



DET NORSKE VERITAS

EC TYPE EXAMINATION CERTIFICATE

Application of: Council Directive 96/98/EC of 20 December 1996 on Marine Equipment as amended by directive 2011/75/EU, issued as "Forskrift om Skipsutstyr" by the Norwegian Maritime Directorate. This Certificate is issued by Det Norske Veritas under the authority of the Government of the Kingdom of Norway.

CERTIFICATE NO. **MED-B-8478**

This is to certify that the
Track control system

with type designation(s)
TC-3000 EMRI

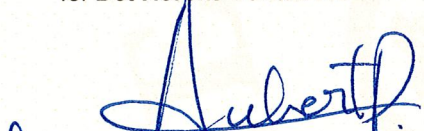
Manufacturer

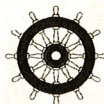
Furuno Electric Co., Ltd.
Nishinomiya Hyogo Pref, Japan

is found to comply with the requirements in the following Regulations/Standards:
Annex A.1, item No. A.1/4.33 and Annex B, Module B in the Directive. SOLAS 74 as amended, Regulation V/18 & V/19, IMO Res A.694(17) and IMO Res MSC. 74(69) & 191(79)

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

Høvik, 2013-07-18
for **Det Norske Veritas AS**

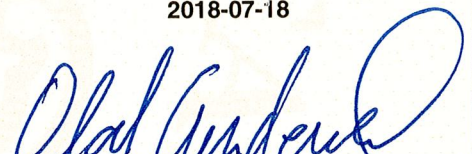

for **Marianne Strand Valderhaug**
Head of Department



Notified Body No.: **0575**

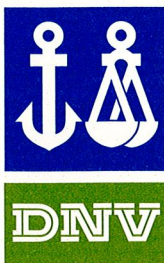
DNV local office:
Helsinki

This Certificate is valid until
2018-07-18


Olaf Gundersrud
Surveyor



The Certificate is subject to terms and conditions overleaf. Any significant changes in design or construction of the product, or amendments to the Directive or Standards referenced above may render this Certificate invalid. The product liability rests with the manufacturer or his representative in accordance with Council Directive 96/98/EC, as amended. The Mark of Conformity may only be affixed to the product and a Declaration of Conformity may only be issued when the production/product assessment module referred to in the council directive, is fully complied with.



Certificate No.: MED-B-8478
Item No.: A.1/4.33
Job Id.: 344.1-003620-4

Product description

The TC-3000 EMRI track control system consists of combinations of the following equipment:

	Location
• ECDIS FMD-3200/3200-BB/3300 manufactured by Furuno Electric Co., Ltd.	Protected
• Heading Control System, FAP-2000 manufactured by EMRI A/S,	Protected

For details, see Appendix

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

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 Processing 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

- See Appendix

Tests carried out

- Performance – IEC62065 (2002)
- Environmental – IEC60945 (2002)
- Serial Interface – IEC61162-1 (2010)
- Serial Interface – IEC61162-2 (1998)
- Presentation – IEC62288 (2008)

Marking of product

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

Mark of Conformity

The manufacturer is allowed to affix the Mark of Conformity according to Article 11 in the Council Directive 96/98/EC on Marine Equipment and shall issue a Declaration of Conformity, only when the module D or E or F of Annex B in the same directive is fully complied with.

Module D:	The quality system for production and testing shall be approved by the Notified Body.
Module E:	The quality system for inspection and testing shall be approved by the Notified Body.
Module F:	Compliance of the products to type as described in this EC Type-Examination Certificate must be verified by the Notified Body who also shall issue a Certificate of Conformity

USCG Approval for TCS

The product has been assigned a **U.S. Coast Guard Module B number**, USCG approval 165.112/EC0575, to note type approval to Module B only as it pertains to obtaining US Coast Guard approval 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.





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Item No.: A.1/4.33
Job Id.: 344.1-003620-4

APPENDIX REV. NO.1 (PAGE 1 OF 1)

Product Description

The TC-3000 EMRI track control system consists of the following equipment:

ECDIS FMD-3200/3200-BB/3300 comprise:		comment
Processor unit	EC-3000	
	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 (2.6): ver 1.xx C-MAP: SDK ver.5.0	

and

Heading Control System FAP-2000 comprise:		
Control panel	MIP41	
Electronic unit	AEU511	
Fall-back module	DTU11	
Software versions	AEU ver.3.1	
	MIP ver.Mip2	

Type Examination documentation

DNV No.	Document no.	Title
8	BSH/4612/4330516/08	Conformance test report TC1000-Y
21*	K24-20-047	Technical Manual for TCS
24	K24-17-529	DNV type approval testing report
5	K24-17-491 rev.2	DNV type approval testing report
	GL certificate No. 12602-10 HH	Heading Control System FAP-2000
	DNV certificate No. MED-B-7725	ECDIS FMD-3200/3200-BB and FMD-3300
25	8395-2	Installation manual – EMRI HCS
10	K24-17-513	DNV Type approval testing report TC-3000 TKC
11	OME-44730-B1A	Operator's manual – ECDIS FMD-3200/3200-BB/3300

*Documentation stored on 344.1-00251

Place and date
HØVIK, 2013-07-18

Olaf Gundersrud



END OF CERTIFICATE