

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 Norway.

This is to certify:

That the Voyage data recorder (VDR)

with type designation(s)
VR-7000

Issued to
Furuno Electric Co., Ltd.
Nishinomiya Hyogo Pref, Japan

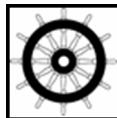
is found to comply with the requirements in the following Regulations/Standards:
Regulation **(EU) 2017/306**,
item No. MED/4.29. SOLAS 74 as amended, Regulations V/18, V/20 & X/3, IMO Res. A.694(17), IMO Res. MSC.36(63), IMO Res. MSC.97(73), IMO Res. MSC.191(79), IMO Res. MSC.302(87), IMO Res. MSC.333(90)

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

This Certificate is valid until **2019-09-30**.

Issued at **Høvik** on **2018-01-22**

DNV GL local station:
Kobe



Notified Body
No.: **0575**

for **DNV GL AS**

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Roald Vårheim
Head of Notified Body

Approval Engineer:
Frederik Tore Elter

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 This certificate remains valid unless suspended, withdrawn, recalled or cancelled.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.



Product description

The VR-7000 VDR comprises combinations of the following components:

Unit	Model Name	Remark	Location
Data collecting unit (DCU)	VR-7010		Protected
Fixed data recording unit	VR-7020		Exposed
Float-free data recording unit	VR-7021F		Exposed
Remote alarm panel	VR-7017		Protected
Microphone	VR-7011	Max 8 ch.	Protected
Microphone waterproof	VR-7012W		Exposed
Video LAN converter	IF-7100	Max 2 ch. (DVI-D/RGB)	Protected
Sensor adapter	MC-3000S	Serial	Protected
Sensor adapter	MC-3010A	Analog (option)	Protected
Sensor adapter	MC-3020D	Digital (option)	Protected
Live player V5	VR-7030	Playback package	Protected
Intelligent HUB	HUB-3000	option	Protected
Switching HUB	HUB-100	option	Protected
Junction box	VR-7022F		Protected
Junction box	IF-8530	option	Protected

For latest revision of the Appendix, see <http://exchange.dnv.com/tari>

Application/Limitation

The VR-7000 equipment shall be installed in compliance with the installation instructions of Pub. No. IME-44850-E1. Fixed Data Recording Unit capacity is 32GB.

Note: The VR-7000 is examined and found to comply with the standards for interconnection with a Bridge Alarm Management System; IMO resolution MSC.302(87) "Bridge Alarm Management" and IEC 61924-2 "Modular structure for INS", Annex K and Annex M.

Type Examination documentation

DNV No.	Document No.	Rev.	Document Title
43	K24-19-021		Technical document; IF-7100 changes
42	K24-17-637-2	1	Test report of Image Evaluation for VDR
41	IME-44850-E1		Installation manual
40	FLI12-14-137		IEC60945: Compass safe distance
39	FLI12-14-136		IEC60945: Environmental test report
38	FLI12-14-135		IEC60945: EMC test report
37	K24-19-018		Technical document - monitoring and alerts
36	E42-01402-Z		Data Extraction Procedure
35	K24-19-019		Technical document - configuration data file
34	K24-19-017-3		Technical document - BER monitoring
31	K24-17-657		UTC time synchronization
30	K24-17-658		Recording duration test

DNV No.	Document No.	Rev.	Document Title
28	FLI12-14-026		IEC62288 report
27	FLI12-14-025		Compass safe distance report
26	FLI12-14-024		IEC60945 operation check report
25	FLI12-14-023		IEC60945 test report
24	FLI12-14-022		EMC test report
23	FLI12-14-021		IEC61162-450 test report
22	FLI12-14-020		IEC61162-1/2 test report
18	E13261.04		NEMKO test report - TRON40VDR - IEC61097-2, IEC60945, IEC61996-1, RTCM77
17	75924802	1	TUV SUD - TRON40VDR test report - Cospas-Sarsat T.007
12	ENV267		L3 HVR04 Environmental/EMI test report
11	ENV266		L3 HVR04 Crash Survivability test report
9	K24-17-637		Furuno Image Test Report of VR-7000
8	K24-17-633		Test report IEC61996-2 6.2.2.5 Audio complex signals
7	K24-19-016		Technical Document VR-7000
6	K24-17-591		VR-7000 - Type approval testing report
5	K24-19-017		VR-7000 - Technical document
4	OME-44852-Z		Operation manual - maintenance viewer
3	OME-44851-Z		Operation manual Live Player V5
2	OME-44850-Z		Operation manual VR-7000
1	IME-44850-Z		Installation manual

Tests carried out

- Performance - IEC61996-1(2013)
- Serial Interface - IEC61162-1(2010)
- Serial Interface - IEC61162-2(1998)
- LAN Interface - IEC61162-450(2011)
- Presentation - IEC62288(2014)
- Environmental - IEC60945(2002)

Marking of product

The designation of Manufacturer and Type to be fixed 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.