



Type Approval Certificate

[Control & Safety System]

Initial Approval 20 December 1999
Manufacturer Kongsberg Maritime AS, Horten
 Bekkajordet 8, NO-3189 Horten, Norway

Product Description Electronic Ship Automation Equipment

Type: AutoChief C20 and AutoChief C600 Propulsion Control System
 K-Thrust 600 and K-Steering 600 Thruster and Steering Control System

" 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 19 December 2024

Reissued 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(ME22037956060) and certificate No.(CPH27937-AC001).



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

- 1) This system includes some or all of the following units.
 - AutoChief C20 & AutoChief C600 (Common modules)
 - Digital Governor Unit (DGU)
 - RPM Unit (RPMU and RPMe)
 - Main Engine Interface (MEI)
 - Engine Safety Unit (ESU/ESU12)
 - Autochief Control Panel (ACP C20 Black)
 - Lever Telegraph Unit (LTU and LTU w. Motor)
 - Lever Telegraph Unit 11 (LTU11 and LTU11 ME)
 - Electric Shaft System (ESS)
 - Multi-Purpose Panel (MPP Flush/Wall Mount Black)
 - Multi-Purpose Display (MPD Flush/Wall Mount Black)
 - Push Button Telegraph (PBT)
 - Digital Servo Unit (DSU 05/15/30)
 - Electrical Actuator (ELACT 0512/1325/1335/2945/0516)
 - Multi-Serial Interface-12 (MSI-12)
 - Bridge Wing Unit Panel (BWU-09)
 - Electric Fuel Actuator (SEFA 160 & SEFA 800)
 - Power Switch Over unit, standard version with galvanic separation between power sources and earth fault detection (PSO)
 - Power Switch Over unit, without galvanic separation between power sources and with fuses (PSO-P)
 - RPM pickup unit CAN (RPC)
 - Torque Motor Interface(TMI)
 - Rudder Feedback Unit MK2(RFU MK2)
 - Push Button 4(PB4), LAN to CAN Gateway(L2C)
 - Electrical Fuel Actuator (ELACT 3812 & DSU38)
 - Bridge Wing Unit (BWU21)
 - Control Panel(CP12)
 - Button Extension (ABE11/KBE15)

AutoChief C600

- Lever Telegraph Unit (LTU11)
 - Touch Screen Panel (8" TCP)
 - Touch Screen Panel (13.3" TCP)
 - Touch Screen Panel with integrated computer (8" AIPC)
 - Touch Screen Panel with integrated copmputer (13.3" AIPC, 13.3" AIPC-XXL)
 - Kongsberg Compact Computer (AIPC KCC)
 - Speed Set Dial Unit
 - 4.3" touch display (K-Thrust lever Display)
 - Rudder/Thruster control (K-Thrust mini wheel)
 - Control lever for azimuth thruster (K-Thrust azimuth lever)
 - Control lever for dual propulsion (K-Thrust dual lever)
 - Control lever for single propulsion (K-Thrust single lever)
- 2) Control Function ;
 - Remote Control System
 - Engine Telegraph System
 - Engine Safety System
 - Digital Governor System
 - Thruster Control System
 - Steering Control System

2. Approved Drawings and Documents

- 1) Drawings
 - 405842, 405844, 405846, 412364, 412460A, 412948A, 416531, 416532, 416533, 416534, 416535, 419579, 412364, 417835, 413029, 413032, 419577A, 419578A, 419579A, 419580A
 - 468844A, 468845A, 469179B, 473083A, 110-0000939A, 442395A, 477386A, 443346A, 355197C1, 372127A, 402348A1, 405149F
- 2) Software version
 - C20 : No. 311245 (Software maintenance report no. 311246G)

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- C600 : No. 359018.12 (Software maintenance report no. 386083F)

3. Test Reports, etc.

1) Test Reports No.

- DANAK-194157, 194874, 197309, 197316, 197322, 197329, 197536, 197538, 197561, 197941, 198234, 198468, 1910472, 1910496, 1910740, 1910922, 1911137, 1913963, AA-00378-A, 19/11809, 19/14404, 19/14407
- DNV 2010-3604, 2011-3419, 2012-3095, 19/15712, 19/15815, 19/15862, 19/16085
- Nemko E16203.00
- DANAK-1911471, 1912063, 1915434
- 5F007245 issued by SP Technical Research Institute, dated 2015-07-31
- E21088.03 issued by NEMKO, dated 2021-10-28
- E19116.02 issued by NEMKO, dated 2019-12-18
- E21017.03 issued by NEMKO, dated 2021-11-23
- E21239.03 issued by NEMKO, dated 2022-07-06

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.
- 3) Hardware components which are common for Cert. No. CPH27937-AC003(K-Chief, K-Chief 700 and K- Safe systems) are listed in this certificate.

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 >