



# Type Approval Certificate

[ Automatic Control System ]

**Initial Approval** 16 May 2018  
**Manufacturer** Kongsberg Maritime AS, Horten  
 Bekkajordet 8, NO-3189 Horten, Norway  
**Product Description** Safety Control and Monitoring System  
 Type: K-Chief 700 , K-Chief and K-Safe  
 " See Appendix 1 "

**Approval Condition** " See Appendix 1 "

**THIS IS TO CERTIFY** that the above-mentioned product has been approved in accordance with the relevant requirement of this Society's Rules and / or of the recognized standards as follows.

Pt. 6, Ch. 2, Art. 301 of the Rules for Classification, Steel Ships.

This Certificate is valid until 6 December 2027

Issued at Busan, Korea on 14 December 2022



This certificate is signed electronically in accordance with IMO FAL.5/Circ.39/Rev.2. Validation and authentication of the certificate can be confirmed from "<http://e-cert.krs.co.kr>" by using the tracking No(ME22037028062) and certificate No.(CPH27937-AC003).



**KOREAN REGISTER**

*General Manager of  
Marine & Ocean Equipment Team*

- Note :**
1. This certificate will be valid subject to complying with the approval conditions described on the certificate and/or on the Rules of this Society.
  2. This certificate will be invalid from the expiry date aforementioned unless the extension or renewal has been granted to the applicant or the manufacturer.
  3. Any significant modifications or changes in design or construction to the above product without approval from this Society will render this certificate invalid.
  4. Should the specified rules, regulations or standards be amended during the validity of this certificate, the product is to be re-approved by this Society in accordance with the requirements as amended.

## Product Description and/or Approval Condition

Date of Issue : 14 December 2022

### A. Product Description

#### 1. Product Specification

##### A. Product Description :

- K-Chief700 / K-Chief is an integrated control system(ICS) used for distributed monitoring and control in marine applications.
- K-Safe is a range of safety solutions ; Emergency Shutdown, Fire&Gas Detection and Protection System and Process Shutdown System

##### 1) K-Chief 700 / K-Chief

Equipment and basic Alarm, Monitoring and Control functionality as described in the production description 304844/D or 493992/A, including

- Operator Station
- History Station
- Field Station
- Network

Vessel-related functionality as described in production description 304844/D.

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

##### 3) K-Safe

Alarm Management System

- Alarm Monitoring
- Alarm System

Emergency Shutdown System

- K-Safe 3(1oo2 redundancy), Dual I/O
- K-Safe 2(1oo2 computer redundancy), Shared I/O

Process Shutdown System

- K-Safe 3(1oo2 redundancy), Dual I/O
- K-Safe 2(1oo2 computer redundancy), Shared I/O
- K-Safe 1(single system)

Fire&Gas Detection and Protection System

- K-Safe 3(1oo2 redundancy), Dual I/O
- K-Safe 2(1oo2 computer redundancy), Shared I/O
- K-Safe 1(single system)

System functionality as described in K-Safe Product Description 163875/G

##### 3) Common for K-Chief 700 and K-Safe

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

##### 4) Comprising of modules

- KMO5 : Operator Station
- ALC(NAV) Panel : Alarm and Command Panel
- CRP(Mk2) : Control Room Panel
- BU AUT : Configuration input panel for automation systems
- Input Panel(Mk2) : Button keypad with trackball
- BUS-Term : Termination board for Kongsberg RBUS and SPBUS
- EAP(200) : Extended Alarm Panel
- EFI(16) : Earth Fault Indicator
- RMC-ST : Remote Media Converter
- PTB : Push Button Telegraph

## Product Description and/or Approval Condition

Date of Issue : 14 December 2022

- WBU : Watch Bridge Unit(with display or alarm groups)
  - WCU : Watch Cabin Unit(with/without display)
  - WCC600 : Watch Calling C600 Panel
  - RCU : Remote Controller Unit - 501 / 502 / 502(i) / 602
  - RDIO : Remote Digital I/O module o 401S / 420S
  - RDIOR 420 : Remote Digital I/O module and Relay channels
  - RMP : Remote MultiPurpose I/O module - 420 / 422(i) / 422S(i) / 200-8 / 201-8
  - RTB420 : Remote Termination Board
  - RHUB200-5 : Communication HUB and Repeater
  - RSER200-4 : Serial Line Communication Interface
  - HP3600-24(-SFP) : Network Switch
- \* The K-Chief Hardware components which are common with the C600 platform, are listed in the type approval certificate CPH27937-AC002 for K-Chief 500/600 and CPH27937-AC001 for AutoChief C20 and AutoChief 600.

### 2. Approved Drawings and Documents

- 1) Documents
  - Product Description, KONGSBERG - K-Chief 700, doc. No. 304844/D
  - Operator Manual, KONGSBERG - K-Chief 700, doc. No. 338309/A
  - Product Description, KONGSBERG - K-Safe, doc. No. 163875/I
  - Operator Manual, KONGSBERG - K-Safe, doc. No. 411129/A

### 3. Test Reports, etc.

- 1) Test Reports No.
  - DANAK-193886 K250600-3, 197537 E502029-3, 198195 A503298-1 Rev.1, 198508 A503547-1, 198575 DELTA-A504273-3, 198577 DELTA-A504327-2, 198637 DELTA-A504352-1, 198696 A504446-1, 1910121 A505138, 1910264 A505037, 1910280 A505687, 1910281 A505749 Rev.1, 1910541 A506114, 1910830 A506580, 1910979 A506924-1, 1911523 A507567, 19/12618 T202566, 1912904, 1911658 Rev.1
  - Nemko E14200.00, 69187, 39760, E13012.00, E14127.00, E13144.02
  - TI-3010-13-014234
  - E21088.03 issued by NEMKO, dated 2021-10-28

## B. Approval Condition

### 1. Application & Limitation

- 1) This approval is granted on the basis of the approved documentation and the test reports (IACS UR E10 Rev.8).
- 2) The manufacturer should inform this Society of all kinds of revisions of the equipment including software. If the changes are recognized to affect the functionality of the approved equipment, a type test to confirm the reliability of the revised equipment may be performed in the presence of our surveyor.

### 2. Individual Product Cert. and Drawing Approval Requirement

- 1) Individual Product Certification is required.
- 2) In the case where this system is installed on board, the system drawings for individual vessel are to be approved by this Society.

### 3. Marking

- 1) The product or packing is to be marked with the manufacturer's name and type designation on a suitable position.

### 4. Others

N/A

< End of Certificate >