

EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Certificate No:
MEDB000025K
Revision No:
3

Application of: Directive 2014/90/EU of 23 July 2014 on marine equipment (MED). This Certificate is issued by DNV GL SE based on the notification of the Federal Maritime and Hydrographic Agency of Germany.

This is to certify:

That the Gyro compass for high-speed craft

with type designation(s)
CompassNet (Type 5026)

Issued to

**Northrop Grumman Sperry Marine B.V. - German Branch
Hamburg, Germany**

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

Regulation **(EU) 2020/1170,**

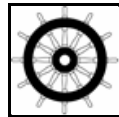
item No. MED/4.31. SOLAS 74 as amended, Regulation X/3, IMO Res. A.694(17), IMO Res. A.821(19), IMO Res. MSC.36(63), IMO Res. MSC.97(73), IMO Res. MSC.191(79), IMO Res. MSC.302(87), IMO MSC.1/Circ.1349

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

This Certificate is valid until **2021-05-01**.

Issued at **Hamburg** on **2020-12-11**

DNV GL local station:
Hamburg CMC



for **DNV GL SE**

Approval Engineer:
Jörg Rebel

Notified Body
No.: **0098**

Christine Mydlak-Roeder
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 European Community and the United States of America on Mutual Recognition of Certificates of Conformity for Marine Equipment", signed February 27th, 2004, and amended by Decision No 1/2018 dated February 18th, 2019.

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 This certificate remains valid unless suspended, withdrawn, recalled or cancelled.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

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV GL AS, its parent companies and subsidiaries as well as their officers, directors and employees ("DNV GL") 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.



Job Id: **344.1-006493-25**
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Product description

CompassNet is a digital multi-compass Heading Management System to operate compasses in a single or multi-compass configuration. The system-internal communication is based on a proprietary Ethernet-based redundant ring-bus architecture. The ring-bus is closed and could only be used by the CompassNet units in the Heading Management System for internal communication and comprises of the following equipment necessary for functioning:

Mastercompass:	NAVIGAT 200	Type: 5026 rev. Hx and Jx
With Gyrosphere:		Type: 4911 rev. Dx or 5000 rev. Dx
And Container Mod. 10/3 or Container Mod. 10/4		Type: 4991-4000 rev. Fx Type: 5026-4000 rev. Cx
Mastercompass:	NAVIGAT 100	Type: 5026-AA rev. Hx and Jx
With Gyrosphere:		Type: 4911 rev. Dx or 5000 rev. Dx
And Container Mod. 10/3 or Container Mod. 10/4		Type: 4991-4000 rev. Fx Type: 5026-4000 rev. Cx
Mastercompass:	NAVIGAT 2200	Type: 5023 rev. Dx
Mastercompass:	NAVIGAT 3000	Type: 5021 rev. Ex

The following units may be used:

Converter and Amplifier Unit	Type: 5018 rev. Hx
Converter and Amplifier Board	Type: 5018-5100 rev. Gx
Data Distribution Unit	Type: 5017 rev. Gx
DDU Processor Module	Type: 5017-2000 rev. Gx
NAVITWIN V	Type: 5019 rev. Dx

The following repeater may be used:

Steering Repeater (console mounted)	Type: 5016-AA rev. Kx
Steering Repeater (console mounted)	Type: 4881 rev. Ex
Steering Repeater (console mounted)	Type: 4881-AA rev. Ex
Steering Repeater (console mounted)	Type: 5016-AB rev. Kx
Steering Repeater (console mounted) (Magnetic, only in connection with NAVITWIN)	Type: 4881-AD rev. Cx

Repeater (bulkhead mounted)	Type: 5016-AC rev. Kx
Repeater (bulkhead mounted)	Type: 4881-AC rev. Dx
Repeater (bulkhead mounted)	Type: 4881-AK rev. Dx
Bearing Repeater	Type: 5016 rev. Lx
Bearing Repeater	Type: 5016-BB rev. Ax
Bearing Repeater	Type: 4881-AB rev. Fx
Bearing Repeater	Type: 4881-AM rev. Dx
with Bearing Repeater Stand	Type: 4622-AB rev. ACx, 4622-AC rev. Fx, 4622-AD rev. Ax
Bearing Repeater Stand (Sperry)	Type: 1812783
Bearing Repeater Bracket	Type: 4890-AB rev. Ex
Bearing Repeater Bracket (height adjustable)	Type: 4905-AB rev. Ax
Terminal Box	Type: 4884-AC rev. Bx
Terminal Box	Type: 4894-AD rev. Bx

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Options:

Gyro Compass	NAVITGAT X MK1	Type: 4914
Gyro Compass	NAVITGAT X MK2	Type: 4991
Gyro Compass	NAVITGAT 2100	Type: 4913
Gyro Compass	NAVITGAT 2200	Type: 5023
Gyro Compass	NAVITGAT 3000	Type: 5021
Compass Monitor	NAVITWIN III	Type: 4923
Heading Management System	NAVITWIN IV	Type: 4994
Voyage Data Printer (only in connection with NAVITWIN)		Type: 4805
Gyro Compass Control Unit		Type: 4926
Fluxgate Coil for Magnetic Compass		Type: 4863

Digital Tape Repeater		Type: DTR 600
Universal Digital Repeater (UDR)		Type: 4891
Multifunction Display	NAVIDATA	Type: 4806-AC
Multifunction Display	NAVIDATA	Type: 4806-AD
Multifunction Display	NAVIDATA	Type: 4806-AE

Switch Over Unit		Type: 4932
RS422 Splitter Box		Type: 4936 or 4992
Optoisolator		Type: 55555
Power Supply		Type: 2568

Software versions:

NAVIGAT 200	Software Version 1.xx
NAVIGAT 100	Software Version 1.xx
NAVIGAT 2200	Software Version 20.x
NAVIGAT 3000	Software Version 10.x
Converter and Amplifier Unit	Software Version 1.xx
Converter and Amplifier Board	Software Version 1.xx
Data Distribution Unit	Software Version 1.xx
DDU Processor Module	Software Version 1.xx
NAVITWIN V	Software Version 1.xx

Note:

Heading Management System NAVITWIN V:

The Heading Management System NAVITWIN V is a central control and display device for multi-compass systems for the maritime navigation of vessels. The functionality includes heading source functionality compliant with the requirements of DNVGL Rules for Ships Pt.6 Ch.3 with regard to distribution of heading information and the following parts are required for compliance:

Data Distribution Unit	Type: 5017
NAVITWIN V	Type: 5019

The CompassNet System offers the possibility to connect other type approved Gyro-Compasses via CAU (Converter and Amplifier Unit) Type:5018 and CAB (Converter and Amplifier Board) Type:5018-5100.

Application/Limitation

Installation to be performed according to the manufacturers Operation, Installation and Service manual. The CompassNet System is examined and found to comply with the standards for interconnections with a Bridge Alert Management System, i.e. IMO resolution MSC.302(87) "Bridge Alert Management" and IEC 61924-2 "Modular structure for INS", Annex K and Annex M.

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Type Examination documentation

Test reports:

5026-0141-07 Rev. B, 5017-0141-03 Rev. B, 5026-0141-02 Rev. B, 5026-0141-01 Rev. A, 5017-0141-01 A1, 5019-0141-01 Rev. B, 5026-0141-04 Rev. A, 5026-0141-05 Rev. A, 002 16 V1U, 003-16-V1U, ECL-EMC-TR-16-042-V1.00, ECL-EMC-TR-16-045-V1.00, 5026-0141-03 Rev. A, 5023-0141-02 Rev. B, ECL-EMC-TR-17-010-V02.00 (IEC 60945 EMC), 5026-0141-08 Rev. B (ISO 16328), TREO 172-17 (ISO 8728, Vibration), 152-20 Issue 2, 005026-0141-26 Rev. C.

Manuals:

Operation, Installation and Service Manual CompassNet System (including NAVIGAT200, NAVIGAT 2200 and NAVIGAT 3000)	056372
Operation, Installation and Service Manual NAVIGAT 100	056373
Operation, Installation and Service Manual Repeater Compass System	056376
Operation, Installation and Service Manual Switch-Over Unit	056318
Operation, Installation and Service Manual NAVITWIN IV	056360
Operation, Installation and Service Manual Universal Digital Repeater	056351

Tests carried out

- Environmental and EMC testing: IEC 60945 (2002) incl. Corrigendum 1 (2008)
- Interface testing: IEC 61162-1 (2016) and IEC 61162-2 (1998)
- Presentation testing: IEC 62288 (2014)
- Performance testing: ISO 16328 (2014)

Note: Further tests passed according to DNVGL Rules for Ships Pt.6 Ch.3 (January 2016), especially: 6.2.3.6 Dual heading input – NAUT(AW) and 6.3.1 Dual compass systems.

Marking of product

According to IEC 60945, Sect.4.9:

The product to be marked with following information, where practicable:

- Identification of the manufacturer,
- Equipment type number or model identification under which it was type tested,
- Serial number of the unit,
- Compass safe distance.

Alternatively, the marking may be presented on a display at equipment start-up, and in case of fixed equipment compass safe distance may be given in the equipment manual.

END OF CERTIFICATE