

# TYPE EXAMINATION CERTIFICATE (MODULE B)

Certificate No:  
**MERB000039E**  
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 Voyage data recorder (VDR)**

with type designation(s)  
**VR-7000**

Issued to

**Furuno Electric Co., Ltd.**  
**Nishinomiya, Japan**

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

Regulation **MSN 1874 Amendment 6,**

**item No. UK/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 **2024-06-11**.

Issued at **London** on **2022-12-28**

DNV local unit:  
**Kobe**



for **DNV UK Ltd.**

Approval Engineer:  
**Frederik Tore Elter**

Approved Body No.: **0097**

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**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 This certificate remains valid unless suspended, withdrawn, re-called, or cancelled.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 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-7024F (HB)	<i>Optionally installed with heated bracket (HB).</i>	Exposed
Remote alarm panel	VR-7017		Protected
Microphone	VR-7011	<i>Max 8 ch.</i>	Protected
Microphone waterproof	VR-7012W		Exposed
Video LAN converter	IF-7100	<i>Max 2 ch. (DVI-D/RGB)</i>	Protected
Sensor adapter	MC-3000S	<i>Serial</i>	Protected
Sensor adapter	MC-3010A	<i>Analog (option)</i>	Protected
Sensor adapter	MC-3020D	<i>Digital (option)</i>	Protected
Live player V5	VR-7030	<i>Playback package</i>	Protected
Intelligent HUB	HUB-3000	<i>option</i>	Protected
Switching HUB	HUB-100	<i>option</i>	Protected
Junction box	VR-7022F		Exposed
Junction box	IF-8530	<i>option</i>	Protected
	<i>Software</i>	<i>Prog.no. 2450102 Rev.01.xx</i>	

## Application/Limitation

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

Float free VR-7024F (with optional heated bracket) is tested for compliance with IEC 61996-1 (2013) +A1(2021) using a Galileo GNSS receiver in accordance with IEC 61108-3 (2010).

Note: The VR-7000 is examined and found to comply with the standards for IEC 61924-2 "Modular structure for INS", Annex K and Annex M.

## Type Examination documentation

DNV No.	Document ID	Rev.	Description
79	K24-17-1084	31. May 2022	Report: Furuno, DNV type approval testing report of IEC 61996-1 E.d2.1, Model VR-7000
77	OME-44852-K	K: APR. 01. 2022	Manual: Furuno, Instruction Manual VDR Maintenance Viewer, Model: VR-7000/VR7000S
76	OME-44851-K	K: APR. 01.2022	Manual: Furuno, Operators Manual, Live Player V5, Model: VR-7030
75	OME-44850-Q		Manual: Operators Manual, VDR/S-VDR Model: VR-7000/VR-7000S
73	IME-44850-X	2022.05.26	Manual: Furuno: Installation Manual VDR/SVDR, Model: VR-7000/VR-7000S_
72	E-4201402-F	2022.06.03	Manual: Furuno: Instruction Manual, Data exchange Procedure, Model: VR-7000/VR-7000S
70	Cert. 1354	4. Feb. 2022	TAC-1354 for Jotron models Tron 40VDR AIS_04-FEB-2022

DNV No.	Document ID	Rev.	Description
69	Cert. 354	4. Feb. 2022	TAC-354 for Jotron models Tron 40VDR AIS_04-FEB-2022
66	75950873-02	Issue 01	Report: TUV IEC 60945, ETSI EN 301 489-1 and ETSI EN 301 489-19 Tron 40VDR AIS
65	75950873-08	Issue 03	Report: TUV, IEC 61108-3 (2010) GNSS testing of Tron 40VDR AIS
64	75950873-09	Issue 01	Report: TUV: IEC 61097-2 Annex D, 121.5 MHz Homing transiter, Tron 40VDR AIS
63	BSH/454.GNSS/TUVSUDLtd/6	8. Feb. 2022	Report: BSH, IEC 61108-3 (2010) (4.3.8, 5.6.9) integrated GNSS receiver,
62	75950873-01	Issue 02	Report: TUV, Cospas-Sarsat T.007 Model: Tron 40VDR AIS
59	75950873-07	Issue 03	Report: TUV, IEC 612097-2 Model: Tron 40VDR AIS EPIRB
58	E21187.00	2022-02-10	Report: NEMKO IEC 61996-1:2013 + AMD1:2021 – Partial test, Tron 40VDR AIS (COSPAS-SARSAT 406 MHz Satellite Emergency Position-Indicating RadioBeacon (EPIRB) with attached Voyager Data Recorder (VDR))
56	K-24-17-1036-0	13. APR 2021	Report: Furuno IEC61162-450: VDR Internal Test Report of IEC61162-450
53	K-24-17-1026-0	14. JAN 2021	Report: DNVGL type approval Internal test Report pf IEC 62923-1/2 Model VR-7000/VR-7000S - DELETE
48	FLI 12-14-021		VR-7000: Test Report IEC61162-450
47	LIC 12-19-026		VR-7010: IEC61162-1
46	K24-17-941-0		Internal test report of IEC61162-450 Ed.1 Amd.1-
45	FLI 12-14-020		Test report IEC61162-1/-2 for VR-7000
44	K-24-17-927-0		Internal test report IEC61162-1 Ed.5
43	K24-19-021		Technical document; IF-7100 changes
42	K24-17-637-2	1	Test report of Image Evaluation for VDR
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
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

<b>DNV No.</b>	<b>Document ID</b>	<b>Rev.</b>	<b>Description</b>
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 - LTC interface specification

### Tests carried out

- Performance IEC 61996-1 (2013) + A1(2021)
- Serial Interface IEC 61162-1 (2016)
- Serial Interface IEC 61162-2 (1998)
- LAN Interface IEC 61162-450 (2018)
- Presentation IEC 62288 (2014)
- Environmental IEC 60945 (2002) incl. Corr.1 (2008)
- Bridge alert management IEC 62923-1 (2018) and IEC 62923-2 (2018)

### Marking of product

The type designation and name and contact address of the manufacturer shall be affixed visibly, legibly and indelibly to at least one part of the product. In addition the various equipment shall be marked with serial number. Safe distance to magnetic compass and power consumption and/or supply voltage may be stated in the individual installation manuals.