TYPE EXAMINATION CERTIFICATE (MODULE B)

Certificate No:
MERB00000AJ
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 Track control system (TCS)

with type designation(s)
TC-3001 EMRI

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/4.33. SOLAS 74 as amended, Regulations V/18 & V/19, IMO Res A.694(17), IMO Res MSC.74(69), 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 **2022-12-28**

DNV local unit:
Kobe

Approval Engineer:
Frederik Tore Elter

Approved Body No.: **0097**

for **DNV UK Ltd.**

Digitally Signed By: Mydlak-Röder, Christine

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 This certificate remains valid unless suspended, withdrawn, re-called, or cancelled.

Product description

The TC-3001 EMRI track control system consists of combinations of the following sub-systems:

ECDIS FMD-3200/-3200-BB/-3300 comprising:		**Comment**	**Location**
Processor unit	EC-3000		Protected
VDU	Ref. ECDIS certificate		
	RCU-024[1] or 026[2]	1) ECDIS control unit 2) Trackball control unit	
Sensor adapter	MC-30x0n	*x ={ 0,1,2,3 and n ={ S, A, D*	
Network switch	HUB-100[3] or HUB-3000[4]	3) Switching HUB 4) Intelligent HUB	
Software Versions	Linux Kernel 5.4 ver. 5.xx C-MAP: SDK ver.6.0	Operation System IHO Presentation library	

and

Heading Control System FAP-3000 comprising:		**Comment**	**Location**
Control panel	MIP241		Protected
Electronic unit	AEU611		
Fall-back module	DTU11		
Software versions	AEU ver.0.01 MIP ver.0.2		

Application/Limitation

- The system complies with the IMO requirements for Category C track control system at ship's speed up to 30 knots.
- The equipment identified in the product description shall hold valid type approval certificates.
- The system shall be connected to an alarm transfer system for transfer of back-up navigator alarms.
- The heading control system shall be connected to two gyro compass for heading monitoring.
- The LAN interface of the Main Processing Unit may be used for interconnecting other Furuno Processing Units only.
- The steering mode selector switch/override facility shall be installed in the vicinity of the main conning position (the workstation in command of track control).
- The installation shall be verified and tested onboard according to manufacturer’s installation instructions.

Type Examination documentation

DNV No.	Document ID	Description
5	K24-17-491 rev.2	DNV type approval testing report
21*	K24-20-047	Technical Manual for TCS
24	K24-17-529	DNV type approval testing report
32	DANAK-19/11899	Test for marine type approval of MIP2xx, AEU611 and SAB10
33	K24-17-561	DNV type approval testing report
34	DTU11	Dual track module
37	8487-2	Installation manual – EMRI FAP-3000
54	K24-17-716	DNV type approval test report - TC-3001 EMRI
55	K24-17-715	Type approval test report - TC-3001
103	8487-2	Manual: EMRI Documentation for FAP-3000 Autopilot
104	MEDB00003SJ	Certificate: EMRI HCS SEM300 (other trade names: FAP-3000, SeaQ)
105	K24-17-1074	Report: Furuno IEC 62923-1 (2018); IEC 62923-2 (2018), DNVGL type approval testing report, Model: Track Control System, Appendix, Model: Track Control System, Type: TC-3001 EMRI
106	K24-17-1045	Report: Furuno IEC 62923-1 (2018); IEC 62923-2 (2018), DNVGL type approval testing report, Model: Track Control System, Model: Track Control System, Type: TC-3001 EMRI
107	OME-44730-P10	Manual: Furuno: OPERATOR'S MANUAL ECDIS Model: FMD-3200/FMD-3200-BB/FMD-3300
110	8488-2-3	Manual: EMRI - HCS System Functional Description
111	MEDB00001AV	Certificate: Furuno ECDIS FMD 32000/32000 BB and FMD 3300

**Documentation stored on 344.1-002251*

Tests carried out

- Performance IEC62065 (2014)
- Environmental IEC60945 (2002), incl. Corr.1 (2008)
- Serial Interface IEC61162-1 (2016)
- Serial Interface IEC61162-2 (1998)
- Presentation IEC62288 (2014)
- Bridge Alert Management (BAM) IEC 62923-1 (2018) and IEC 62923-2 (2018)

Marking of product

The name and contact address of the manufacturer and type designation of the product is to be affixed 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.