

EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Certificate No:
MEDB00007M0

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

This is to certify:

That the Gyro compass; Gyro compass for HSC; Rate-of-turn indicator

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) 2020/1170,

**item No. MED/4.3. SOLAS 74 as amended, Regulations V/18, V/19, IMO Res. A.424(XI), IMO Res. A.694(17),
IMO Res. MSC.191(79), IMO Res. MSC.302(87)**

**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**

**item No. MED/4.9. SOLAS 74 as amended, Regulations V/18, V/19 & X/3, IMO Res. A.526(13), IMO Res.
A.694(17), IMO Res. MSC.36(63), IMO Res. MSC.97(73), IMO Res. MSC.191(79), IMO Res. MSC.302(87)**

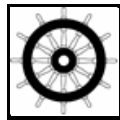
Further details of the equipment and conditions for certification are given overleaf.

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

Issued at **Hamburg** on **2021-08-06**

DNV local station:
Hamburg – CMC North/East

Approval Engineer:
Jörg Rebel



Notified Body
No.: **0098**

for **DNV SE**

**Christine Mydlak-Roeder
Head of Notified Body**

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 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 This certificate remains valid unless suspended, withdrawn, recalled or cancelled.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 system with a Converter and Amplifier Unit (CAU) or Converter and Amplifier Board (CAB), and comprises of the following equipment necessary for functioning:

Mastercompass: with Gyrosphere:	NAVIGAT 100	Type: 5026-AA
		Type: 4911 or 5000
And Container Mod. 10/3 or Container Mod. 10/4		Type: 4991-4000 Type: 5026-4000

The following units may be used:

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

The following repeater may be used when configured as gyro-compass / gyro-compass for high-speed craft (HSC):

Steering repeater (console mounted)		Type: 5016-AA
Steering repeater (console mounted)		Type: 4881
Steering repeater (console mounted)		Type: 4881-AA
Steering repeater (console mounted)		Type: 5016-AB
Steering repeater (console mounted) (Magnetic, only in connection with NAVITWIN)		Type: 4881-AD

Repeater (bulkhead mounted)		Type: 5016-AC
Repeater (bulkhead mounted)		Type: 4881-AC
Repeater (bulkhead mounted)		Type: 4881-AK
Bearing repeater		Type: 5016
Bearing repeater		Type: 5016-BB
Bearing repeater		Type: 4881-AB
Bearing repeater		Type: 4881-AM
with Bearing repeater stand		Type: 4622-AB or 4622-AC or 4622-AD
Bearing repeater stand	(Sperry)	Type: 1812783
Bearing repeater bracket		Type: 4890
Bearing repeater bracket	(height adjustable)	Type: 4905
Terminal box		Type: 4884
Terminal box		Type: 4894

The following indicator may be used when configured as rate-of-turn indicator (ROTI):

Rate-of-Turn Indicator (in housing with bracket)	192 mm	Type 60402	Range +/- 30 °/min.
Rate-of-Turn Indicator (console mounted)	192 mm	Type 60372	Range +/- 30 °/min.
Rate-of-Turn Indicator (console mounted)	192 mm	Type 60421	Range +/- 60 °/min.
Rate-of-Turn Indicator (console mounted)	192 mm	Type 60379	Range +/- 90 °/min.
Rate-of-Turn Indicator (console mounted)	192 mm	Type 60380	Range +/- 300 °/min.
Rate-of-Turn Indicator (console mounted)	144 mm	Type 60368	Range +/- 30 °/min.
Rate-of-Turn Indicator (console mounted)	144 mm	Type 60393	Range +/- 60 °/min.
Rate-of-Turn Indicator (console mounted)	144 mm	Type 60369	Range +/- 90 °/min.
Rate-of-Turn Indicator (console mounted)	144 mm	Type 60370	Range +/- 300 °/min.

Options:

Voyage Data Printer (only in connection with NAVITWIN)		Type: 4805
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 box		Type: 4932

Splitter box
 Optoisolator
 Power Supply

Type: 4936 or 4992
 Type: 55555
 Type: 2568

Software versions:

NAVIGAT 100	Software Version 2.xx
Converter and Amplifier Unit	Software Version 2.xx
Converter and Amplifier Board	Software Version 2.xx
Data Distribution Unit	Software Version 2.xx
DDU Processor Module	Software Version 2.xx
NAVITWIN V	Software Version 2.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 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).

Manuals:

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 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)
- Bridge alert management testing: IEC 62923-1 (2018) and IEC 62923-2 (2018)
- Performance testing: ISO 8728 (2014), ISO 16328 (2014) and ISO 20672 (2007) incl. Corrigendum 1 (2008)



Job Id: **344.1-011696-1**
Certificate No: **MEDB00007M0**

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