



中国船级社
CHINA CLASSIFICATION SOCIETY

证书编号/Certificate No.
BG23PTB00013_04

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(Trondheim)

地址/Address

Skonnertvegen 1, N-7053 Ranheim, Norway

产品名称/Product

压力、温度、液位测量报警系统
Pressure, Temperature, Level Measuring Alarm System

认可标准/Approval Standard

- 中国船级社《钢质海船入级规范》（2023）及其变更通告第3篇第5, 15章
Chapter 5 & 15, Part Three of CCS Rules for Classification of Sea-going Steel Ships 2023 and its' Change Notices
- 中国船级社《钢质海船入级规范》（2023）及其变更通告第4篇第1, 2, 3章
Chapter 1, 2 & 3, Part Four of CCS Rules for Classification of Sea-going Steel Ships 2023 and its' Change Notices
- 中国船级社《钢质海船入级规范》（2023）及其变更通告第7篇第2章
Chapter 2, Part Seven of CCS Rules for Classification of Sea-going Steel Ships 2023 and its' Change Notices

用于/Intended for

船舶/Ships



证书有效期至/This Certificate is valid until 2028年11月13日/Nov. 13,2028

发证机构/Issued by 中国船级社卑尔根办事处
CCS Bergen Office

签发日期/Date 2024年04月02日
Apr. 02,2024

本证书根据中国船级社规范和相关规定签发。所有证书页为一个整体，必须同时使用。纸质证书每页均须由本社盖章方为有效，电子证书含数字签名方为有效，本证书复印件无效。任何单位和个人均不应摘录或节选本证书的部分内容。有关方对所持证书的真实性有疑问时，可以向本社检验机构咨询。This Certificate is issued pursuant to the Rules of the Society and related regulation. All pages of the certificate are taken as a whole and are used simultaneously. No paper certificate page is valid without bearing the stamp of the Society, no electronic certificates is valid without the digital signature, and no copied form of the certificate is regarded as valid. Any part of the certificate is not to be extracted or abridged by any unit or individual in any form. Related parties who are doubted about the authenticity of the certificate may inquire of the Society or its offices.



Form No: T01.

联系方式/Contact Us, 见本社官方网站/See official web site of the Society (<http://www.ccs.org.cn>)

UTN:P024-69269376

产品明细/Product Description**压力、温度、液位测量报警系统/Pressure, Temperature, Level Measuring Alarm System (M0001)**

名称/Name	属性(值)/Value	单位/Unit
型号/Type	K-Gauge CLS 600	
系统组成/System Component	Refer to "Additional Page" for details	

压力、温度、液位测量报警系统/Pressure, Temperature, Level Measuring Alarm System (M0002)

名称/Name	属性(值)/Value	单位/Unit
型号/Type	K-Gauge HLA 600	
系统组成/System Component	Refer to "Additional Page" for details	

压力、温度、液位测量报警系统/Pressure, Temperature, Level Measuring Alarm System (M0003)

名称/Name	属性(值)/Value	单位/Unit
型号/Type	K-Gauge CLS 700	
系统组成/System Component	Refer to "Additional Page" for details	

压力、温度、液位测量报警系统/Pressure, Temperature, Level Measuring Alarm System (M0004)

名称/Name	属性(值)/Value	单位/Unit
型号/Type	K-Gauge HLA 700	
系统组成/System Component	Refer to "Additional Page" for details	

压力、温度、液位测量报警系统/Pressure, Temperature, Level Measuring Alarm System (M0005)

名称/Name	属性(值)/Value	单位/Unit
型号/Type	K-Gauge RSS 600	
系统组成/System Component	Refer to "Additional Page" for details	

压力、温度、液位测量报警系统/Pressure, Temperature, Level Measuring Alarm System (M0006)

名称/Name	属性(值)/Value	单位/Unit
型号/Type	K-Gauge RSS 700	
系统组成/System Component	Refer to "Additional Page" for details	

批准的图纸/Approved Drawings

图纸批准号/ Drawings Approval No. : NP17A01510, NP20PPP04365, NP21PPP01383

产品认可试验报告/ Approval Test Report

试验报告编号/ Test Report No. : E15165.00
 试验报告日期/ Test Report Date : 2015-09-18
 试验单位/ Laboratory: Nemko
 试验单位地址/ Test Address: Oslo, Norway

试验报告编号/ Test Report No. : DANAK-1911523 Revision 1
 试验报告日期/ Test Report Date : 2012-10-26
 试验单位/ Laboratory: DELTA
 试验单位地址/ Test Address: Denmark

试验报告编号/ Test Report No. : E18081.00
 试验报告日期/ Test Report Date : 2018-04-23
 试验单位/ Laboratory: Nemko
 试验单位地址/ Test Address: Oslo, Norway

试验报告编号/ Test Report No. : 209536
 试验报告日期/ Test Report Date : 2012-08-21
 试验单位/ Laboratory: Nemko AS
 试验单位地址/ Test Address: Oslo, Norway

试验报告编号/ Test Report No. : E10017.00
试验报告日期/ Test Report Date : 2010-01-19
试验单位/ Laboratory: Nemko AS
试验单位地址/ Test Address: Oslo, Norway

试验报告编号/ Test Report No. : E15308.01
试验报告日期/ Test Report Date : 2016-03-03
试验单位/ Laboratory: Nemko AS
试验单位地址/ Test Address: Oslo, Norway

试验报告编号/ Test Report No. : i047852
试验报告日期/ Test Report Date : 2020-12-17
试验单位/ Laboratory: Kongsberg Maritime AS(Trondheim)
试验单位地址/ Test Address: Skonnertvegen 1, N-7053 Ranheim, Norway

试验报告编号/ Test Report No. : E09680.00
试验报告日期/ Test Report Date : 2009-06-24
试验单位/ Laboratory: Nemko AS
试验单位地址/ Test Address: Oslo, Norway

试验报告编号/ Test Report No. : E17118.00
试验报告日期/ Test Report Date : 2017-09-22
试验单位/ Laboratory: Nemko AS
试验单位地址/ Test Address: Oslo, Norway

试验报告编号/ Test Report No. : E13152.02
试验报告日期/ Test Report Date : 2013-09-30
试验单位/ Laboratory: Nemko AS
试验单位地址/ Test Address: Oslo, Norway

试验报告编号/ Test Report No. : DANAK-198696
试验报告日期/ Test Report Date : 2007-03-15
试验单位/ Laboratory: DELTA
试验单位地址/ Test Address: Denmark

试验报告编号/ Test Report No. : E21088.00
试验报告日期/ Test Report Date : 2021-07-05
试验单位/ Laboratory: Nemko
试验单位地址/ Test Address: Norway

试验报告编号/ Test Report No. : E16236.00
试验报告日期/ Test Report Date : 2016-11-14
试验单位/ Laboratory: Nemko AS
试验单位地址/ Test Address: Oslo, Norway

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. For each designed vessel the drawing of system should be submitted for approval to the Society Plan Approval Center.

2. K-Gauge CLS600/CLS700/HLA600/HLA700/RSS 600/RSS700 can be produced by following company:

Chinese Name: 康士伯企业管理（上海）有限公司

Chinese Address: 中国（上海）自由贸易试验区富特北路136 号，邮编：200131

English Name: Kongsberg Maritime China Ltd.

English Address: No. 136 North Fute Road, China (Shanghai) Pilot Free Trade Zone, 200131, China

3. 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

4. 本证书由原型式认可证书（No. BG21PTB00003和 BG21PTB00011）换新并替代原证书。

This certificate is renewed from and supersedes the previous Type Approval Certificate No. No. BG21PTB00003 and BG21PTB00011.

中国船级社卑尔根办事处

CCS Bergen Office

注：本证书含有附页，共2页

Note: The certificate is attached with additional 2 page(s)

1.The System Component

Name of type	Description	List of components
K-Gauge CLS 600	Tank monitoring system	1) Main CLS Cabinet 2) Radar Tank Gauge (RTG) 3) Cargo Temperature Unit (CTU) 4) Signal Processing Unit (SPU) 5) Cargo Temperature Sensors 6) Tank Pressure Transmitters 7) Operator Stations and Pannels 8) Zener Barriers 9) Distributed Processing Units (DPU) 10) Segment Controller Units (SCU)
K-Gauge CLS 700	Tank monitoring system	1) Main CLS Cabinet 2) Radar Tank Gauge (RTG) 3) Cargo Temperature Unit (CTU) 4) Signal Processing Unit (SPU) 5) Cargo Temperature Sensors 6) Tank Pressure Sensors 7) Operator Stations and Pannels 8) Zener Barriers 9) Remote Multipurpose I/O (RMP420) 10) Remote Digital I/O and Relay (RDIOR420) 11) Remote Controller Unit (RCU502i, RCU602)
K-Gauge RSS 600	Tank monitoring system	1) K-Gauge RSS Cabinet 2) Remote Digital I/O (RAi-16xe) 3) Segment Controller Unit (SCU) 4) GT406 Tank Pressure Transmitters
K-Gauge RSS700	Tank monitoring system	1) K-Gauge RSS Cabinet 2) Remote Multipurpose I/O (RMP420) 3) Remote Controller Unit (RCU502i, RCU602) 4) Operator Stations 5) Operator Panels
K-Gauge HLA 600	High-level alarm and overfill alarm system	1) Main HLA Cabinet 2) Alarm sensors 3) Zener barriers 4) Segment Controller Unit (SCU) 5) Operator Panels 6) Alarm devices 7) Distributed Processing Units (DPU)
K-Gauge HLA 700	High-level alarm and overfill alarm system	1) Main HLA Cabinet 2) Alarm sensors 3) Zener barriers 4) Remote Controller Unit (RCU502i, RCU602) 5) Operator Panels 6) Alarm devices 7) Remote Multipurpose I/O (RMP420) 8) Remote Digital I/O and Relay (RDIOR420)

2.Software information

Name of type	Version
K-Gauge RSS 600/CLS 600/HLA 600	359018.12
K-Gauge RSS 700/CLS 700/HLA 700	AIM basis software release 8.5, 8.6, 8.7, 8.8 and 8.10.

3. Ex-Proof information

Part Name	Ex-Proof Grade	Ex-Certificate No.	Issued by	Standards for Ex-Proof
Zener Barrier Unit DZ-120	II (1) G [Ex ia Ga] IIC Ta:-20 °C to +70 °C	Presafe 16ATEX7965	DNV GL Nemko Presafe AS	2014/34/EU, EN 60079-0:2012/A11:2013 EN 60079-11:2012
Transmitter Barrier Unit DZ-110/U	II (1) G [Ex ia Ga] IIC Ta:-20 °C to +55 °C	Presafe 14ATEX4368		
Signal Processing Unit (SPU) GLK-300	II (1) G [Ex ia Ga] IIB/IIC Ta: -15 °C to +70 °C	Presafe 14ATEX5412X		
Electronic level switch GL-7B/*	II 1 G Ex ia IIC T5(Ta:-45 °C to +70 °C)/T4(Ta:-45 °C to +85 °C Ga	TUV 13ATEX124272 X	TUV NORD	2014/34/EU, EN 60079-0:2012, EN 60079-11:2012, EN 60079-26:2015
Cargo Temperature Unit (CTU) GC-300, GC-306	II 1 G Ex ia IIC T4 Ga Ta = -45 °C to +85 °C	Sira 14ATEX2054X	Sira Certification Service	2014/34/EU, EN 60079-0:2012, EN 60079-11:2012, EN 60079-26:2006
Pressure Transmitter GT402, GT403, GT404, GT406	II 1 G Ex ia IIC T5 Ga Ta = -45 °C to +85 °C	Nemko 02ATEX119X	Nemko AS	2014/34/EU, EN 60079-0:2012+A11:2013 EN 60079-11:2012

Note: The Ex-Proof parameters of the approved products originate from Ex-Certificate received from the manufacturer, not approved by CCS. This Type Approval Certification will be invalid if the approved products do not hold a valid Ex-Certificate.