中国船级社
CHINA CLASSIFICATION SOCIETY

证书编号/Certificate No.
BG24PTB00021

型式认可证书
CERTIFICATE OF TYPE APPROVAL

兹证明本证书所述制造厂具备按照下列标准的要求生产本证书所列产品的能力和条件。
This is to certify that the manufacturer stated in the certificate meets the requirements of the standards listed below and is available with the ability and conditions to produce the products described in the certificate.

制造厂/Manufacturer

Kongsberg Maritime AS(Horten)

地址/Address

Bekkajordet 8A, 3189 Horten, Norway

产品名称/Product

推进装置遥控系统
Propulsion Machinery Control System

附加标志/Notations

无/Nil.

认可标准/Approval Standard

1. 中国船级社《钢质海船入级规范》第4篇第2, 3章
Chapter 2 and 3, Part Four of China Classification Society Rules for Classification of Sea-going Steel Ships
2. 中国船级社《钢质海船入级规范》第7篇第2章
Chapter 2, Part Seven of China Classification Society Rules for Classification of Sea-going Steel Ships
3. 中国船级社《船舶网络安全指南》2024
China Classification Society Guidlines for Ship Cyber Security,2024
4. IACS UR E27(Rev.1)

用于/Intended for

船舶/Ships

证书有效期至/This Certificate is valid until **2026年01月07日/ Jan. 07,2026**

发证机构 中国船级社烟台根办事处
Issued by CCS Yantai Office

签发日期 2024年10月28日
Date Oct. 28,2024

产品明细/Product Description

推进装置遥控系统/Propulsion Machinery Control System(M0001)

名称/Name	属性（值）/Value	单位/Unit
型号/Type	AutoChief 600 and K-Steering 600	
系统组成/System Component	Refer to additional pages	

批准的图纸/Approved Drawings

图纸批准号/ Drawings Approval No.: NP16A04143,NP24PPP03919

产品认可试验报告/ Approval Test Report

试验报告编号/ Test Report No.： REP043653
试验报告日期/ Test Report Date： 2024-08-20
试验单位/ Laboratory: Nemko
试验单位地址/ Test Address: Norway

试验报告编号/ Test Report No.： E21088.03
试验报告日期/ Test Report Date： 2021-10-28
试验单位/ Laboratory: Nemko
试验单位地址/ Test Address: Norway

试验报告编号/ Test Report No.： REP019643
试验报告日期/ Test Report Date： 2024-01-17
试验单位/ Laboratory: Nemko
试验单位地址/ Test Address: Norway

试验报告编号/ Test Report No.： 110-0066078
试验报告日期/ Test Report Date： 2024-05-22
试验单位/ Laboratory: Kongsberg Maritime AS
试验单位地址/ Test Address: Norway

试验报告编号/ Test Report No.： DANAK-1911809
试验报告日期/ Test Report Date： 2012-01-30
试验单位/ Laboratory: DANAK
试验单位地址/ Test Address: Denmark

试验报告编号/ Test Report No.： DANAK-197836
试验报告日期/ Test Report Date： 2005-02-04
试验单位/ Laboratory: DANAK
试验单位地址/ Test Address: Denmark

试验报告编号/ Test Report No.： DANAK-197536
试验报告日期/ Test Report Date： 2204-07-06
试验单位/ Laboratory: DANAK
试验单位地址/ Test Address: Denmark

试验报告编号/ Test Report No.： Nemko-E21017.03
试验报告日期/ Test Report Date： 2021-11-13
试验单位/ Laboratory: Nemko
试验单位地址/ Test Address: Norway

试验报告编号/ Test Report No.： DANAK-1913963
试验报告日期/ Test Report Date： 2014-04-03
试验单位/ Laboratory: DANAK
试验单位地址/ Test Address: Denmark

试验报告编号/ Test Report No.： Nemko-E16203.00
试验报告日期/ Test Report Date： 2017-03-29
试验单位/ Laboratory: Nemko
试验单位地址/ Test Address: Norway

试验报告编号/ Test Report No.： Nemko-E16268
试验报告日期/ Test Report Date： 2017-05-05

试验单位/ Laboratory: Nemko
试验单位地址/ Test Address: Norway

试验报告编号/ Test Report No.： DANAK-194157
试验报告日期/ Test Report Date： 1998-11-03
试验单位/ Laboratory: DANAK
试验单位地址/ Test Address: Denmark

试验报告编号/ Test Report No.： DANAK-1911471
试验报告日期/ Test Report Date： 2011-07-15
试验单位/ Laboratory: DANAK
试验单位地址/ Test Address: Denmark

试验报告编号/ Test Report No.： DANAK-1910922
试验报告日期/ Test Report Date： 2010-06-11
试验单位/ Laboratory: DANAK
试验单位地址/ Test Address: Denmark

试验报告编号/ Test Report No.： DANAK-1912063
试验报告日期/ Test Report Date： 2012-05-02
试验单位/ Laboratory: DANAK
试验单位地址/ Test Address: Denmark

试验报告编号/ Test Report No.： DANAK-1915862
试验报告日期/ Test Report Date： 2015-12-03
试验单位/ Laboratory: DANAK
试验单位地址/ Test Address: Denmark

试验报告编号/ Test Report No.： Nemko-E21088.03
试验报告日期/ Test Report Date： 2021-10-08
试验单位/ Laboratory: Nemko
试验单位地址/ Test Address: Norway

试验报告编号/ Test Report No.： Nemko-E21239.03
试验报告日期/ Test Report Date： 2022-07-06
试验单位/ Laboratory: Nemko
试验单位地址/ Test Address: Norway

试验报告编号/ Test Report No.： DANAK-197724
试验报告日期/ Test Report Date： 2004-12-07
试验单位/ Laboratory: DANAK
试验单位地址/ Test Address: Denmark

试验报告编号/ Test Report No.： DANAK-1910740
试验报告日期/ Test Report Date： 2009-12-18
试验单位/ Laboratory: DANAK
试验单位地址/ Test Address: Denmark

试验报告编号/ Test Report No.： DANAK-197329
试验报告日期/ Test Report Date： 2004-01-30
试验单位/ Laboratory: DANAK
试验单位地址/ Test Address: Denmark

试验报告编号/ Test Report No.： DANAK-1916085
试验报告日期/ Test Report Date： 2016-02-15
试验单位/ Laboratory: DANAK
试验单位地址/ Test Address: Denmark

试验报告编号/ Test Report No.： DANAK-197561
试验报告日期/ Test Report Date： 2004-08-09
试验单位/ Laboratory: DANAK
试验单位地址/ Test Address: Denmark

认可后的产品检验方式/ Method of Product Inspection after Approval

按规范认可后应进行产品检验的产品/The product should be inspected in term of the rules：
认可后的产品检验应由本社验船师根据本社规范规定按批准的产品检验计划进行检验，经检验合格后由本社颁发船

用产品证书。
After approval, product inspection should be carried out by the Surveyor of the Society in accordance with the approved product inspection scheme, and the Marine Product Certificate will be issued by the Society upon satisfactory inspection.

认可保持条件/ Maintenance Requirements of Approval

1.型式认可后，如果产品及其重要零部件的设计、所用材料或制造方法有所改变，且影响到产品的主要特性、特征；或产品的性能指标有所更改，且超过认可的范围，则有关图纸和文件应经检验机构审批。并在检验机构认为必要时，经本社检验人员见证有关试验和进行检查，其结果应能证实仍符合认可条件。
After type approval, if there are changes to the design, materials used or manufacturing method of the product and important components and such changes affect major characteristics and properties of the product, or property indexes of the product are changed and exceed the scope of approval, related drawings and documents are to be examined and approved by the concerned survey office. Where deemed necessary by the survey office, the surveyor to the Society will go to witness relevant tests and conduct inspection and the results should be able to demonstrate compliance with the approval conditions.
2.工厂的质量管理体系应保持有效运行，并且与认可时一致。如果质量管理体系发生改变，应经原体系认证机构审核并报本社批准。
The quality management system of the factory shall be ensure effective operation, and shall be the same as the situation of approval. If there are any changes to the quality management system, auditing of the original certification organization for quality management system and the society's approval shall be obtained.
3.认可证书有效期内，如果出现可能导致本社取消认可的情况，工厂应及时采取有效的纠正措施。
Within the validity of the approval certificate, if cases occur that may cause the Society to withdraw the approval, the manufacturer should take corrective actions in a prompt and effective manner.
4.在认可证书有效期内，本社检验人员可在未经事先通知的情况下对工厂的产品制造过程进行审核，以验证产品的生产是否符合业经本社批准的图纸和文件。工厂应予以配合。
Within the validity of the approval certificate, the surveyor to the Society may pay unannounced audit to the manufacturing process of the product in order to confirm whether it is in compliance with the drawings and documents approved by the Society. The factory should provide an active cooperation and necessary for the surveyor.
5.如果属于获得型式认可B 模式证书，且无需颁发船用产品证书/等效证明文件的情况，证书获得者应接受本社每年一次的定期审核，定期审核日为认可证书期满之日对应的每一周年日，检查工作应在周年日的前后三个月内进行。
If belong to the situation of the product has type approval mode B certificate, and marine product certificate/equivalent document is not necessary, those who have obtained the certificate should be subject to periodical audit every year. The date of periodical audit shall be each anniversary date which corresponds to the date of expiry of the relevant certificate and the periodical audit shall be done within a time span of three months before and after the annual surveillance date.

备注/Remarks

1. 本证书由原型式认可证书（No. BG24PTB00013_04）变更并替代原证书。
This Certificate is modified from and supersedes the previous Type Approval Certificate No. BG24PTB00013_04.

2. 本社已审核了产品厂无石棉声明，但本社的审核不免除产品厂按照合同关系向订货方保证产品无石棉的责任。
The declaration of asbestos-free submitted by manufacturer has been reviewed by the Society. However, liability of the manufacturer to guarantee the products are asbestos-free to purchaser under contract will not be exempted.

中国船级社卑尔根办事处
CCS Bergen Office

注：本证书含有附页，共3页
Note: The certificate is attached with additional 3 page(s)

1.Product Description

1.1 The function of the system

①AutoChief 600 system is a combined remote control system, engine telegraph system and engine safety system for main engines on ships. In addition to engine RPM control, the AutoChief 600 system provides propeller pitch control for vessels with controllable pitch propeller.

AutoChief 600 performs the following functions:

-Main Engine remote control and monitoring

-Safety protection of the main engine

-Speed governing of the main engine

-Engine telegraph

②K-Steering 600 is the steering control system. Measuring steering gear position and controlling steering gear based on feedback control. The system can run in follow-up and non follow-up model. The system performs the following functions:

-K-Steering interfaces navigation system and optional DP/IJS etc

-K-Steering controls steering gear actuators and measures the steering gear position

1.2. Software Version

For AutoChief 600 and K-Steering 600 basic software version are 12.16 which is included in the common C600 software platform release 359018.12 as described in the revision history document 386083/G.

1.3. Hardware components which are specific for AutoChief 600 and K-Steering 600 systems are listed in this certificate. The approval for third party equipment are not included in this certificate,the delivery of those components should meet the requirements of CCS rules.

Components		Part No.
Components for navigation bridge	Lever Telegraph LTU11	364330
	Lever Telegraph LTU11ME	389505
	ABE11-3-buttons	355146
	KBE15	401892
Touch Control Panel	CP12 w/KBE15 + ABE11	402586,401892
Pushbutton Telegraph	PBT Flat Version Black	8100318
Bridge Wing Control Unit	BWU21 Left version	486233
	BWU21 Right version	486200
Controller unit	Segment Controller unit-SCU	329785
Media Converter	RMC-ST	321520
Distributed Processing Units (DPU)	Remote Analog input Module-RAi-16xe	329714
	Remote Digital output Module-RDo-16xe	329699
	Remote Analog TC input Module RAi-10tc	8100161
	Remote Digital input Module-RDi-32xe	333523
	Remote Analog output Module-RAo-8xe	333824
	Remote Digital I/O Module - RIO-C2xe	333346
Digital Governor Unit	DGU	8100272
RPM Units	RPME	8100289,8100278
Operator Control Panels	PB6	110-0060620
	COP05 ALC Stand Alone	391890
	Panel Input Mk3 COP 05	110-0049940

Components		Part No.
Main Engine Interface Unit	MEI	8100276
Engine Safety Unit	ESU	8100275
	ESU12	366666
Electric Shaft System	ESS	8100282
Multi Purpose Panel	MPP Flush-Mount Black	8100290
Multi Purpose Display	MPD Flush	8100292
	CPP Backup Panel - PB4	400992
LAN to CAN Module	L2C	404654,406381
Common Thruster Lever	Lever K-Thrust Dual	416532
	Lever K-Thrust single	416533
	Lever K-Thrust Display	416534
	Lever K-Thrust Dual w/Display	405844
	Lever K-Thrust single w/Display	405842
	Mini Wheel K-Thrust w/Display	412364
	Mini Wheel K-Thrust	417835
Electrical Fuel Actuator	ELACT 3812	468750
	DSU 38	468770

Components（third party equipment）	
Network devices	Cisco C1000-24T-4X-L
	Cisco C1000-24FP-4G-L
	Cisco C1000-24T-4G-L
	Cisco C1000-24P-4G-L
	Router Cisco C1121X-8P
	Moxa IKS-6728A
	Moxa EDS-408A-MM-SC
	Moxa EDS-408A-3M-SC
	Fortinet FGR-60F
	Router Moxa EDR-810-2GSFP
Display	Display 10" 16:10 XT MK1
	Display 15" FHD XT MK1
	Display 22" FHD X MK1
	Display 22" FHD XT MK1
	Display MD24 16:9 MK3
	Display 24" 16:9 Ex ET677
	Display 24" FHD XE MK1
	Display 24" FHD XTE MK1
	Display 24" 16:9 Touch MD24
	Display 27" 16:9 FHD E27-G5
	Display 27" Full HD ECDIS KM05 MK4
	Display 27" FHD XE MK2
	Display 27" FHD XTE MK2
	Display 32" UHD XE MK1
	Display 32" UHD XTE MK1
	Display 55" UHD ECDIS GT MK1
	Display 55" UHD D-Line

Components（third party equipment）	
Remote Operator Station (ROS) - Computer	MC340 i3 GPU
	MC340 i7 GPU
	MC360 i3 LAN
	MC360 i5 GPU
	MC360 i7 LAN
	MC360 i7 LAN Extra
Touch Control Panel	Panel PC 10" 16:10 MPS
UPS	Standby power, 230V/24V
Hub and switch	Switch FM LM 8TX RJ45
	Switch FM LM 8TX RJ45 Master
	Firewall FL MGUARD GT/GT
	Switch Moxa EDS-308-MMC-SC,6xRJ45,2xSC fi

2. For each designated vessel, the drawing of AutoChief 600 and K-Steering 600 should be submitted for approval to the CCS Plan Approval Center.

3. The hardware was tested and found in compliance with the requirements of IACS E10:2021(rev 8).

4. The cyber security levels of AutoChief 600 and K-Steering 600 systems are SL0 as per CCS Guidelines for Ship Cyber Security.

5. Manufacturing places include as below
(1) Kongsberg Maritime AS, Bekkajordet 8A, 3189 Horten, Norway
(2) Kongsberg Maritime Korea Ltd, 9-7, Sandan 3-ro, Jeonggwan-eup, Gijang-gun, Busan, 46027, Korea
(3) Kongsberg Maritime AS (Kongsberg) Kirkegardsveien 45, NO-3601 Kongsberg, Norway
(4) Kongsberg Maritime China Ltd., No. 136 North FuTe Road, China (Shanghai), Pilot Free Trade Zone, 200131 Shanghai, China
Blank bellowing.