Confirmation of Product Type Approval

Company Name: KONGSBERG MARITIME KOREA LTD.

Address: 1058-7, DALSAN-RIJUNGKWAN-MYEON,GIJANG-GUN BUSAN Korea, Republic of

Product: ACC, Electronic Ship Automation Equipment

Model(s): K-Chief 600

Endorsements:

Certificate Type	Certificate Number	Issue Date	Expiry Date
Product Design Assessment (PDA)	24-00T2541233-PDA-DUP	03-JUL-2024	02-JUL-2029
Manufacturing Assessment (MA)	21-4886774	11-AUG-2021	04-SEP-2026
Product Quality Assurance (PQA)	NA	NA	NA

Tier
5 - Unit Certification Required

Intended Service
For use on ABS Classed Vessels and Offshore Facilities in accordance with the listed ABS Rules and International Standards.

Description
K-Chief 600, is an integrated system which can carry out the following functions:

K-Chief 600:

- Alarm and Monitoring

- Auxiliary Machinery Control

- Power Management

- Engine/Generator Protection

Additional information with detailed list of assemblies and sub-assemblies is provided on an attachment "Hardware List Table".

Software version according to document "Revision History for K-Chief 600 / AutoChief 600 Software: 359018. 12", No. 386083 - Rev. G dated 24 May 2022.

Ratings
Supply voltage: 18 -32 V DC from a 230 VAC UPS

Operational temperature: -15 to +70 C degrees.

Maximum relative humidity: 96% non-condensing

Ambient storage temperature: -25 to +70 C degrees in a dry area with approx. 70% humidity

DPU Degree of protection: IP 20 or IP 54 with extra encapsulation. DPUs are qualified for non-resilient mounting on machinery.

Pushbutton 4 (PB4): Supply voltage: 18-24 VDC, Power consumption: 1W, Operating temperature: -15°C to 70°C degrees., IP56 (Front)

L2C (LAN to 2 CAN gateway): Supply voltage:18 - 32 VDC, Power: 2.4 W Max, Operating temperature: -15°C to + 70°C degrees., Ingress protection: IP22.

Service Restrictions
1) Unit Certification is required for the products, specified on ABS Rules for Building and Classing Marine Vessel Rules (2024) 4-1-1/Table 3 item 35. Unit Certification may be carried out during Factory Acceptance Test of the overall system.

2) When it is used for Computer-Based Systems Category II or III services in 4-9-3/Table 1 of Marine Vessels Rules, the documentation required by 4-9-3/8.3 and 4-9-3/15 Table 3, Table 4 and Table 5 of the 2024 Marine Vessels Rules are to be maintained by manufacturer and submitted for ABS upon requested.

3) Fault simulation, factory acceptance testing, on-board complete system and integration testing as these are detailed in 4-9-3/Table 5, of the ABS Rules for Building and Classing Marine Vessel Rules 2024 are to be witnessed by an ABS Surveyor.

4) If the manufacturer or purchaser requests an ABS Certificate for compliance with a specification or standard, the specification or standard, including inspection standards and tolerances, must be clearly defined.

Comments
1) The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.

2) K-Chief 600, systems are listed as System Category III in accordance with 4-9-3/Table 1 of the ABS Rules for Building and Classing Marine Vessel Rules (2024).

3) Tests and approval are for the basic systems. Each configuration and external connection are to be specifically approved.

4) This certificate does not cover any requirements for the cyber resilience for onboard system, equipment’s and for vessels.

Notes, Drawings and Documentation
Drawing No. DANAK 1916085, DANAK 1916085 L2C, Revision: 0, Pages:

Drawing No. KM-GUI-0118 Rev.A, Guideline for Secure Development Lifecycle, Revision: A, Pages: 1

Drawing No. 110-0051790 Rev.E, Cyber Resilience Asset Inventory, Revision: E, Pages: 1

Drawing No. 300984E , HMD for new product 110-0049940 - Panel Input Mk3 COP 05, Revision: E, Pages: 1

Drawing No. DANAK 1910922, DANAK 1910922 SCU, Revision: 0, Pages:

Drawing No. 5, Following letter to the appplication for 22-2274357-PDA, Revision: A, Pages: 1

Drawing No. 110-0056696 Rev.C, Cyber Resilience Security Capabilities, Revision: C, Pages: 1

Drawing No. 6, Declaration of the Absence of Asbestos 420563, Revision: A, Pages: 1

Drawing No. 482250, 482250A KM module Declaration of Identity (DoI), Revision: A, Pages:

Drawing No. DANAK 197724, DANAK 197724 Conducted low frequency immunity testing of AC-C20 Units, Revision: 0, Pages:

Drawing No. 392044A, Assembly drawing for new product 391890 - COP05 ALC Stand Alone, Revision: A, Pages: 1

Drawing No. DANAK 1911307, DANAK 1911307 C3xe,C4xe and RAi-10tcxe, Revision: 0, Pages:

Drawing No. 7, ABS London Plan Approval Request For 22-2274357-PDA, Revision: A, Pages: 1

Drawing No. DANAK 198234, DANAK 198234 Rev.A PSO-P -PSO-S, Revision: A, Pages:

Drawing No. KM-PROC-0080 Rev.At, Change management, Revision: A, Pages: 1

Drawing No. DANAK 197329, DANAK 197329 ACP, PBT, MPP, MPD, Revision: 0, Pages:

Drawing No. KM-PRO-0120 Rev.A, Configuration Management Procedure, Revision: A, Pages: 1

Drawing No. KM-GUI-9504 Rev.A, Guidelines for service on AIM systems, Revision: A, Pages: 1

Drawing No. 3, HW List K-Chief 600, Revision: A, Pages: 1

Drawing No. 482250A, KM module Declaration of Identity (DoI), Revision: A, Pages: 1

Drawing No. DANAK 198195 Rev.1, DANAK 198195 Rev.1 COP05, Revision: 1, Pages:

Drawing No. 110-0062446 Rev.A, K-Steering System Topology, Revision: A, Pages: 1

Drawing No. 110-0056695 Rev.A, AutoChief System Topology, Revision: B, Pages: 1

Drawing No. Nemko E19179.01, Test report for new product 446030 - USB3.03.13.2 to 4x Gb Ethernet, Revision: A, Pages: 1

Drawing No. Nemko REP019643, Test report for new product 110-0049940 - Panel Input Mk3 COP 05, Revision: A, Pages: 1

Drawing No. DANAK 198195, DANAK 198195 COP05, Revision: 0, Pages:

Drawing No. 110-0056698, Test Procedure for AC600 & K-Steering ABS signed, Revision: D, Pages:

Drawing No. DANAK 1911846, DANAK 1911846 Rev.1 C3xe C4xe IEC 60255, Revision: 1, Pages:

Drawing No. 463242B DS, Datasheet for new product 446030 - USB3.03.13.2 to 4x Gb Ethernet, Revision: B, Pages: 1

Drawing No. Nemko E21088.03 (KM 487708B), Test report for new product 391890 - COP05 ALC Stand Alone, Revision: C, Pages: 1

Drawing No. DANAK 197561, DANAK 197561 RPME RPMU PBT MPP MPD, Revision: 0, Pages:

Drawing No. KM-GUI-9505 Rev.D , Guidelines for backup on AIM system, Revision: D, Pages: 1

Drawing No. KM-GUI-9505 Rev.D, Guidelines for backup on AIM system, Revision: D, Pages: 1

Drawing No. 1, Request for upgrade of 22-2274357-PDA, Revision: A, Pages: 1

Drawing No. KM-PROC-0080 Rev.A, Change management, Revision: A, Pages: 1

Drawing No. 4, HW list AC600 & K-Steering, Revision: A, Pages: 1

Drawing No. DANAK 198234, DANAK 198234 PSO-P - PSO-S, Revision: 0, Pages:

Drawing No. 2, KM Doc package matching UR E27 certification, Revision: A, Pages: 1

Term of Validity
This Product Design Assessment (PDA) Certificate remains valid until 02/Jul/2029 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.

ABS Rules
Rules for Building and Classing Marine Vessel Rules 2024 : 1A-1-4/7.7, 1A-1-A3, 1A-1-A4, 4-9-2/3.1.1, 4-9-2/3.1.2,4-9-2/3.5, 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, 4-9-3/7.1, 4-9-3/8.3.1,4-9-3/8.3.2, 4-9-3/8.3.3, 4-9-9/8.3.4,4-9-3/13.1,4-9-4,4-9-9/3,4-9-9/15.1 TABLE1.

Rules for Building and Classing Mobile Offshore Units 2024 : 6-1-1/9, 6-1-1/13.

International Standards
NA

EU-MED Standards
NA

National Standards
NA

Government Standards
NA

Other Standards
IACS UR E10 Rev 8:2022

IACS UR E22 Rev 2:2016 (CAT II and III)

Corporate ABS Programs
American Bureau of Shipping
Print Date and Time: 10-Nov-2025 3:10

ABS has used due diligence in the preparation of this certificate, and it represents the information on the product in the ABS

Records as of the date and time the certificate is printed.

If the Rules and/or standards used in the PDA evaluation are revised or if there is a design modification (whichever occurs first), a PDA revalidation may be necessary.

The continued validity of the MA is dependent on completion of satisfactory audits as required by the ABS Rules. The validity of both PDA and MA entitles the product to receive a **Confirmation of Product Type Approval**.

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 prior to the effective date of the ABS Rules and standards applied at the time of PDA issuance. ABS makes no representations regarding Type Approval of the Product for use on vessels, MODUs or facilities built after the date of the ABS Rules used for this evaluation.

Type Approval requires Drawing Assessment, Prototype Testing and assessment of the manufacturer's quality assurance and quality control arrangements. The manufacturer is responsible to maintain compliance with all specifications applicable to the product design assessment. Unless specifically indicated in the description of the product, certification under type approval does not waive requirements for witnessed inspection or additional survey for product use on a vessel, MODU or facility intended to be ABS classed or that is presently in class with ABS.

Due to wide variety of specifications used in the products ABS has evaluated for Type Approval, it is part of our contract that; whether the standard is an ABS Rule or a non-ABS Rule, the Client has full responsibility for continued compliance with the standard.

Questions regarding the validity of ABS Rules or the need for supplemental testing or inspection of such products should, in all cases, be addressed to ABS.