

EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Certificate No:
MEDB00007M0
Revision No:
2

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

with type designation(s)
NAVIGAT 100

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) 2023/1667,

item No. MED/4.65 SOLAS 74 as amended, V/18, V/19, X/3, IMO Res. MSC.36(63)-(1994 HSC Code) 13, IMO Res. MSC.97(73)-(2000 HSC Code) 13, IMO Res.A.424(XI), IMO Res.A.694(17), A.821(19), IMO Res.MSC.191(79), MSC.302(87), IMO MSC.1/Circ.1349

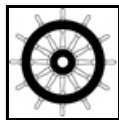
Further details of the equipment and conditions for certification are given overleaf.

This Certificate is valid until **2026-04-29**.

Issued at **Hamburg** on **2023-12-01**

DNV local unit:
Hamburg – CMC North/East

Approval Engineer:
Jörg Rebel



Notified Body
No.: **0098**

for **DNV GL SE**



Digitally Signed By:
Christine Mydlak-Röder
Location: DNV GL SE,
Hamburg, Germany

Christine Mydlak-Röder
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) 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 This certificate remains valid unless suspended, withdrawn, recalled or cancelled.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.

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 AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") 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.



Product description

NAVIGAT 100 is an electronic gyro-compass, that can act as a stand-alone sensor only gyrocompass or may be integrated into a CompassNet Heading Management System by means of a Converter and Amplifier Unit (CAU) or Converter and Amplifier Board (CAB), and comprises of the following equipment necessary for functioning:

Mastercompass: NAVIGAT 100 P/N: 073518-0000-xxx
 with
 Gyrosphere: P/N: 074829-0000-xxx,
 or P/N: 074831-0000-xxx (HSC)
 and
 Gyro Container Mod. 10/4 P/N: 025953-0000-xxx

The following units may be used:

Converter and Amplifier Unit P/N: 074904-0000-xxx
 Converter and Amplifier Board P/N: 025826-0000-xxx
 incl. CAB/CAU Main PCB P/N: 020760-0000-xxx
 Data Distribution Unit (DDU) P/N: 074907-0001-xxx,
 or P/N: 074907-0002-xxx

DDU Processor Module P/N: 025786-0001-xxx,
 or P/N: 025786-0002-xxx

NAVITWIN V P/N: 074902-0000-xxx,
 or P/N: 074902-0001-xxx

The following repeater may be used:

Steering Repeater (console mounted) P/N: 074881-0001-xxx
 Steering Repeater (console mounted) (permanent magnetic heading) P/N: 074882-0001-xxx
 Repeater (bulkhead mounted) P/N: 074883-0001-xxx

Bearing Repeater P/N: 074880-0001-xxx
 Bearing Repeater P/N: 074926-0000-xxx

with
 Bearing Repeater Stand P/N: 074887-0000-xxx, or
 Bearing Repeater Stand P/N: 074911-0000-xxx
 or

Bearing Repeater Bracket P/N: 074886-0000-xxx, or
 Bearing Repeater Bracket (height adjustable) P/N: 074888-0000-xxx

Terminal Box P/N: 074859-0000-xxx

Options:

Universal Digital Repeater (console mounted) P/N: 074833-0000-xxx, or
 Universal Digital Repeater (in Housing with Brackets) P/N: 074834-0000-xxx

with
 Terminal Box P/N: 074837-0000-xxx

Multifunctional NAV Data Repeater P/N: SM-XDI192N
 Multifunctional NAV Data Repeater optional: P/N: SM-XDI144N

Serial I/O Module P/N: SM-XDI-NX1

Serial I/O Module P/N: SM-XDI-NX2

Analogue Extension Module P/N: SM-XDI-AX1

Voyage Data Printer P/N: 074913-0000-xxx

RS422 Splitter Box P/N: 074800-0000-xxx

or P/N: 074850-0000-xxx

Optoisolator P/N: 055555-0000-xxx

Power Supply (input 110/220/380 V AC, output 35 V DC) P/N: 074031-0000-xxx

Power Supply (input 110/220/380 V AC, output 50 V DC) P/N: 074032-0000-xxx

Power Supply (input 110/220/380 V AC, output 70 V DC) P/N: 074033-0000-xxx

Software versions:

NAVIGAT 100 Software Version 2.xxx (xxx ≥ 004) CCU
 Software Version 2.xxx (xxx ≥ 003) CSU

Converter and Amplifier Unit Software Version 2.xxx

Converter and Amplifier Board Software Version 2.xxx

Data Distribution Unit Software Version 2.xxx



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DDU Processor Module
NAVITWIN V

Software Version 2.xxx
Software Version 2.xxx

Note:

Heading Management System CompassNet:

The Heading Management System CompassNet 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 DNV 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 (DDU)	P/N: 074907-0001-xxx, or P/N: 074907-0002-xxx
NAVITWIN V	P/N: 074902-0000-xxx, or P/N: 074902-0001-xxx

The CompassNet system offers the possibility to connect other type approved gyro compasses via

Converter and Amplifier Unit	P/N: 074904-0000-xxx
Converter and Amplifier Board	P/N: 025826-0000-xxx

Application/Limitation

The gyro compass NAVIGAT 100 fulfils the carriage requirements according to 2000 HSC Code, 13.

Installation to be performed according to the manufacturers Operation, Installation and Service manual.

The gyro compass NAVIGAT 100 provides serial alert communication fulfilling the requirements of IEC 62923-1 (2018) and IEC 62923-2 (2018). The gyro compass shall be installed on board associated with an alert display compliant with IEC 60945, IEC 61162 series, IEC 62288, and the relevant requirements of IEC 62923-1/-2.

According to IEC 62923-1 (2018) a back-up shall be provided for this display.

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 8728, ISO 20672), TREO 172-17 (ISO 8728, Vibration), 152-20 Issue 2, 005026-0141-26 Rev. C, 5017-0141-17 Rev. C (IEC 62923-1, IEC 62923-2), 5026-0141-27 Rev. C (K60).

Manuals:

Operation, Installation and Service Manual NAVIGAT 100	056373
Operation, Installation and Service Manual Repeater Compass System	056376
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 (2021)
- Bridge alert management testing: IEC 62923-1 (2018) and IEC 62923-2 (2018)
- Performance testing: ISO 8728 (2014) and ISO 16328 (2014)

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