

EC TYPE-EXAMINATION (MODULE B) CERTIFICATE

Marine Equipment Directive (MED) 2014/90/EU

PHOENIX TESTLAB
Notified Body Number **0700**

Recognised by



0800S11/4822/007

BUNDESAMT FÜR
SEESCHIFFFAHRT
UND
HYDROGRAPHIE

This is to certify that:

PHOENIX TESTLAB did undertake the relevant type approval procedures for the type of equipment identified below which was found to be in compliance with the requirements of Marine Equipment Directive (MED) 2014/90/EU, subject to any conditions in the schedule attached hereto.

Certificate No.	PTL-MED-B-21-110901
Manufacturer Address	SKIPPER Electronics AS Enebakkveien 150 0612 Oslo Norway
Directive Reference (No & Item designation)	Directive 2014/90/EU, Regulation (EU) 2020/1170 MED/4.7 Speed and distance measuring equipment (SDME)
Product Name	SKIPPER SATLOG SD21, S2

Regulation SOLAS 74, as amended, and relevant resolutions and circulars of the IMO
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) *

Specified Standards

IEC 61023 Ed. 3.0 (2007)	IEC 62288 Ed. 2.0 (2014-07)
IEC 60945 Ed. 4.0 (2002) incl. Corr. 1 (2008)	IEC 62923-1 Ed. 1.0 (2018-08) *
IEC 61162-1 Ed. 5.0 (2016-08)	IEC 62923-2 Ed. 1.0 (2018-08) *
IEC 61162-450 Ed. 2.0 (2018-05)	

*) The equipment is not capable of issuing alerts.

Date of issue: **2021-05-11** Expiry date: **2026-05-10**

This certificate remains valid unless suspended, expired or withdrawn, provided the conditions in the attached schedule are complied with.

The attached Schedule of Approval forms part of this certificate. This certificate consists of 5 pages.



Signed by Klaus Knörig
Notified Body

Schedule of Approval

Product description

- **SD21** is a combination of SATLOG for measurement of Speed Over Ground (SOG) and DL1-Multi Single Axis Doppler Speed Log for measurement of Speed Through Water (STW).

SATLOG (SOG) and DL1-Multi (STW) functions operate independently and have each their own display and control unit. This satisfies the requirements of IMO Res. MSC.334(90).

SATLOG (SOG) has a 9" graphic touch display and DL1-Multi (STW) has a LED Dot Matrix Display. Both values, SOG and STW can be displayed on the 9" graphic screen.

- **S2** is the same as SD21, but without the DL1-Multi (STW).

SD21 / S2 System Components for SATLOG (SOG)			
Component	Description	Part No	Software Version
Sensor Unit	SATLOG antenna	SL-SN300	1.01.xx
Display and Control Unit	Display with 9" touch panel for SATLOG	SD-21-SB	SW-M012-1.0.x
Electronic Unit	Electronic Unit for combined SATLOG and DL1-Multi Doppler Speed Log	JB70SD21-SA and JB70S2-SA <ul style="list-style-type: none"> • PP-M001 power unit 24V DC, 5V DC • PC-M001 processor for SATLOG antenna 	SW-M013-1.0.x
Components for Doppler Speed Log DL1-Multi (STW)			
Component	Description	Part No	Software Version
Display and Control Unit	LED Dot Matrix Display for DL1-Multi Doppler Speed Log	CD402CU-SC	SW-M001-1.xx
Electronic Unit	Electronic Unit for combined SATLOG and DL1-Multi Doppler Speed Log	JB70SD21-SA <ul style="list-style-type: none"> • PC-M001 power unit 24V DC • PI-M001 processor for DL1 sensor 	SW-M003-1.xx
Sensor	DL1 STW Single Axis Doppler Sensor	DL1SX-XA	---
Interconnection Box	12 pole interconnection unit	JB12-SA	---

Optional Components			
Component	Description	Part No	Software Version
Multi repeater	Remote multi repeater for NMEA signals	CD401MR	SW-M001-1.xx
Repeater	Speed and Distance Repeater	IR300	SW-R003-1.xx
Remote dimming control	NMEA dimming unit	IR31DIM	SW-R004-1.xx



Approval documentation

Description	Document Name	Revision
Instruction Manual	SD21 Speed over ground (SOG) Speed log with inbuilt STW sensor, DM-M009-1812 SD21 manual, 2019-07-02	Rev 1812
List of Test Reports	Table of Type Tests for SATLOG SL1200 and SD21	2018-12-14
Drawings and Photos	SD21 Drawings and Photos	2018-07-10
Operational Description	SD21 Operational description	2018-03-02
Parts List	SD21 Parts List	2018-03-02
Block Diagram	SD21 Block diagram	2018-03-02
System Description	SATLOG SD21 Dual Speed over ground (SOG) and Speed through water (STW) Speed log System description	2018-07-10
Operational Description	SATLOG Antenna Operational description	R0
Drawings and Photos	SATLOG Antenna Drawings and Photos	R0
Block Diagram	SATLOG Antenna Block diagram	R0
Parts List	SATLOG Antenna Part List	R0
Hardware and Software Information	SATLOG Antenna HW and SW information	R1
Hardware and Software Information	SD21/S2 SATLOG and Doppler Speed log, Hardware and Software information	
Descriptions and Explanations	SATLOG Antenna, Navigation Sensor Descriptions and explanations	---
Technical Note	TN-2018-2 SD21 Redundancy and Isolation	2018-08-19
Technical Note	TN2014-7 SKIPPER standardised NMEA input	
Datasheet	OPTO-coupler HCPL-0201 specification	2010-01-28
Datasheet	CD402CU-SC Compact	2015-08-01
Datasheet	DL1SG-XX, DL1 Single Axis Doppler Sensor	2015-08-01
User Manual	DL1-Multi, Single Axis Doppler Speed Log System User Manual	2013-08-20
Datasheet	JB12 Junction Box Product Datasheet	2014-12-10
Attestation Letter	Statement SATLOG Alarms 2021	2021-05-03



Applied Testing Standards and Test Reports

Testing Standard	Laboratory	Test Report Number / Version
IEC 60945 Ed. 4.0 (2002) incl. Corr. 1 (2008)	Nemko	E17051.00, 2017-06-13
IEC 60945 Ed. 4.0 (2002) incl. Corr. 1 (2008) IEC 62288 Ed. 2.0 (2014-07)	Nemko	E14223.00, 2015-01-15
IEC 60945 Ed. 4.0 (2002) incl. Corr. 1 (2008)	Nemko	E17051.00, 2017-06-13
IEC 60945 Ed. 4.0 (2002) incl. Corr. 1 (2008)	Nemko	E18215.00, 2018-09-27
IEC 62288 Ed. 2.0 (2014-07) IEC 61162-1 Ed. 4.0 (2010-11) IEC 61162-450 Ed. 1.0 (2011-06)	DNV GL	Performance test for ESN100, 2017-06-07
IEC 62288 Ed. 2.0 (2014-07)	DNV GL	Additional testing for Display standards, 2017-02-22
IEC 61162-450 Ed1.0 (2011-06) with AMD1 (2016-03)	BSH	BSH/4542/001/4143100/17-3, 2017-09-05
IEC 61023:2007	DNV	Sea test report for DL1, 2013-04-25
IEC 61023:2007 IEC 60945 Ed. 4.0 (2002) incl. Corr. 1 (2008) IEC 62288 Ed. 2.0 (2014-07) IEC 61162-1 Ed. 4.0 (2010-11) IEC 61162-450 Ed. 1.0 (2011-06)	DNV GL	Performance test for DL2-Multi Dual Axis Speed log with Graphic Touch Display DL21- Multi Combined DL2-Multi Dual axis and DL1-Multi Single axis Speed log, 2015-02-13
IEC 61162-1 Ed. 5.0 (2016-08) IEC 61162-450 Ed. 1.1 (2016-03) IEC 61162-450 Ed. 2.0 (2018-05) IEC 62288 Ed. 2.0 (2014-07)	BV	Performance test for ESN200, 2018-09-28
IEC 61023 Ed. 3.0 (2007)	BSH	BSH 4612/4073131/17, 2017-06-26
IEC 60945 Ed. 4.0 (2002) incl. Corr. 1 (2008)	Nemko	E16014.01, Rev. 01, 2017-04-21
IEC 60945 Ed. 4.0 (2002) incl. Corr. 1 (2008)	Nemko	E13222.00, 2013-09-25
IEC 61023:1999 IEC 60945 Ed. 4.0 (2002) incl. Corr. 1 (2008) IEC 62288-1 (2008) IEC 61162-1 Ed. 4.0 (2010-11) IEC 61162-450 Ed. 1.0 (2011-06)	DNV	Performance test for DL1 combined, 2013-10-03
IEC 61023 Ed. 3.0 (2007)	Skipper	SATLOG sea verification, P9123, 2018-07-21
IEC 62288 Ed. 2.0 (2014-07), Section 7.2.3 and G.2.3.2	Skipper	TN2018-1, 2018-08-07



Application / Limitation

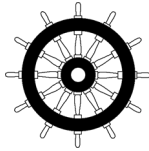
The SD21 system contains an independent SATLOG for measurement of Speed Over Ground (SOG) and a DL1-Multi Single Axis Doppler Speed Log for measurement of Speed Through Water (STW). The units are electrically isolated and can operate simultaneously as two separate devices as per IMO Res. MSC.334(90).

The equipment covered by this certificate is not capable of issuing alerts, hence testing according to IEC 62923-1 and 62923-2 is not applicable.

Notes

1. 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 PHOENIX TESTLAB.
2. Should the specified regulations or standards be amended during the period of validity of this certificate, the product(s) is/are to be re-approved prior to it/they being placed on the market and on board vessels to which the amended regulations or standards apply.

3.



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 ANNEX II of the Directive is fully complied with and controlled by a written inspection agreement with a notified body.

