



TYPE EXAMINATION CERTIFICATE (MODULE B)

Certificate No:
MERB00008UJ
Revision No:
0

This Certificate is issued by DNV UK Limited based on authorisation of the Maritime & Coast Guard Agency (MCA) as an UK Approved Body to undertake conformity assessments on marine equipment in accordance with the requirements of the Merchant Shipping (Marine Equipment) Regulations 2016 as amended.

This is to certify:

That the Speed and distance measuring equipment (SDME)

with type designation(s)
SAL R100

Issued to

SAL Navigation AB
Hägersten, Sweden

is found to comply with the requirements in the following Regulations/Standards:

Regulation **MSN 1874 Amendment 7**,

item No. UK/4.7. SOLAS 74 as amended, Regulations V/18, V/19 & X/3, IMO Res. A.694(17), IMO Res. A.824(19), IMO Res. MSC.36(63), IMO Res. MSC.97(73), IMO Res. MSC.191(79), IMO Res. MSC.302(87)

Further details of the equipment and conditions for certification are given overleaf.

This Certificate is valid until **2029-02-08**.

Issued at **London** on **2024-02-09**

DNV local unit:
Finland CMC



for **DNV UK Ltd.**

Approval Engineer:
Steinar Kristensen

Approved Body No.: **0097**

Christine Mydlak-Röder
MER Service Responsible



**Maritime &
Coastguard
Agency**

UK Approved Body Authorised
by the MCA

This certificate will not be valid if the manufacturer makes any changes or modifications to the approved type of equipment, which have not been notified to, and agreed with the approved body named on this certificate.

During the period of validity of this certificate the applicable regulations (international conventions and the relevant resolutions and circulars of the IMO) and testing standards may change, therefore the product conformity may need to be re-assessed by the Approved Body.

"The Mark of Conformity" may only be affixed to the above type approved equipment and a Manufacturer's Declaration of Conformity issued when the production-control phase module (D, E or F) of Schedule 2 of the Merchant Shipping (Marine Equipment) Regulations 2016, as amended is fully complied with and controlled by a written inspection agreement with an approved body. In case limitations of use apply, these should be indicated in the Annex.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.



Form code: MER 201.GBR

Revision: 2023-03

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Product description

SAL R100 is a Single Axis Speed Log for measurement of Speed- and Distance Through the Water, consisting of the following units:

Unit	Description	Type/part no.	SW ver.	Specifications/ Comments	Location
Main unit	SAL R100 ELC	80.11.01	Axx	Power: In:110-115VAC/ 220-230VAC, 50-60Hz, Out: 20VDC Interfaces: 1xNMEA In 10x NMEA Out 1x Analogue Out (0.1V/kn) 2x Relay Out (200 p/NM) 1x Relay Out (power failure) 1x RS-232 In/Out (service)	Protected
Transducer	SAL R1 TRU 30M or SAL R1 TRU 40M or SAL R1 TRU EASY TANK 10M WTC or SAL R1 TRU EASY TANK 40M or SAL R1 TRU EASY TANK 40M WTC	705050 705051 5492300 5492410 5492400	NA	Transducer alternatives	Submerged
Display Unit	SAL SD4-3	80.12.03	Cxx	Power, input: 10-32VDC Interfaces: 1x NMEA In 10x NMEA Out 3x Digital In (+5V) 1x Digital Out (+5V)	Exposed
Options					
Processing Unit	SAL LPU2	80.11.03	Bxx		
NMEA Buffer	1N4B	704160	NA	Power, input: 10-40 VDC Interfaces: 1xNMEA In 4x NMEA Out	Protected
Displays	SAL SD4-2 SAL SD4-4 SIA-3-8	80.12.02 80.12.04 701692	Cxx Cxx NA	Same specifications as SAL SD4-3.	Exposed
Mounting Box	SD4 BMB	704080	NA	Bulkhead mounting box for SD4 display	Exposed

Application/Limitation

- The SAL R100 is measuring and indicating the speed- and distance through the water as required by SOLAS Ch.V.19/2.3.4
- The SAL R100 shall be installed and operated in accordance with the SAL R100 Manual, doc. no 80.16.01, Rev A02 (or later version)
- The SAL R100 does not issue alerts, hence testing according to IEC 62923-1 and IEC 62923-2 is deemed as not being applicable for this product.

Type Examination documentation

DNV No	Document ID	Rev	Description
35	1209547-1	2012-03-30	Report: Intertek, Environmental test report for SAL R1a incl WTU-Assy (SAL Navigation doc no AA12027)
33	BSH/454.ESE/Consilium R1Ed/4	2022-01-20	Report: BSH, IEC 61162-1 test report for Digital Interface (SAL Navigation doc no AA22004B)
29	80.16.01	A02	Manual: SAL Navigation, Manual SAL R100 STW Speed Log
26	701695A4	A4	Manual: SAL Navigation, SIA-3-8 Technical Manual
23	BSH 4612/4071840/11	2011-01-12	Report: BSH, Assessment report according to IEC 61023 (2007), IEC 61162-1 (2010) and IEC 62288 (2008) for SAL R1a (SAL Navigation doc no AA20026)
22	BSH 4612/4071591/10-1	2010-03-17	Report: BSH, Assessment report according to IEC 61023 (2007) and IEC 61162-1 (2007) SAL R1a (SAL Navigation doc no AA20025)
21	BSH 4612/4071591/10	2010-03-17	Report: BSH, Assessment report according to IEC 62288 Ed.1 (2008) SD4-X Display unit (SAL Navigation doc no AA20024)
19	BSH/4612/4061984/11	2011-09-30	Report: BSH, IEC 61023 (2007) and IEC 61162-1 (2010) test report for SAL T3+ ELC (SAL Navigation doc no AA13034)
18	273 152B	2012-01-17	Report: Innventia, SAL R1a Mechanical testing (Vibration) (SAL Navigation doc no AA12032, appendix to AA12027))
17	1209547-4	2012-04-02	Report: Intertek, Storage temperature test report SAL R1a (WTU Assy) (SAL Navigation doc no AA12029)
16	1122354-2	Ed.2	Report: Intertek, EMC test report for SAL R1a with WTU assy (SAL Navigation doc no AA12026)
15	1122354-1	Ed.2	Report: Intertek, EMC test report for SAL T2 with WTU assy (SAL Navigation doc no AA12025)
14	F917800-A	2009-12-14	Report: SP, EMC test report for CN8E, N1E and 1N4B (SAL Navigation doc no AA10054)
13	913128	2009-10-19	Report: Intertek, Environmental test report for Qwerty CN8E, N1E, 1N4B, NTG, N2P, Adveto ESIG and Cherry XS trackball (SAL Navigation doc no AA10053)
12	BSH/46162/0041158/09	2010-03-22	Report: BSH, IEC 61162 interface test report for 1N4B splitter/buffer interface converter (SAL Navigation doc no AA10049)
11	BSH/4612/4070407/06	2006-11-28	Report: BSH, IEC 61023 test report for SAL T2/T2s/T3/T3+/T1 (SAL Navigation doc no AA06081)
10	445	2005-07-04	Certificate: BSH, SD4-x Compass safe distance (SAL Navigation doc no AA05074)

Tests carried out

- Environmental Tests: IEC 60945 (2002) incl. Corr.1 (2008)
- Performance Tests: IEC 61023 (2007)
- Serial Interface Tests: IEC 61162-1 (2016)
- Presentation of information: IEC 62288 (2021)



Job Id: **AA003M04**
Certificate No: **MERB00008UJ**
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Marking of product

The type designation and name and contact address of the manufacturer shall be affixed visibly, legibly and indelibly to the product. In addition the product shall be marked with serial number, safe distance to magnetic compass, power consumption and/or supply voltage.