



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 2002/75/EC, 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-4540

This Certificate consists of 5 pages

This is to certify that the
Track control system

with type designation
TECDIS TCS

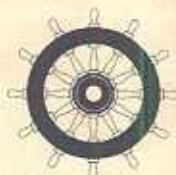
Manufacturer
Telko AS
TJØME, Norway

is found to comply with the requirements in the following Regulations/Standards:
Module B in the Directive, SOLAS 74 as amended, IMO Resolution MSC.74(69) Annex 2,
IMO Resolution A.694(17).

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

Place and date
Høvik, 2007-12-07

for DET NORSKE VERITAS AS



This Certificate is valid until
2012-12-07

Notified Body No. 0575

Kristen Ulveseter

Manager, MTPNO370

Department Systems & Components

Arve Lepsøe

Surveyor

DNV local office:
DNV Sandefjord



Notice: 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.

If any person suffers loss or damage which is proved to have been caused by any negligent act or omission of Det Norske Veritas, then Det Norske Veritas shall pay compensation to such person for his proved direct loss or damage. However, the compensation shall not exceed an amount equal to ten times the fee charged for the service in question, provided that the maximum compensation shall never exceed USD 2 million. In this provision "Det Norske Veritas" shall mean the Foundation Det Norske Veritas as well as all its subsidiaries, directors, officers, employees, agents and any other acting on behalf of Det Norske Veritas.



Cert. No.: MED-B-4540
Job Id.: 344.1-000651-1
Item No.: A.1/4.33

Product description

See Appendix.

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

Application/Limitation

- See Appendix.
- The installation shall be verified and tested onboard according to TECDIS Installation manual - Checklist regarding Installation.

Type examination documentation

See Appendix.

Tests carried out

- Performance testing, IEC 62065 (2002)
- Environmental testing, IEC 60945 (2002)
- Serial interface testing, IEC 61162 (2000)

Marking of product

TECDIS TCS

Each unit shall be marked with:


- Unit Name/ model
- Serial number
- Compass safe distance





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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 shall issue a Certificate of Conformity.

USCG Approval

An 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" signed 17 October 2005.





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APPENDIX REV. NO. 1 (PAGE 1 OF 2)

Product description

TECDIS TCS consisting of the following components:

- Telko TECDIS
- Raytheon NP2025 Plus, Heading control system

Software Modules:

- Telko TECDIS, version 4.6.X
- Raytheon NP2025 Plus, version 102-885p01e00.xx

Application/Limitation

- The system shall be connected to an alarm transfer system for transfer of back-up navigator alarms.
- The TECDIS TCS complies with the requirements for Category C Track Control Systems (Track control along pre-planned straight and curved tracks).

Type Examination documentation

- TECDIS operator's manual, edition 1.9
- TECDIS installation manual, edition 1.8
- TECDIS conformance test report, revision 2
- Conformance test of ECDIS and TCS, rev.05
- ECDIS Colour Verification and Acoustic noise and signals test report, Doc. No.: DOC100132 Rev.1
- ECDIS Colour verification test report, Doc. No.: DOC100193-1
- Conformance test report of a flat panel display for use as Radar – and ECDIS – Monitor , Type JH19T02 MMD E1, Doc. No.: 4612/4300107/05/S3330, rev.02
- Conformance test report of a flat panel display for use as Radar – and ECDIS – Monitor , Type JH23T02 MMD E1 , Doc. No.: 46162/0070335/07/S3330
- EMC/ Environmental Testing of Personal computer HT403P4 STD-A1, Doc. No.: 2004-3139 Rev.01
- EMC/ Environmental Testing Blackbox HTB04PM STD-A1 and HTB04PM STD-A2/24, Doc. No.: 2004-3511 Rev.01
- Type Approval testing of 20.1 inch Maritime Multi Display with remote control and external video and power, Doc. No.: E500247
- Type testing of 19 inch panel display type JH19T02 MMD E1, Doc. No.: 2005-3112 Rev.01
- Type Approval testing of MOUSE-TRAK trackball, Doc. No. E501359-2, as amended by Doc. No.: A503175





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APPENDIX REV. NO. 1 (PAGE 2 OF 2)

- Test Report for Furuno Inmarsat-C SES, FELCOM 15, Report No.: FLI 12-02-047
- Test Report IEC 60065, Doc. No.: 200112106
- Test Report for Furuno Terminal unit IB-583, Report No.: FLI 12-02-036
- Compass safe distance testing of loudspeakers HP-6 and HPS-6 according to IEC 60945, Doc. No.: 2005-3248 Rev.01
- Environmental test of loudspeakers HP-6 and HPS-6, Doc. No.: 3010-05-0284
- Type testing of 20 inch panel display, type JH 20T06 MMD E1-AC, Doc. No.: 2005-3125 Rev.01
- EMC and Environmental Testing of HT405P4 STD-A1, Doc. No.: 2006-3273 Rev.01
- EMC type approval testing of Maritime Rack Computers, Doc. No.: A503794-1
- Excessive conditions test of HT 205P4 STD Marine computer and JH 23T02 MIL Maritime Multi Display, Doc. No.: 2006-3363 Rev.01
- Type testing of 23 inch panel display, type JH 23T02 MMD E1, Doc. No.: 2005-3362 Rev.02
- Test report for FURUNO FEA-2X07, Doc. No.: FLI 12-04-030.
- EMI Test report, Doc. No.: EMV0018E.02
- Testreport for Raytheon HCS NP 2035 (2015/2025), Doc. No.: TA01-03-02-GL

Place and date
HØVIK, 2007-12-07


ARVE LEPSØE

END OF CERTIFICATE

