



CERTIFICATE NUMBER	25-0344524-PDA-DUP
EFFECTIVE DATE	22-Sep-2025
EXPIRY DATE	21-Sep-2030
ABS TECHNICAL OFFICE	Hellenic - Piraeus Eng Department

CERTIFICATE OF Product Design Assessment

This is to certify that a representative of this Bureau did, at the request of

KONGSBERG MARITIME CHINA LTD.

located at

**NO. 136 NORTH FUTE ROAD, CHINA (SHANGHAI) POILOT FREE
TRADE ZONE, , SHANGHAI, China**

assess design plans and data for the below listed product. This assessment is a representation by the Bureau as to the degree of compliance the design exhibits with applicable sections of the Rules. This assessment does not waive unit certification or classification procedures required by ABS Rules for products to be installed in ABS classed vessels or facilities. This certificate, by itself, does not reflect that the product is Type Approved. The scope and limitations of this assessment are detailed on the pages attached to this certificate.

Product: Alarm and Control System
Model: K-Chief 700
Endorsements:
Tier: 3 - Type Approved, unit certification not required

This Product Design Assessment (PDA) Certificate remains valid until 21/Sep/2030 or until the Rules and/or Standards used in the assessment are revised or until there is a design modification warranting design reassessment (whichever occurs first).

Acceptance of product is limited to the "Intended Service" details prescribed in the certificate and as per applicable Rules and Standards.

This Certificate is valid for installation of the listed product on ABS units which exist or are under contract for construction on or previous to the effective date of the ABS Rules and standards applied at the time of PDA issuance. Use of the Product for non-ABS units is subject to agreement between the manufacturer and intended client.

American Bureau Of Shipping
Siddharth Barua,Engineer/Consultant

NOTE: This certificate evidences compliance with one or more of the Rules, Guides, standards or other criteria of ABS or a statutory, industrial or manufacturer's standards. It is issued solely for the use of ABS, its committees, its clients or other authorized entities. Any significant changes to the aforementioned product without approval from ABS will result in this certificate becoming null and void. This certificate is governed by ABS Rules 1-1-A3/5.9 Terms and Conditions of the Request for Product Type Approval and Agreement (2010)

KONGSBERG MARITIME CHINA LTD.

NO. 136 NORTH FUTE ROAD, CHINA (SHANGHAI) POILOT FREE TRADE ZONE

SHANGHAI SHANGHAI

China

Telephone: +86 213279888

Fax: +86 2131279555

Email: Ying.Han@km.kongsberg.com

Web: <http://www.km.kongsberg.com>

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Product: Alarm and Control System

Model: K-Chief 700

Endorsements:

Intended Service:

For use on ABS classed vessels and offshore facilities in accordance with the listed ABS Rules and International Standards.

Description:

K-Chief 700 is an integrated system which can carry out the following functions:

- Alarm and Monitoring
- Power Management
- Control of Machinery, Cargo, Ballast, Vessel Mode, Heating, Venting and Air Conditioning

AIM Basis Software Release 8.3, 8.5, 8.6, 8.7, 8.8, 8.9, 8.10, 8.11 and 8.12 for the above functions used in K-Chief 700.

Notes:

Hardware components which are specific for the K-Chief 700 systems are listed in this certificate. Please refer to attachment "Hardware List Table" for hardware list.

Rating:

Power supply: 115 / 230 VAC (+10%, -15%);
Cabinet: IP 22; RCU 602 and RMC-ST: IP 20
Operating temperature: -15 Deg. C to 55 Deg. C

Service Restriction:

1. Unit Certification is required for the products, specified on ABS Rules for Building and Classing Marine Vessel Rules (2025) 4-1-1/Table 3 item 34 (computer-based systems Category III). Unit Certification may be carried out during Factory Acceptance Test of the overall system.
2. Evidence and documentation as required by 4-9-3/Table 3 of the ABS Rules for Building and Classing Marine Vessel Rules (2025), is to be submitted for review when requested.
3. Factory acceptance testing, as these are detailed in 4-9-3/8.3.7 of the ABS Rules for Building and Classing Marine Vessel Rules (2025) are to be witnessed by an ABS Surveyor.
4. On-board complete system and integration testing, as these are detailed in 4-9-3/8.5.6 and 4-9-3/8.5.7 of the ABS Rules for Building and Classing Marine Vessel Rules (2025) are to be witnessed by an ABS Surveyor.
5. If the manufacturer or purchaser request an ABS Certificate for compliance with a specification or standard, the specification or standard, including inspection standards and tolerances, must be clearly defined.
6. The current PDA does not cover any MVR 4-9-14 requirements, however when the system is proposed for use on board a vessel with construction contract date after 1 July 2024, a vessel-specific review for compliance with applicable requirements of ABS Marine Vessels Rules (2025) sections 4-9-13, and 4-9-14 is still required, to verify project-specific elements such as cyber resilience requirements.

Comments:

1. The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.
2. K-Chief 700 system is listed as System Category III in accordance with 4-9-3/7.1 Table 1 of the ABS Rules for Building and Classing Marine Vessel Rules (2025).
3. Tests and approval are for the basic K-Chief 700 components. Each configuration and external connection are to be specifically approved.

Notes/Drawing/Documentation:

1. Drawing No. 110-0026741, RCU601 Hardware Module Description, Revision: B, Pages: 32
2. Drawing No. 300984, COP-05 Input Panel - Hardware Module Description, Revision: E, Pages: 22

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3. Drawing No. 323935, RMP420S - Hardware Module Description, Revision: E, Pages: 32
4. Drawing No. 392044, COP05 ALC SA, Revision: A, Page: 1
5. Drawing No. 434902, Software Quality Plan and Life Cycle Activities for K-Chief, K-Chief 700 and K-Safe, Revision: B, Pages: 14
6. Drawing No. -, EX-1330M Datasheet, Revision: -, Pages: 2
7. Drawing No. 482250, KM Module Declaration of Identity (DoI) with Statements for ENV Test Report, Revision: A, Pages: 12
8. Drawing No. 493992, K-Chief Product Description, Revision: B, Pages: 110
9. Drawing No. 310806, DELTA Test Report of RMP420 and RDIOR420, Delta Test Report, Dated 15 March 2007, Revision: A, Pages: 62
10. Drawing No. -, IACS E10 Rev.8, Revision: -, Pages: 2
11. Drawing No. 1031801-KM-I-CA-0001, FMEA Document K-Chief, Revision: 02, Pages: 64
12. Drawing No. REP008558B, Test Report for RCU601, NEMKO Test Lab, Dated 29 January 2025, Revision: B, Pages: 79
13. Drawing No. E19179.01, Test Report, NEMKO Test Lab, Dated 25 March 2020, Revision: 01, Pages: 75
14. Drawing No. E21088.03, Test Report, NEMKO Test Lab, Dated 28 October 2021, Revision: 03, Pages: 122
15. Drawing No. REP019643, Test Report for Panel Input Mk3 COP 05, NEMKO Test Lab, Dated 17 January 2024, Revision: -, Pages: 72
16. Drawing No. -, HW List K-Chief 700, Revision: -, Pages: 1

Terms of Validity:

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STANDARDS

ABS Rules:

Rules for Conditions of Classification (2025) – 1A-1-4/7.7, 1A-1-A3, 1A-1-A4, which covers the following:
Rules for Building and Classing Marine Vessel Rules: 4-9-1/7.3.3, 4-9-1/7.3.5, 4-9-2/3.1.1, 4-9-2/3.1.2, 4-9-2/3.1.3, 4-9-2/3.1.4, 4-9-2/3.1.5, 4-9-2/3.5, 4-9-2/3.7, 4-9-2/7.1, 4-9-2/7.5, 4-9-2/7.7, 4-9-2/7.9, 4-9-2/7.11, 4-9-2/7.13, 4-9-3/5, 4-9-3/7, 4-9-3/8.3.4, 4-9-3/13.1, 4-9-4, 4-9-9/1, 4-9-9/3, 4-9-9/7, 4-9-9/13, 4-9-9/Table 1 and Table 2.
Rules for Conditions of Classification (2025) – Offshore Units 1B-1-4/9.7, 1B-1-A2, 1B-1-A3, which covers the following:
Rules for Building and Classing Offshore Units (2025): 6-1-1/9, 6-1-1/13.
DP Guide (2025): 1/9.3, 5/1.

National:

NA

International:

IEC 60529:2019

IEC 61508:2010

IEC 62061:2024

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IACS UR E10 Rev.9:2023
IACS UR E22 Rev.3:2023 (CAT III)

Government:
NA

EUMED:
NA

OTHERS:
NA