Certificate number: 80626/B0 BV
File number: MPA2501108
Product code: 4501H

This certificate is not valid when presented without the full attached schedule composed of 7 sections

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TYPE APPROVAL CERTIFICATE

This certificate is issued to

DEIF A/S

Skive - DENMARK

for the type of product

PROGRAMMABLE LOGIC CONTROL UNITS

iE 250, iE 350, iE 7, & iE 650

Requirements:
Bureau Veritas Rules for the Classification of Steel Ships and Offshore Units
EC Code : 31
Bureau Veritas Rules on Cyber Security for the Classification of marine units NR659

This certificate is issued to attest that Bureau Veritas Marine & Offshore did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.

This certificate will expire on: 19 Feb 2031

For Bureau Veritas Marine & Offshore,
At BV FREDERICIA, on 19 Feb 2026,
Jesper JENSEN

This certificate was created electronically and is valid without signature

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION :

iE 350 Marine: It is a versatile and modular - designed for marine applications. An extensive range of control, protection and supervision features. Applications range from generator control and protection to load sharing solutions.

Hardware Modules:

Type	Function
PSM3.1	Power supply module
PSM3.2	Power supply module
ACM3.1	Alternating current module
ACM 3.2	Differential current module
EIM3.1	Engine interface module
GAM3.1	Governor AVR module
GAM3.2	Governor AVR module
IOM3.1	Input/output module
IOM3.2	Input/output module
IOM3.3	Input/output module
IOM3.4	Input/output module
PCM3.3	Processor and communication module

Software: 2.0.x.x

Note: Excluding type PCM3.3, All remaining types are covered by BVTAC 42536/xx

iE 250: The iE 250 is a versatile and modular-designed controller for land applications.

Hardware Modules:

Type	Function
MIO2.1	Front/Base mounted controller input output board
PCM2.1	Front/Base mounted Processor and communication module
PIM1	Plug in module for 8 Digital bi-directional
PIM2	Plug in module for 4 Analogue bi-directional
iE 7	Local display

Software: 2.0.x.x

iE 650 : The iE 650 is a PLC-based programmable automation controller (PAC). The controller is a highly flexible, modular PLC and I/O system that is designed for usage across a wide range of industrial applications. It is reliable, robust and flexible.

Hardware Modules:

Type	Function
SIM6·1	EtherCAT interface
SIM6·2	EtherCAT interface
SIM6·3	EtherCAT interface
SIM6·4	EtherCAT interface
SIM6·5	EtherCAT interface
PDM6·1	Power module
PDM6·2	Power module
PCM6·1	Computer module
PCM6·2	Computer module
DIO6·1	Digital input and output module
DIO6·2	Digital input and output module
DIM6·1	Digital input module
DIM6·3	Digital input module
DOM6·1	Digital output module
DOM6·3	Digital output module
AIO6·1	Analogue input and output module
AIO6·2	Analogue input and output module
AOM6·2	Analogue output module
AIM6·1	Analogue input module
AIM6·2	Analogue input module
TIM6·1	Temperature input module
IFM6·1	Comunication interface module
IFM6·2	Comunication interface module
CMM6·1	High frequency analogue input module
CMM6·2	High frequency analogue input module
MIM6·1	Multifunctional input module
MIM6·2	Multifunctional input module

ROM6·1	Relay output module
ROM6·2	Relay output module

Software: 2.0.x.x

2. DOCUMENTS AND DRAWINGS :

- iE 350 Marine Data sheet No. 4921240657H EN, rev H, dated 09/12/2025.
- iE 250 intelligent energy controller Datasheet No. 49212406290Q, rev Q, dated 09/12/2025.
- iE 650 PLC Datasheet No.4921240662D, rev E, dated 09/02//2026.
- 4157200628, revision B, dated 2024/05/30.- 4157200611, revision D, dated 2023/09/12.
- Software Quality Plan for product codesys Interface LC V2.0.9.0 rev. A dated 05/05/2025.
- SQP bundle, AMC 600 AIM6.1 424353, rev 1.0.4.0.

3. TEST REPORTS :

For iE 250 & i7, EMC Test Report No. EPC 929 iE7 B-tests witnessed DNVdated 2025-01-15.
For iE 250 & i7, Environmental Test Report No. EPC 929 iE7 A-tests witnessed DNV dated 2025-01-15.
For iE 250 A test witnessed by DNV dated 2024-05-21.
For iE 250 B test witnessed by DNV dated 2024-05-21.
For iE 350, Environmental Test Report No. 929 iE350 A tests Witnessed DNV dated 2024-05-31
For iE 350, Environmental Test Report No. 929-01 Witnessed LR dated 14 Oct 2024
For iE 350, EMC Test Report No. 929 iE350 B tests Witnessed DNV dated 2024-05-24.
For iE 650, EMC Test Report No.929-01 Witness test iE 650 by LR.
For AMC 600, EMC Test Report No. 4910217501R, dated 07-06-2023.
For AMC 600, EMC Test Report No.4910216502I, dated 2020-03-16.
For AMC 600, EMC Test Report No.4910214100M, dated 07-06-2023.
For IO-bar, EMC Test Report No. 4910217502N, dated 07-06-2023.

For iE 650, 398-04 A-tests iE650 AMC 600 AIM, test witnessed by DNV, dated 2025-03-21.
For iE 650, 398-04 B-tests iE650 AMC 600 AIM, test witnessed by DNV,dated 2024-10-15.
For iE 650, 398-02 A-tests iE650 AMC 600 AIO AOM, test witnessed by DNV, dated 2025-03-21.
For iE 650, 398-02 B-tests iE650 AMC 600 AIO AOM, test witnessed by DNV, dated 2024-03-15.
For iE 650, IPA 929 Witness test Statement Rack 61 62, dated 27 october 2025.
For iE 650, IPA 929 A tests Rack incl PCM 62, test witnessed by DNV, dated 25-10-21.
For iE 650, IPA 929 A tests Rack incl PCM 61, test witnessed by DNV, dated 2025-10-21.
For iE 650, IPA 929 B tests Rack incl PCM 61, test witnessed by DNV, dated 2025-10-22.
For iE 650, IPA 929 B tests Rack incl PCM 62, test witnessed by DNV, dated 2025-10-20.

4. APPLICATION / LIMITATION :

4.1 - Bureau Veritas Rules for the Classification of Steel Ships and Offshore Units.
4.2 - Approval valid for ships and offshore units intended to be granted with the following additional class notations:
AUT-UMS, AUT-CCS, AUT-PORT, AUT-IMS and AUTO.
4.3 - BUREAU VERITAS Environmental Category, **EC Code: 31**
4.4 - The equipment fulfils the EMC requirements for installation in General Power Distribution Zones.
4.5 - Only Hardware and Firmware / Software successfully tested together in compliance with the ruless as referred to in cover page, according to the declaration of the manufacturer are covered by this certificate.
4.6 - Any modification of the hardware, firmware or software having an impact on the product performance or functionality has to be validated with type testing.
4.7 - In accordance with IACS UR E22 and as applicable to programmable devices for computer based systems of Category II or III, for each ship application:
- Ship specific documentation is to be submitted including software documentation and categorization of the computer based system.
- Inspection and testing before installation onboard is to be performed under the surveillance of the Society.
4.8 - Equipment covered by this Type Approval certificate has been tested according to requirements of IACS UR E10 rev 9
4.9 - This certificate demonstrates the compliance of this equipment with the requirements of UR E27 Rev.1 Sep 2023 as described in Annex.

5. PRODUCTION SURVEY REQUIREMENTS :

5.1 - The above products are to be supplied by DEIF A/S in compliance with the type and the requirements described in this certificate.
5.2 - This type of product is within the category HBV of Bureau Veritas Rule Note NR320 and as such does not require a BV product certificate.

5.3 - DEIF A/S has to make the necessary arrangements to have its works recognised by Bureau Veritas in compliance with the requirements of NR320 for HBV products.
5.4 - for information, DEIF A/S has declared to Bureau Veritas the following production site:

DEIF A/S
Frisenborgvej 33
DK-7800 Skive
DENMARK

5.5 - The components listed as per Note in section 1 have to be covered by a valid type approval certificate, issued by the Society.

6. MARKING OF PRODUCT :

6.1 - Trade name.
6.2 - Date of manufacture and serial number.
6.3 - Equipment type or model identification under which it was type-tested.

7. OTHERS :

7.1 - It is DEIF A/S responsibility to inform shipbuilders or their sub-contractors of the proper methods of fitting, use and general maintenance of the approved equipment and the conditions of this approval.
7.2 This certificate supersedes the Type Approval Certificate N° 80626/A0 BV issued by the Society.

***** END OF CERTIFICATE *****

Marine & Offshore

Attestation number: 80121/A1 BV

File number: TCF02_67

Product code: RA-CYBER

This attestation is not valid when presented without the full attached schedule composed of 7 sections

REVIEW ATTESTATION

This attestation is issued to

DEIF A/S

Skive - DENMARK

for

CYBERSECURITY REVIEW

iE 250, iE 350 and iE 650

Requirements:
NR659 Bureau Veritas Rules on cyber security for the classification of marine units.
IACS UR E27 Rev.1 Sep 2023 Cyber resilience of on-board systems and equipment.

This document is issued to attest that BUREAU VERITAS Marine & Offshore reviewed the technical documentation submitted for the equipment identified above. Details of this review are to be found in the "Schedule of Review" in the subsequent pages of this attestation.

For Bureau Veritas Marine & Offshore,
At BV FREDERICIA, on 08 Jul 2025,
Jesper JENSEN

This attestation was created electronically and is valid without signature

SCHEDULE OF REVIEW

1. PRODUCT DESCRIPTION :

iE 250, iE 350 and iE 650 are described in the certificate 80626/XX BV

2. DOCUMENTS AND DRAWINGS :

Filename	Reference
iE 350 E27 test specification	v. 1.0.0
iE 650 E27 test specification	v. 1.0.0
iE 250 E27 test specification	v. 1.1.0
CODESYS E27 test specification	v. 1.1.0
Handbook for Software development	v. 41.0.0
CODESYS Security Whitepaper	v. 9.0.0
Software life-cycle overview	v. 1.0.0
iEx50 Cyber Security E27 Recovery Plan	rev. A
iEx50 Cyber Security E27 Security Requirements	rev. B
iEx50 Security Capabilities	v. 1.0.0
iE x50 Asset Inventory	v. 1.2.0
PICUS PC Utility Software User's manual	v. 1.0.0
HW – Guide to construction changes	v. 1.0.0
Secure Development Lifecycle	v. 1.0.1
DEP SW Test Strategy	v. 1.0.0

No departure from the above documents shall be made without the prior consent of the Society. The manufacturer must inform the Society of any modification or changes to these documents and drawings.

3. TEST REPORTS :

Test reports “CODESYS E27 testplan signed”, “iE 350 E27 testplan signed”, “iE 250 E27 testplan signed”, and “iE 650 E27 testplan signed” dated 06/04/2024 were reviewed and approved for this attestation.

The following subjects were investigated:

- Identification & Authentication Control (FR 1):
  - IEC 62443-3-3/SR 1.1: Human user identification and authentication
  - IEC 62443-3-3/SR 1.3: Account management
  - IEC 62443-3-3/SR 1.4: Identifier management
  - IEC 62443-3-3/SR 1.5: Authenticator management
  - IEC 62443-3-3/SR 1.7: Strength of password-based authentication
  - IEC 62443-3-3/SR 1.10: Authenticator feedback

- Use Control (FR 2):
  - IEC 62443-3-3/SR 2.1: Authorization enforcement
  - IEC 62443-3-3/SR 2.5: Session lock
  - IEC 62443-3-3/SR 2.8: Auditable events
  - IEC 62443-3-3/SR 2.9: Audit storage capacity
  - IEC 62443-3-3/SR 2.10: Response to audit processing failures

- IEC 62443-3-3/SR 2.11: Timestamps

-System Integrity (FR 3):
- IEC 62443-3-3/SR 3.1: Communication integrity
- IEC 62443-3-3/SR 3.2: Malicious code protection
- IEC 62443-3-3/SR 3.3: Security functionality verification
- IEC 62443-3-3/SR 3.6: Deterministic output

- Data Confidentiality (FR 4):
- IEC 62443-3-3/SR 4.1: Information confidentiality
- IEC 62443-3-3/SR 4.3: Use of cryptography

- Timely Response to Events (FR 6):
- IEC 62443-3-3/SR 6.1: Audit log accessibility

- Resource Availability (FR 7):
- IEC 62443-3-3/SR 7.1: Denial of service protection
- IEC 62443-3-3/SR 7.2: Resource management
- IEC 62443-3-3/SR 7.3: System back-up
- IEC 62443-3-3/SR 7.4: System recovery and reconstitution
- IEC 62443-3-3/SR 7.6: Network and security configuration
- IEC 62443-3-3/SR 7.7: Least functionality

4. APPLICATION / LIMITATION :

4.1 - This attestation is an intermediate document and does not constitute by itself a BV Type Approval Certificate. This attestation is limited to cyber resilience of product described in 1. as per UR E27 Rev. 1 dated Sept.2023.
4.2 - The installation shall comply with the Manufacturer's recommendation described in the above-referenced documentation.
4.3 - This attestation is only valid when attached to the valid Type Approval Certificate 80626/XX BV.
4.4 - This attestation has been issued based on the review of documentation provided for the Type Approval Certificate 80626/A0 BV.
4.5 - It is manufacturer’s responsibility to inform the Society of any modification or changes which could impact the validity of this attestation.

5. PRODUCTION SURVEY REQUIREMENTS :

5.1 - This system product is to be supplied by **DEIF A/S** in compliance with the type described in this attestation.
5.2 - For information **DEIF A/S** has declared to Bureau Veritas the following production site:

Frisenborgvej 33
DK-7800 Skive
DENMARK

6. MARKING OF PRODUCT :

N/A

7. OTHERS :

7.1 - It is **DEIF A/S** responsibility to inform shipbuilders or their sub-contractors of the proper methods of fitting, use and general maintenance of the approved equipment and the conditions of this approval.

***** END OF ATTESTATION *****