shall be in the same security zone as the IMAC-S. Alternatively, such devices and the network infrastructure may be in other security zones on board meeting the same security level.

The Remote Diagnostic System (RDS) shall be used for remote support by Siemens Energy. Any remote access shall be controlled by the vessel crew, e.g. by physically connecting the network to the RDS server when needed. Before remote sessions are established, the service engineer from Siemens Energy shall be informed of any relevant vessel owner policies and regulations.

Detection and alarming of excessive network traffic in the IMAC-S shall be verified for each delivery.

Hardware components in the IMAC-S shall be located in areas with means to restrict physical access to authorized personnel.

Approval conditions

For each delivery to DNV class notation Cyber secure or Cyber secure(Essential) the following project-specific documents shall be submitted to demonstrate that the delivered system is covered by this type approval:

1. Topology diagram with indication of any external network interfaces, demonstrating system architecture as per TA-document "IMAC Network Topology"
2. Asset inventory with updated security patch versions, demonstrating consistency with TA-document "IMAC Hardware and Software Inventory"
3. Internal test report demonstrating correct configuration as per TA-document "IMAC Cyber Security Configuration"
4. Description of any modifications in the system to be delivered compared with the type approved system covered by this TA certificate
5. Updated version of Modification tracking list and Record of modifications as per TA-document "IMAC Development Plan and Modification Strategy".

Compliance with other applicable DNV rules shall be verified by product certification as required by Pt.4 Ch.9 (ships) or DNV-OS-D202 (offshore units).

Type Approval documentation

The type approved system is represented by the documents listed below. Any modification to the type approved system shall be reflected by updated document(s).

IMAC-S Version	Document	Revision
01.00	IMAC Cyber Security Functional Description	06.03
	IMAC Network Topology	06.00
	IMAC Software Development Plan and Modification Strategy	03.00
	IMAC Hardware and Software Inventory	03.01
	IMAC Cyber Security Test Procedure	06.01
	IMAC Cyber Security Configuration	06.03

Minor modifications to the type approved systems are to be identified by updating the last number in the version and are covered by this type approval.

Major modifications to the type approved systems are to be identified by updating the first number in the version and shall be informed to DNV for assessment and update of this certificate.

Tests carried out

Type testing was carried out in accordance with DNV rules Pt.6 Ch.5 Sec.21 edition July 2022 as per document "IMAC Cyber Security Test Procedure".

Relevant manuals and instructions of Siemens Energy's management system have been verified for compliance with IACS UR E27 chapter 5.

Marking of product

The components in the type approved systems are marked/identified in accordance with name, model and version as listed in document «IMAC Hardware and Software Inventory».

Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the type are complied with, and that no alterations are made to the product design or choice of systems, software versions, components and/or materials.

The main elements of the assessment are:

- Ensure that type approved documentation is available
- Inspection of factory samples, selected at random from the production line (where practicable)
- Review of production and inspection routines, including test records from product sample tests and control routines
- Ensuring that systems, software versions, components and/or materials used comply with type approved documents and/or referenced system, software, component and material specifications
- Review of possible changes in design of systems, software versions, components, materials and/or performance, and make sure that such changes do not affect the type approval given
- Ensuring traceability between manufacturer's product type marking and the type approval certificate

A renewal assessment will be performed at renewal of the certificate.

END OF CERTIFICATE