



中国船级社
CHINA CLASSIFICATION SOCIETY

证书编号/Certificate No.
HB24PTB00061

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

Endress+Hauser SICK GmbH+Co. KG

地址/Address

Bergener Ring 27, Ottendorf-Okrilla, 01458, Germany

产品名称/Product

船用废气测量系统
Maritime Exhaust Emission Measurement System

附加标志/Notations

无/Nil.

认可标准/Approval Standard

- 国际海事组织海安会决议MEPC. 177 (58)《船用柴油机氮氧化物排放控制技术规则修正案》
IMO Resolution MEPC.177(58) Amendments to the Technical Code on Control of Emission of Nitrogen Oxides from Marine Diesel Engines
- 国际海事组织环保会决议 MEPC. 251 (66)《经1978年议定书修订的1973年国际防止船舶造成污染公约的1997年议定书附则修正案》
IMO Resolution MEPC.251(66) Amendments to The Annex of the Protocol of 1997 to Amend the International Convention for the Prevention of Pollution from Ships, 1973, As Modified by the Protocol of 1978
- 国际海事组织环保会决议 MEPC. 340 (77)《2021年废气滤清系统指南》
IMO Resolution MEPC.340(77) 2021 Guidelines for Exhaust Gas Cleaning Systems
- 中国船级社《钢质海船入级规范》第3篇第1章 第4篇第1章 第7篇第2章
Part Three Chapter 1, Part Four Chapter 1, Part Seven Chapter 2 of China Classification Society Rules for Classification of Sea-going Steel Ships

用于/Intended for

船舶/Ships

产品明细/Product Description

船用监测报警系统/Marine Monitoring and Alarm System (M0001)

名称/Name	属性(值)/Value	单位/Unit
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证书有效期至/This Certificate is valid until 2029年07月11日/ Jul. 11,2029

发证机构 中国船级社汉堡分社
Issued by CCS Hamburg Branch

签发日期 2025年04月20日
Date Apr. 20,2025

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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. **For Rules with no version indication, their latest version (at the time of issuance of the certificate) applies to the this certificate.**



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:P025-39272885

型号/Type	MARSIC280	
电源/Power Source	AC230V, AC115V (50/60Hz)	
系统组成/System Component	see additional pages	
外壳防护等级/Degree of Protection of Enclosure	IP54 (IP23 -Gas sampling unit), Only valid for SFU GL	

批准的图纸/Approved Drawings

图纸批准号/ Drawings Approval No. : NP21PPP04108, NP25PPP00657

产品认可试验报告/ Approval Test Report

试验报告编号/ Test Report No. : see additional pages

试验报告日期/ Test Report Date :

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.

备注/Remarks

本证书由原型式认可证书 (No. HB24PTB00019) 变更并替代原证书。

This certificate is modified from and supersedes the previous Type Approval Certificate No. HB24PTB00019.

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.

Manufacturer / Address:

1. Endress+Hauser SICK GmbH+Co KG / Poppenbuetteler Bogen 9B, 22399 Hamburg. Germany.
2. Jiangsu SICK Sensor Co., Ltd / Fengxiang Industrial Zone, Fengxiang Road No. 31, Changzhou, 21300, China.

中国船级社汉堡分社

CCS Hamburg Branch

注：本证书含有附页，共3页

Note: The certificate is attached with additional 3 page(s)

Product Description of MARSIC280

1. Description of the system

MARSIC280 is a modular multi-component analyzer system for measuring exhaust gas concentrations of SO₂ and CO₂ from exhaust gas cleaning systems (EGCS) on vessels.

SO ₂ / CO ₂ measurement		
Analyser	SO ₂ DEFOR (UVRAS)	CO ₂ FINOR (NDIR)
Analyser manufacturer	SICK AG	SICK AG
Model reference	MARSIC280	MASIC280
Arrangement	Extractive	Extractive
Maximum measurement range	0-100 / 0-500 ppm	0 - 25 vol. %
Accuracy	≤ ± 2% of the reading over the whole measurement range except zero, or ± 0.3% of full scale whichever is larger	
Zero gas specification	Instrument air or nitrogen (N ₂)	
Span gas specification	more than 80% of full scale of the measuring range	
Details of: service, maintenance, calibration schedules	See 4. Limitation / Noted	See 4. Limitation / Noted

2. Components of the system

Components	Identification	Specification
SYSTEM MAR280	1111868	SYSTEM MAR280 MULTI. 115VAC
	1111867	SYSTEM MAR280 MULTI. 230VAC
	1111866	SYSTEM MAR280 SINGLE 115VAC
	1111865	SYSTEM MAR280 SINGLE 230VAC
Analyzer	1110559	DeSO _x (CO ₂ /SO ₂)
SCD 1 SMP	2112590	SCD 1 SMP 115VAC 50HZ/60Hz
	2112588	SCD 1 SMP 230VAC 50HZ/60Hz
GAS SAMPLING FILTER SFU- BF NI GL	1094239	GAS SAMPLING FILTER SFU-BF NI GL
	1078360	GAS SAMPLING FILTER GL 0.5M UNBEHEIZT
	1078361	GAS SAMPLING FILTER GL 0.8M UNBEHEIZT
	2121888	SFU100
	2137834	SFU150
Heated sample gas line	6031105	HEAT. HOSE. 230V ELH/AW 6/8 1H 5M N.LSP
	6031110	HEAT. HOSE. 230V ELH/AW 6/8 1H 10M N.LSP
	6031115	HEAT. HOSE. 230V ELH/AW 6/8 1H 15M N.LSP
	6031120	HEAT. HOSE. 230V ELH/AW 6/8 1H 20M N.LSP
	6031125	HEAT. HOSE. 230V ELH/AW 6/8 1H 25M N.LSP
	6031130	HEAT. HOSE. 230V ELH/AW 6/8 1H 30M N.LSP
	6031135	HEAT. HOSE. 230V ELH/AW 6/8 1H 35M N.LSP
	6035905	HEAT. HOSE. 115V ELH/AW 6/8 1H 5M N.LSP
	6035910	HEAT. HOSE. 115V ELH/AW 6/8 1H 10M N.LSP
	6035915	HEAT. HOSE. 115V ELH/AW 6/8 1H 15M N.LSP
	6035920	HEAT. HOSE. 115V ELH/AW 6/8 2H 20M N.LSP

	6035925	HEAT. HOSE. 115V ELH/AW 6/8 2H 25M N.LSP
	6035930	HEAT. HOSE. 115V ELH/AW 6/8 2H 30M N.LSP
	6035935	HEAT. HOSE. 115V ELH/AW 6/8 2H 35M N.LSP
Bundle of pipes	6058993	Up to 40 m
Flanges and seals for filter housing, complete with sealing washer and screws	2025100	Flange NW 50 ND 16
	2025101	Flange NW 65 ND 6
	2025102	Flange NW 65 ND 16
	2025103	Flange NW 80 ND 16
	2025104	Flange ANSI 4" 150 lbs
Sample tube	2083525	Unheated 0.5m
	2083527	Unheated 0.8m
	2142889	Unheated 0.8m (SFU100/150)
	2142888	Unheated 0.5m (SFU100/150)

Software identification number: 9220790, Software version: 4.0.XX

3. Approval test reports

N o.	Test Report No.	Test Report Date	Laboratory / Test Address
1	936/21211670/B	2010.03.26	TUEV Rheinland Immissionsschutz und Energiesysteme GmbH / Am Grauen Stein, 51105 Koeln, Germany
2	105-14	2014.08.28	Treo-Labor fuer Umweltsimulation GmbH / Tempoeckring 19, 21079 Hamburg, Germany
3	014-20	2020.11.02	
4	060-21	2021.02.26	
5	408-21	2021.11.03	
6	MAGDE717 2015.020.A Rev1.1	2015.03.19	DNV GL SE / Brooktorkai 18, 20457 Hamburg, Germany
7	W02014330553E	2020.08.20	Shanghai Insititute of Quality Inspection and Technical Research / No.900 Jiangyue Road, Shanghai, P.R.China
8	20087-1-R02	2020.09.17	TUEV NORD CERT GmbH / Harburger Schlossstr. 6-12, 21079 Hamburg, Germany
9	20087-2-R02	2020.09.17	
10	20087-3-R03	2020.09.17	
11	20087-7-R00	2020.08.03	
12	E303139_00	2021.02.22	SICK AG / Erwin-Sick-Str.1, 79183 Waldkirch, Germany
13	E406543	2024.07.30	SICK AG / Erwin-Sick-Str.1, 79183 Waldkirch, Germany

4. Limitation / Noted:

- 1) In order to completely fulfil the requirements of MEPC.340(77) for "continuous emission monitoring" additional equipment (e. g. data recording and processing device) will have to be installed.
- 2) The emission monitoring system shall be installed, calibrated and operated in compliance with the operation manual.
- 3) For SO₂ and CO₂ monitoring according MEPC.340(77) the calibration interval with

calibration of the "MARSIC280" with span gas needs to be done via the gas cooler. Calibration should be performed according to operation manual via sampling probe and gas cooler.

The calibration Interval is defined as follows:

- Zero point calibration will be done on weekly base with instrument air or nitrogen 5.0
 - End point calibration is recommended to be done within 3 months with calibration gas
- The calibration needs to be checked with calibration gas latest after measurement relevant parts of the "MARSIC280" have been replaced.
- 4) A system leakage test should be performed every 6 months.