DNV·GL

Certificate No:
MEDB000045U

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 Track control system (TCS)

with type designation(s)
TC-3001 TKC

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

is found to comply with the requirements in the following Regulations/Standards:
Regulation **(EU) 2018/773,**
item No. MED/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 **2023-10-23**.

Issued at **Høvik** on **2018-10-24**

DNV GL local station:
Kobe

Approval Engineer:
Olaf Gundersrud

Notified Body
No.: **0575**

for **DNV GL AS**

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 This certificate remains valid unless suspended, withdrawn, recalled or cancelled.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

NORWEGIAN ACCREDITATION PROD 019

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Product description

The TC-3001 TKC track control system consists of combinations of the following equipment:

Equipment	*Location*
• ECDIS FMD-3200/3200-BB/3300 manufactured by Furuno Electric Co., Ltd.	Protected
• Heading Control System, HCS-9000 manufactured by Tokyo Keiki,	Protected

For details, see Appendix

Application/Limitation

- The system complies with the IMO requirements for Category C track control system.
- The equipment identified in the production description shall hold a valid type approval certificate.
- The system shall be connected to an alarm transfer system for transferring of back-up navigator alarms.
- The LAN interface of the Main Procssing Unit may be interconnecting other Furuno Main Processing Units only.
- The installation shall be verified and tested onboard according to manufacturers installation instructions

Type Examination documentation

Tests carried out

- Performance – IEC62065 (2014)
- Environmental – IEC60945 (2002 incl. corr.2008)
- Serial Interface – IEC61162-1 (2016)
- Serial Interface – IEC61162-2 (1998)
- Presentation – IEC62288 (2014)

Marking of product

The type designation and name and contact address of the manufacturer shall be affixed visibly, legibly and indelibly to the product. In addition the product shall be marked with serial number, safe distance to magnetic compass, power consumption and/or supply voltage.

Job Id: **344.1-003620-15**
Certificate No: **MEDB000045U**

APPENDIX

Product Description

The TC-3001-TKC track control system consists of the following equipment:

ECDIS FMD-3200/3200-BB/3300 comprising:		**comment**
Processor unit	EC-3000	
Control unit	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 (optional)	HUB-100[3] or HUB-3000[4]	3) *Switching HUB* 4) *Intelligent HUB*
Software Versions	FMD-3x00: 3.xx Linux kernel: 3.2 C-MAP: SDK 6.0	

and

Heading Control System HCS-9000 comprising:		**comment**
Heading Control unit	HCU-92	
Heading Control Interface unit	HCIFU-92	
Heading Control Terminal unit	HCTU-93	
Heading Control Switch unit	HCSWU-91	
Repeater unit	UD-100	
Software versions	HCCPU V.1.xx ADNCT2 V.1.xx HCIFU V.1.xx	

Type Examination documentation

DNV No.	Document no.	Title
81	K24-17-864	Internal test report for IEC62288 ed.2
75	IME-44730-H12	Installation manual: FMD-3200/-3300/-3200-BB
72	OME-44730-G10	Operator's manual: FMD-3200/-3300/-3200-BB
48	K24-17-664	Appendix of Test Procedure
47	K24-17-681	Test report of HCR sentence
44	K24-17-671	Type approval testing report of improved software
43	K24-17-616	Type approval testing report TC-3001 TKC
42	OME-44730-C16	Operator's manual FMD-3200/-3200-BB/-3300
8	BSH/4612/4330516/08	Conformance test report TC1000-Y
21*	K24-20-047	Technical Manual for TCS
10	K24-17-513	DNV Type approval testing report TC-3000 TKC
	DNV cert. no. MEDB00003NC	Heading Control System HCS-9000
	DNV cert. no. MEDB00001AV	ECDIS FMD-3200/3200-BB and FMD-3300

**Documentation stored on 344.1-002251*