

TYPE EXAMINATION CERTIFICATE (MODULE B)

Certificate No:
MERB00001YG
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 Echo-sounding equipment

with type designation(s)
Skipper ESN100

Issued to

Skipper Electronics AS
Oslo, Norway

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

Regulation **MSN 1874 Amendment 7,**

item No. UK/4.6. SOLAS 74 as amended, Regulations V/18, V/19 & X/3, IMO Res. A.224(VII), IMO Res. A.694(17), IMO Res. MSC.36(63), IMO Res. MSC.74(69), 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 **2025-07-01**.

Issued at **London** on **2023-05-25**

DNV local unit:
Oslo Maritime and CAP



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

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. The product liability rests with the manufacturer or his representative in accordance with the Merchant Shipping (Marine Equipment) Regulations 2016.

This certificate is valid for equipment, which is conform to the approved type. The manufacturer shall inform DNV UK Ltd. of any changes to the approved equipment. Should the specified regulations or standards be amended during the validity of this certificate, the product is to be re-approved before being placed on board a vessel to which the amended regulations or standards apply. This certificate remains valid unless suspended, withdrawn, re-called, or cancelled.

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.



Product description

The ESN100 system consists of the following modules

Hardware module	Model name	SW version	location
Display	ESN100-XB *	1.1.Y**	Protected
	CU-M001-XB *	1.1.Y**	Protected
Process Unit	JB50E1-XA *	1.0.0	Protected
Transducer	ETN50	---	Submerged
	ETN200	---	Submerged
	ETN200S	---	Submerged
	ETS50200	---	Submerged
	ETS050	---	Submerged
	ETS200	---	Submerged
Optional Features			
Remote dimming control	IR31DIM-XA*	1.Y**	Protected
Digital depth repeater	IR301	2.Y**	Protected
	UDD SAM4900	---	Protected
Digital multi repeater	CD 401 MR	1.Y**	Protected
Option			
Managed Ethernet Switch	EDS-408A	-	Protected

* X is an undefined letter that will change based on customer

** Y is a number representing minor software modifications

Application/Limitation

- Installation to be performed in accordance with manufacturer's installation manuals.

Type Examination documentation

DNV No.	Document ID	Rev.	Description
30	17A0322R-ITCEP16V00	V2.0	Report: Dekra, EMC test report for EDS-408A-series ethernet switches
29	TL18024	Issue 2	Report: MS Testing, EMC and environmental test report for EDS-408A-MM-ST ethernet switch
27		2021-08-20	Report: Skipper, BAM and IEC 61162-450 test report for ESN100 1.1.0.0
13	DM-G004-SB	2123	Manual: Skipper, ESN100 Operation and Installation Manual
11	-	07.06.2017	Report: DNV GL, Report from Sea test of ESN100
26	-	04.09.2017	Report: DNV GL, Signed Performance test for ESN100 Single channel echo sounder
21	E.14223.01	01	Report: Nemko, Environmental test report DL2-Multi Dual axis speed sensor and DL21 Dual Axis and STW speed sensor
9	E.17051.00	0	Report: Nemko, Environmental test report ESN100 Single Channel Navigation Echo Sounder System



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Tests carried out

- Environmental Tests: IEC 60945 (2002) incl. Corr.1 (2008)
- Performance Tests: ISO 9875 (2000) incl. Corr.1 (2006)
- Interface Tests: IEC 61162-1 (2016), IEC 61162-450 (2018)
- Presentation of information: IEC 62288 (2014)
- Bridge Alert Management: IEC 62923-1 (2018), IEC 62923-2 (2018)

Marking of product

The Manufacturer and Type Designation to be applied to the equipment in a clearly visible location. In addition the equipment shall be marked with serial number, safe distance to magnetic compass, power consumption and/or supply voltage