

EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Application of: Directive 2014/90/EU of 23 July 2014 on marine equipment (MED), issued as "Forskrift om Skipsutstyr" by the Norwegian Maritime Authority. This Certificate is issued by DNV GL AS under the authority of the Government of the Kingdom of Norway.

This is to certify:

That the Speed and distance measuring equipment (SDME)

with type designation(s)
Skipper EML224

Issued to

Skipper Electronics AS
Oslo, Norway

is found to comply with the requirements in the following Regulations/Standards:
Regulation **(EU) 2017/306**,
item No. MED/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)

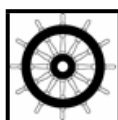
Further details of the equipment and conditions for certification are given overleaf.

This Certificate is valid until **2019-02-24**.

Issued at **Høvik** on **2017-04-05**

DNV GL local station:
Oslo Maritime and CAP

Approval Engineer:
Roger Lauritsen



Notified Body
No.: **0575**

for **DNV GL AS**

Vidar Dolonen
Head of Notified Body

A U.S. Coast Guard approval number will be assigned to the equipment when the production module has been completed and will appear on the production module certificate (module D, E or F), as allowed by the "Agreement between the United States of America and the EEA EFTA states on the mutual recognition of Certificates of Conformity for Marine Equipment" signed 17 October 2005.

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-surveillance module (D, E or F) of Annex B of the MED is fully complied with and controlled by a written inspection agreement with a Notified Body. The product liability rests with the manufacturer or his representative in accordance with Directive 2014/90/EU.

This certificate is valid for equipment, which is conform to the approved type. The manufacturer shall inform DNV GL AS of any changes to the approved equipment. This certificate remains valid unless suspended, withdrawn, recalled or cancelled.

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.



Job Id: **344.1-000721-7**
Certificate No: **MEDB00001Y1**

Product description

Hardware modules:

- EML224 Operator Unit
- EML224 Compact Display
- EML224 Junction Box
- EML224 Sensor

Type/ part no.:

EML224x-xx
CD401Ex-xx
JB60xx-xx
EML224Sxxx-xx

Optional Features

Features:

- Remote dimming control:
- Digital speed and distance repeater
SW version 1.xx
- Digital speed and distance repeater
SW version 1.xx
- Digital multi repeater

Type:

IR30DIM
IR300

CD401LR

CD 401 MR

Software modules:

- EML224 Operator Unit - SW version 1.xx
- EML224 Compact Display - SW version 1.xx

Application/Limitation

The certificate is also valid for the Speed and distance measuring equipment with the following type designation:

- Kelvin Hughes EML224

The digital repeaters IR300 and CD401LR are approved for installations in exposed (outdoor) areas.

Type Examination documentation

DNV GL No	Doc. Ref.	Rev.	Description
37	TAA000015T		Certificate: DNV GL, CD 401 MR
34	DM-E001-SB	1650	Manual: EML224N Operation and Installation Manual
33		13.01.2017	Report: Additional testing for Display standards for GDS101, GDS102, DL850, EML224, CD401
32			Report: Survey report- IEC 61162 (2010) testing
31	E08582.00		Report: NEMKO, Tests acc. to EN60945 (2002)
30		23.02.2009	Report: Operational Tests - EML224 Electromagnetic Log w/Compact Display CD401
22		04.06.2008	Report: Compact production testing v1_00_4_6_08.doc
21		June 2008	Manual: LR Speeded Log Repeater compact version
20		June 2008	Manual: EML224 Speed Log compact version
18		16. May 2008	Report: Update performance test for EML224 with CD401
14	E07412.00		Report NEMKO, Test Report CD401
12	DANAK-196857		Report: DANAK, Type approval tests ED-165, IR-300, IR-301
10		20050408sw1.4	Manual: IR300 Digital Speed and Distance Repeater.

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			Operating and Installation Manual
9	January 2007		Reports: Documentations from initial approval to be found in folder TAA3118/File 843.20
8		20050511C sw.1.27.11	Manual: EML224 Installation and Operating Manual
7		January 2007	Report: Performance Test Report EML224 with compact sensor
6	January 2007		Report: Skipper, Dry Heat Storage Test for EML224S
5	BL9233T614		Report: Atlas, Environmental test report SAM 4642
4	December 2006		Report: Sea performance tests report EML224
2	July 2006		Report: Pressure test EML224 sensor
1	05299.136.06		EMC Test report

Tests carried out

- Environmental tests, IEC 60945 (2002)
- Performance tests, IEC61023 (2007)
- Serial Interface tests, IEC61162-1 (2010)
- Serial Interface tests, IEC61162-1 (2016)
- Display performance tests IEC 62288 (2014)

Marking of product

- Skipper EML224 or
- Kelvin Hughes EML224

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