TYPE APPROVAL CERTIFICATE

Certificate no.:
TAA00003E3
Revision No:
1

This is to certify:

that the Control and Monitoring System

with type designation(s)
K-Chief 700

issued to
Kongsberg Maritime AS
Kongsberg, **Norway**

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

Application:

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV. Location classes are listed in the certificate.

Issued at **Høvik** on **2026-05-27**

This Certificate is valid until **2028-05-26**.
DNV local unit: **Sandefjord**

Approval Engineer: **Knut Omberg**

for **DNV**
This document has been digitally signed and will therefore not have handwritten signature

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.

Product description

The following equipment and functions are included in the Type Approval:

K-Chief 700:

Equipment and basic Alarm, Monitoring and Control functionality as described in the Product Description 304844/D

Vessel related functionality as described in Product Description 304844/C, sec.9, (vessel specific configuration will be addressed for each delivery, ref. Approval Conditions, Product Certificate). These functions can typically include:

- Watch call (alarm extension systems)
- Power Management
- Machinery Control
- Cargo Control
- Ballast Control
- Vessel Performance Monitoring System
- Vessel Mode Control
- Heating, Venting and Air Conditioning Controls

AIM Basis Software Release 8.3, 8.5, 8.6, 8.7, 8.8, 8.10, 8.12 and 8.13 for the above functions used in K-Chief 700.

Hardware components for the K-Chief 700 system are listed in this certificate.

Module	Product Description	Part No.	HW module descr. No.	Location Classes	Compass Safe Distance
Operator panels	COP 05 Panel Input Mk3	110-0049940		B/B/A/B/A	
	COP05 ALC Stand Alone	391890		B/A/B/B/IP20	
	ALC Panel	603526	300977	B/B/A/A/*	300 mm
	ALB Panel	110-0051818		B/B/A/B/IP20	300 mm
	BU AUT Panel	603529	301028	B/B/A/A/*	250 mm
EFI	EFI-16	321492	324876	B/B/A/A/IP20	500 mm
Media Converter	Fiber Converter RMC-ST	321520	325472	B/B/A/B/IP20	200 mm
Watch Call	WCC600	373860	381827	B/B/B/B/IP44	1200 mm
Controller	RCU602	383962	429804	B/B/A/B/IP20	300 mm
	RCU502i	421768	408644	B/B/A/B/IP20	300 mm
	RCU601	477601	110-0026741	B/B/A/B/IP20	300 mm
IO Units	RMP420	306712	311165	B/B/A/B/IP20	50 mm
	RMP420S	319824	323936	B/B/A/B/IP20	50 mm
	RDIOR420	306713	311163	B/B/A/B/IP20	50 mm
	RDIO420S	316564	323936	B/B/A/B/IP20	1850 mm
	RMP422i	408442	424828	B/B/A/B/IP20	350 mm
	RMP422Si	408406	424829	B/B/A/B/IP20	350 mm
	RMP200-8	603443	300992	B/B/A/B/IP20	50 mm
Other	RSER200-4	603444	300993	B/B/A/B/IP20	50 mm
	RMP201-8 Module	324400	330111	B/B/A/B/IP20	50 mm
	RHUB200-5	603442	300994	B/B/A/B/IP20	50 mm
	Earth fail indicator, EFI-16-2	110-0019139		B/B/A/B/IP20	200 mm
	RTL8153B-USB3.0/3.1/3.2 to 4x Gb Ethernet	446030		B/A/A/B/A	700 mm
Panels	TBP, Tracker Ball Panel, mounted in Pointer Carrier Panel, PCP (385675)	388930	390760/A	B/B/A/B/*	500 mm
	BU DP	603530	300983/B	B/B/A/B/*	200 mm
	ALC NAV	603527	301021/B	B/B/A/B/*	200 mm
	BU NAV	603528	301026/B	B/B/A/B/*	200 mm
	BU TC	603531	301025/B	B/B/A/B/*	200 mm

Module	Product Description	Part No.	HW module descr. No.	Location Classes	Compass Safe Distance
	ALC NAV Stand Alone	378937	383188/B	B/B/A/B/*	200 mm

Components marked with "**" are cabinets, tested for shock and vibration.
Printers, (marked with "***"), are tested for radiated disturbance/emissions only.

Location classes in the table above are denoted in the following sequence:
Temperature / Humidity / Vibration / EMC / Enclosure class

Where enclosure class is denoted as "*", required enclosure protection according to the rules to be provided upon installation onboard.

Where compass safe distance is not listed, a minimum distance of 5 meters shall be applied according to section 6.3 in ISO 694:2000

Application/Limitation

With reference to DNV Rules for Classification of Ships Pt.4 Ch.9, documentation specific for the delivery as listed below is required submitted for approval to DNV.

- Reference to this type approval certificate
- Reference to valid type approval certificates for other hardware/third party equipment, alternatively datasheets of similar information documenting compliance with environmental requirements in DNV Pt.4 Ch.9 Sec.5 [2]
- System block diagram/topology drawing
- Power supply arrangement (may be part of the system block diagram)
- Equipment list/asset inventory
- Functional description
- List of control and monitored points (I/O list, including data transferred on communication links)
- For deliveries of integrated systems, a functional failure analysis documenting compliance with requirements for redundancy, segregation and effect of single failures in the system.
- Test program for product certification

For newbuilding projects, identical deliveries to sister vessels with the same DNV project ID are to be documented/submitted as one common transmittal.

The following documentation of the actual application is to be submitted for approval in each case:

- Reference to this Type Approval Certificate
- System block diagram
- Functional description
- Power supply arrangement (may be part of the System block diagram)
- I/O list
- Test program for certification

The Type Approval covers hardware and software listed under Product description.

The type approval is valid for AIM basis software release: 8.3, 8.5, 8.6, 8.7,8.8, 8.10, 8.12 and 8.13.

When the type approved software is revised (affecting all future deliveries) DNV is to be informed by forwarding updated software version documentation. If the changes are judged to affect functionality for which rule requirements apply a new functional type test may be required and the certificate may have to be renewed to identify the new software version.

Product certificate
Each delivery of the application system is to be certified according to Pt.4 Ch.9 Sec.1. The Certification is to be performed at the manufacturer before the system is shipped to the yard. After certification the clause for software control will be put into force

Clause for application software control
All changes in software are to be recorded as long as the system is in use on board. Documentation of major changes is to be forwarded to DNV for evaluation and approval before implemented on board. Certification of modified functionality may be required for the particular vessel.

Tests carried out

- Applicable tests according to Standard for Certification 2.4 (April 2006), and DNV-CG-0339 (2021-09) as documented in the various test reports submitted.
- IAT/FAT procedure for K-Chief doc 496335 rev. D

Place of manufacture

- Kongsberg Maritime Kirkegårdsveien 45, 3616 Kongsberg, Norway
- Kongsberg Maritime AS Bekkajordet 8A 3189 Horten, Norway
- Kongsberg Maritime 9-7, Sandan 3-ro, Jeonggwan-Eup, Gijang-gun, 46027, Busan, Korea
- Kongsberg Maritime China Ltd., No. 136 North Fute Road, China (Shanghai), Pilot Free Trade Zone, 200131, China

Marking of product

- Components are marked with product name and product number as listed in the table above.
- Basic software version is displayed in the system graphical user interface.
- Each project application configuration is documented in a dedicated version log file which is specific for each vessel.

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

Periodical assessment is to be performed at renewal of this certificate.

END OF CERTIFICATE