



中国船级社
CHINA CLASSIFICATION SOCIETY

证书编号/Certificate No.
BG23PTB00013_03

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

签发日期 2024年03月14日
Date Mar. 14,2024

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:P024-77369214

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	GL-300	
系统组成/System Component	Refer to "Remarks" for details	

批准的图纸/Approved Drawings

图纸批准号/ Drawings Approval No. : GB11A00012

产品认可试验报告/ Approval Test Report

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. : 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. : P-APPROV-GL-300/XE Rev. D
 试验报告日期/ Test Report Date : 2011-10-14
 试验单位/ Laboratory: Kongsberg Maritime AS
 试验单位地址/ Test Address: Trondheim, Norway

试验报告编号/ Test Report No. : E13127.00
 试验报告日期/ Test Report Date : 2013-10-02
 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. : 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. : E15308.02
 试验报告日期/ Test Report Date : 2016-07-25
 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. : 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

试验报告编号/ Test Report No. : E16195.02
 试验报告日期/ Test Report Date : 2017-03-28
 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. : Sira 14ATEX2054X
 试验报告日期/ Test Report Date : 2020-10-23
 试验单位/ Laboratory: Sira Certification Service
 试验单位地址/ Test Address: U.K.

试验报告编号/ Test Report No. : Sira 14ATEX2056X
 试验报告日期/ Test Report Date : 2020-10-23

试验单位/ Laboratory: Sira Certification Service
试验单位地址/ Test Address: U.K.

试验报告编号/ Test Report No.: Presafe 14ATEX5412X
试验报告日期/ Test Report Date: 2020-11-18
试验单位/ Laboratory: DNV GL Nemko Presafe AS
试验单位地址/ Test Address: Oslo, Norway

试验报告编号/ Test Report No.: E21214.00
试验报告日期/ Test Report Date: 2021-11-01
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. GL-300 Tank Monitoring consists of:

1) GLA-300/GLA-310 Radar Tank Gauge (RTG)
-Radar Tanker Gauge
Meas. range: 0~50m

Material: AISI 316L and PTFE

-Tank Pressure Transmitter

Meas. range: 0.8~1.4bar (optional: 0.8~1.8bar)

Material: AISI 316 and Titanium

Degree of protection: IP66/67

Ex-Proof Grade: II 1 G Ex ia IIC T4 Ga Ta = -45°C to +85°C Ta = -45°C to +80°C (when fitted with the GLH-320) (Ex-Certificate No.: Sira 14ATEX 2056X, Issuing Body: Sira Certification Service, Standards for Ex-Proof : 2014/34/EU, EN 60079-0:2012, EN 60079-11:2012)

GLH-310 Radar Tank Gauge Electronic Unit

Meas. range: 0~50m

Material: ABS and Polyurethane

Ex-Proof Grade: II 1 G Ex ia IIC T4 Ga Ta = -45°C to +85°C (Ex-Certificate No.: Sira 14ATEX 2056X, Issuing Body: Sira Certification Service, Standards for Ex-Proof : 2014/34/EU, EN 60079-0:2012, EN 60079-11:2012)

GLH-320 Radar Tank Gauge Electronic Unit

Power supply: 10 VDC

Material: ABS and Polyurethane

Degree of protection: IP20

Ex-Proof Grade: II 1 G Ex ia IIC T4 Ga Ta = -45°C to +80°C (Ex-Certificate No.: Sira 14ATEX 2056X, Issuing Body: Sira Certification Service, Standards for Ex-Proof : 2014/34/EU, EN 60079-0:2012, EN 60079-11:2012)

2) GC-300/GC-306 Cargo Temperature Unit (CTU)

Output signal: HART

Meas. range: -200°C~250°C

Number of sensors: Max.3 MN1535 temperature sensors

Material: AISI 316

Degree of protection: IP66/67

Ex-Proof Grade: II 1 G Ex ia IIC T4 Ga Ta = -45°C to +85°C (Ex-Certificate No.: Sira 14ATEX 2054X, Issuing Body: Sira Certification Service, Standards for Ex-Proof : 2014/34/EU, EN 60079-0:2012, EN 60079-11:2012, EN 60079-26:2006)

3) GT406 Pressure Transmitter

Power supply: 24 VDC (12~32 VDC)

Meas. range: 0.5 ~ 50 bar

Material: AISI 316L

Degree of protection: IP20

Ex-Proof Grade: II 1 G Ex ia IIC T5 Ga Ta= -45°C to +85°C (Ex-Certificate No.: Presafe 20ATEX 08383X, Issuing Body: Nemko AS, Standards for Ex-Proof : 2014/34/EU, CENELEC EN 60079-0:2012+A11:2013, CENELEC EN 60079-11:2012)

4) GLK-300 Signal Processing Unit (SPU)

Power supply: 24 VDC (18~32 VDC)

Power consumption: 8 W typical

Communication: Dual Ethernet

Input/Output: 1 radar input, 1 HART input

Degree of protection: IP20

Ex-Proof Grade: II (1) G [Ex ia Ga] IIB/IIC Ta: -15°C to +70°C (Ex-Certificate No.: Presafe 14ATEX5412X, Issuing Body: DNV GL Nemko Presafe AS, Standards for Ex-Proof : 2014/34/EU, EN 60079-0:2012/A11:2013, EN 60079-11)

5)GLA-310/5 Radar Tank Gauge for Liquified GAS, 383758

Measuring rang:0 to 55 meter

RMS accuracy: 2mm

Signal Output:RS485(interface to GLK-300)

Ex-Proof Grade:II 1 G Ex ia IIC T4 Ga Ta=-45°C to+80°C (Ex-Certificate No.:Sira 14ATEX 2056X, Issuing Body: CSA GroupNetherlands B.V., Standards for Ex-Proof : 2014/34/EU ,EN IEC 60079-0:2018 , EN 60079-11:2012)

6)GLA-310/5-G Radar Tank Gauge for Liquified GAS, 394663

Measuring rang:0 to 20 meter

RMS accuracy:2mm

Signal Output:RS485(2 pair cable interface to GLK-300 SPU)

Frequency:X-band(10GHz)

Ex-Proof Grade:II 1 G Ex ia IIC T4 Ga Ta=-45°C to+80°C (Ex-Certificate No.:Sira 14ATEX 2056X, Issuing Body: CSA GroupNetherlands B.V., Standards for Ex-Proof : 2014/34/EU ,EN IEC 60079-0:2018 , EN 60079-11:2012)

7)GLA-310/5-NH3 Radar Tank Gauge for Liquified Ammonia (NH3), 411509
Measuring rang:24m(tank pressure <1.4bar),15m (1.4bar≤tank pressure <8.0bar) ,8m (8.0bar≤tank pressure <20bar)
RMS accuracy:3mm
Signal Output:RS485(2 pair cable interface to GLK-300 SPU)
Frequency:C-band(5GHz)
Ex-Proof Grade:II 1 G Ex ia IIC T4 Ga Ta=-45°C to+80°C (Ex-Certificate No.:Sira 14ATEX 2056X,
Issuing Body: CSA GroupNetherlands B.V., Standards for Ex-Proof : 2014/34/EU ,EN IEC 60079-0:2018 ,EN 60079-11:2012)

8)GLA-310/5-LH2 Radar Tank Gauge for Liquified Hydrogen, 435445
Measuring rang:0 to 50 meter
RMS accuracy:7.5mm
Signal Output:RS485(2 pair cable interface to GLK-300 SPU)
Frequency:X-band(10GHz)
Ex-Proof Grade:II 1 G Ex ia IIC T4 Ga Ta=-45°C to+80°C (Ex-Certificate No.:Sira 14ATEX 2056X,
Issuing Body: CSA GroupNetherlands B.V., Standards for Ex-Proof : 2014/34/EU ,EN IEC 60079-0:2018 ,EN 60079-11:2012)

9)GLA-310/5DUAL Radar Tank Gauge for Liquified GAS, 442205
Measuring rang:0 to 55 meter
RMS accuracy:2mm
Signal Output:2 x RS485 and power(intrinsically safe)
Frequency:X-band(10GHz)
Ex-Proof Grade:II 1 G Ex ia IIC T4 Ga Ta=-45°C to+80°C (Ex-Certificate No.:Sira 14ATEX 2056X,
Issuing Body: CSA GroupNetherlands B.V., Standards for Ex-Proof : 2014/34/EU ,EN IEC 60079-0:2018 ,EN 60079-11:2012)

10)K-Gauge GL-300 based multifunction system with dual radar, 394855

11)DZ-110/U Zener Barrier Unit,
Ex-Proof Grade:II(1)G [Ex ia Ga]II C (Ex-Certificate No.:Presafe 14 ATEX 4368, Issuing Body: DNV GL, Standards for Ex-Proof : 2014/34/EU ,EN IEC 60079-0:2018 ,EN 60079-11:2012)

12)DZ-120 Zener Barrier Unit
Ex-Proof Grade:II(1)G [Ex ia Ga]II C (Ex-Certificate No.:Presafe 16 ATEX 7965, Issuing Body: DNV GL, Standards for Ex-Proof : 2014/34/EU ,EN IEC 60079-0:2018 ,EN 60079-11:2012)

13) GLA-300 Tank Radar Gauge for asphalt tank(optional)

14) GLA-300/H Radar Tank Gauge for chemical tank(optional)

15) GLA-300/HS Radar Tank Gauge for slop tank(optional)

2. For each designed vessel, the drawing of cargo tank monitoring systems should be submitted for approval to the Society Plan Approval Center.

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

4. 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.

5. 本证书由原型式认可证书 (No. BG20PTB00001_03) 换新并替代原证书。
This certificate is renewed from and supersedes the previous Type Approval Certificate No. BG20PTB00001_03.

中国船级社卑尔根办事处
CCS Bergen Office