



中国船级社  
CHINA CLASSIFICATION SOCIETY

证书编号/Certificate No.  
SW21PTB00001\_02

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

SAL Navigation AB

地址/Address

Västberga Allé 36 B, SE-126 30 Hägersten, Sweden

产品名称/Product

计程仪  
Speed Log  
航速和航程测量装置 (SDME)  
Speed and Distance Measuring Equipment (SDME)

附加标志/Notations

无/Nil.

认可标准/Approval Standard

- 国际海事组织大会决议A.694(17)《作为全球海上遇险和安全系统(遇险和安全系统)组成部分的船载无线电设备和电子助航设备的一般要求》  
IMO Resolution A.694(17) General Requirements for Shipborne Radio Equipment Forming Part of the Global Maritime Distress and Safety System (GMDSS) and for Electronic Navigational Aids
- 国际海事组织大会决议IMO A.824(19)《速度和距离指示装置的性能标准》  
IMO A.824(19) Performance Standards for Devices to Indicate Speed and Distance
- 国际海事组织海安会决议MSC.96(72)《通过航速和距离的测量和指示装置性能标准(A.824(19)决议)修正案》  
IMO Resolution MSC.96(72) Adoption of Amendments to Performance Standards for Devices to Measure and Indicate Speed and Distance (Resolution A.824(19))
- 国际海事组织海安会决议MSC.191(79)《船载航行显示器有关航行信息显示的性能标准》  
IMO Resolution MSC.191(79) Performance Standards for the Presentation of Navigation-Related Information on Shipborne Navigational Displays

证书有效期至/This Certificate is valid until 2025年05月03日/May. 03,2025

发证机构/Issued by 中国船级社 斯德哥尔摩办事处  
CCS Stockholm Office

签发日期/Date 2021年04月26日  
Apr. 26, 2021

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:P021-58140716

**用于/Intended for**

船舶与海上设施/Ships and Offshore Installations

**产品明细/Product Description**

航速和航程测量装置 (SDME) /Speed and Distance Measuring Equipment (SDME) (M0001)

名称/Name	属性(值)/Value	单位/Unit
型号/Type	SAL R100	
额定电压/Rated Voltage	110-115/220-230	VAC
频率/Frequency	50-60	Hz
距离精度/Range Accuracy	<1%	
速度范围/Range of Speed	+/- 50	Knots
速度精度/Speed Accuracy	<1% or 0.1knot, whichever is greater	
工作频率/Operating Frequency	3.8 - 4.2	MHz
外壳防护等级/Degree of Protection of Enclosure	IP44 (ELC), IP66 (SD4 front side, if mounted in SD4 BMB)	
系统组成/System Component	See additional page	

**批准的图纸/Approved Drawings**

图纸批准号/ Drawings Approval No. : GB17A00004

**产品认可试验报告/ Approval Test Report**

试验报告编号/ Test Report No. : See additional page

试验报告日期/ Test Report Date :

试验单位/ Laboratory: See additional page

试验单位地址/ Test Address: See additional page

**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.

2. 本证书由原型式认可证书 (No. GB17T00007\_01) 变更并换新。

This certificate is modified and renewed from the previous Type Approval Certificate No. GB17T00007\_01.

3. The Speed Log is also in compliance with following standard:

(1) IEC 61023:2007 Maritime Navigation and Radiocommunication Equipment and Systems - Marine Speed and Distance Measuring Equipment (SDME) - Performance Requirements, Methods of Testing and Required Test Results

(2) IEC 62288:2014 Maritime navigation and radiocommunication equipment and systems - Presentation of navigation-related information on shipborne navigational displays - General requirements, methods of testing and required test results

(3) IEC 60945:2002/COR1:2008 Maritime Navigation and Radiocommunication Equipment and Systems - General Requirements - Methods of Testing and Required Test Results

(4) IEC61162-1:2016 Maritime Navigation and Radiocommunication Equipment and Systems - Digital Interfaces - Part I Single Talker and Multiple Listeners

4. Application:

(1) The product is designed for measuring speed and distance through the water.

(2) The product is not capable of issuing alerts.

**中国船级社斯德哥尔摩办事处**

**CCS Stockholm Office**

注：本证书含有附页，共3页

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

## System Components

The system consisting of:

Component	SAL Description	SAL P/N	Software Version*
Main Electronic Unit	SAL R100 ELC	80.11.01	Axx
Transducer**	SAL R1 TRU 30M	705050	N/A
	SAL R1 TRU 40M	705051	
	SAL R1 TRU EASY TANK 10M WTC	5492300	
	SAL R1 TRU EASY TANK 40M	5492410	
	SAL R1 TRU EASY TANK 40M WTC	5492400	
Main Display	SAL SD4-3	80.12.03	Cxx

\*) Capital letters in the Software Version indicate Major revisions (A, B, C, etc.), whereas "xx" represent Minor revision numbers (01, 02, 03, etc.) with no impact on type approved functionality. ("N/A" means there is no software in the component.)

\*\*\*) In a speed log system, only one (1) of the transducers shall be used.

Optional part:

Component	SAL Description	SAL P/N	Software Version*
Log Processing Unit	SAL LPU2	80.11.03	Bxx
NMEA Buffer	1N4B	704160	N/A
Displays	SAL SD4-2	80.12.02	Cxx
	SAL SD4-4	80.12.04	Cxx
Other display	SIA-3-8	701692	N/A
Mounting Box	SD4 BMB	704080	N/A

\*) Capital letters in the Software Version indicate Major revisions (A, B, C, etc.), whereas "xx" represent Minor revision numbers (01, 02, 03, etc.) with no impact on type approved functionality. ("N/A" means there is no software in the component.)

### List of Approval Test Reports

No.	Test Report No.	Test Report Date	Laboratory	Test Address
1	Certificate No. 445	2005-07-04	BSH	Hamburg, Germany
2	1122354-2 Ed. 2	2012-04-27	Intertek	Kista, Sweden
3	1209547-1	2012-03-30	Intertek	Kista, Sweden
4	273 152 B	2012-01-17	Innventia	Kista, Sweden
5	1209547-4	2012-04-02	Intertek	Kista, Sweden
6	TP16064 Ver. A01	2016-04-01	Consilium	Nacka, Sweden
7	TP16065	2016-03-23	Jan Linders	Goteborg, Sweden
8	913128	2009-10-30	Intertek	Kista, Sweden
9	F917800-A	2009-12-14	SP Technical Research of Sweden	Boras, Sweden
10	4612/4070407/06	2006-11-28	BSH	Hamburg, Germany
11	4612/4071591/10-1	2010-03-17	BSH	Hamburg, Germany
12	4612/4061984/11	2011-09-30	BSH	Hamburg, Germany
13	TP02111A0	2002-04-24	Consilium	Nacka, Sweden
14	4612/4071840/11	2011-01-12	BSH	Hamburg, Germany
15	46162/0041158/09	2010-03-22	BSH	Hamburg, Germany
16	4612/4071591/10	2010-03-17	BSH	Hamburg, Germany
17	TP09093B	2009-10-28	Consilium	Nacka, Sweden
18	TP15047A01	2015-02-20	Consilium	Nacka, Sweden
19	502133	2005-03-08	Intertek	Kista, Sweden
20	P704081-01A	2007-12-19	SP Technical Research of Sweden	Boras, Sweden
21	MTkP704081-02	2007-11-07	SP Technical Research of Sweden	Boras, Sweden
22	Certificate No. 470	2006-04-10	BSH	Hamburg, Germany
23	9549A2	2010-03-26	Qwerty Elektronik AB	Bagarmossen, Sweden

\*BSH: Bundesamt für Seeschifffahrt und Hydrographie

\*\*Intertek: Intertek Semko AB

\*\*\*Innventia: Innventia AB

\*\*\*\* Jan Linders: Jan Linders EMClaboratorium

\*\*\*\*\* Consilium: Consilium Marine & Safety AB