

TYPE EXAMINATION CERTIFICATE (MODULE B)

Certificate no.:
MERB000025J
Revision no.:
5

This Certificate is issued by DNV UK Limited, UKAS accredited certification body no. 6086, based on authorisation of the Maritime & Coast Guard Agency (MCA) as an UK Approved Body (no. 0097) to undertake conformity assessments on marine equipment in accordance with the requirements of the Merchant Shipping (Marine Equipment) Regulations 2025.

This is to certify:

that the **Gyro compass**

with type designation(s)

NAVIGAT 100, NAVIGAT 100M, NAVIGAT 200, NAVIGAT 2500 and NAVIGAT 3500

issued to

Sperry Marine B.V. - German Branch
Hamburg, Germany

is found to comply with the Regulation (UK) MSN 1874 Amendment 11 for

Item no. **UK/4.65 (Row 2 of 2)**

according to the following requirements:

For gyro compass: SOLAS 74 Reg. V/19, IMO Res.A.424(XI), IMO Res.A.694(17), IMO Res.MSC.191(79), IMO Res.MSC.302(87), For gyro compass for HSC: IMO Res.A.694(17), IMO Res.A.821(19), IMO Res. MSC.36(63)-(1994 HSC Code) 13, IMO Res. MSC.97(73)-(2000 HSC Code) 13, IMO Res. MSC.191(79), IMO Res. MSC.302(87), IMO MSC.1/Circ.1349, SOLAS 74 Reg. V/18, SOLAS 74 Reg. X/3

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

Date of issue: **2026-01-28**

Expiry date: **2026-04-29**

DNV local unit:
Hamburg – CMC
North/East



Approval Engineer:
Jörg Rebel

for DNV UK Ltd.



Digitally Signed By:
Christine Mydlak-Röder
Christine Mydlak-Röder
MER Service Responsible



UK Approved Body Authorised
by the MCA

This certificate will not be valid if the manufacturer makes any changes or modifications to the approved type of equipment, which have not been notified to, and agreed with the approved body named on this certificate.
During the period of validity of this certificate the applicable regulations (international conventions and the relevant resolutions and circulars of the IMO) and testing standards may change, therefore the product conformity may need to be re-assessed by the Approved 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-control phase module (D, E or F) of Schedule 2 of the Merchant Shipping (Marine Equipment) Regulations 2025, as amended is fully complied with and controlled by a written inspection agreement with an approved body. In case limitations of use apply, these should be indicated in the Annex.

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 USD 300 000.

Product description

Please see Appendix: Product Description

Application/Limitation

- The gyro compass NAVIGAT 100, NAVIGAT 100M, NAVIGAT 200, NAVIGAT 2500 and NAVIGAT 3500 fulfil the carriage requirements according to 2000 HSC Code, 13.
- Installation to be performed according to manufacturer's Operation, Installation and Service manual.
- If no Control and Display Unit is connected, the Compass System must be connected to a Central Alert Management (CAM) system and to a back-up CAM system for alert management.

Type Examination documentation

Please see Appendix: Type Examination Documentation

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) incl. Amendment 1 (2024)
- Bridge alert management testing: IEC 62923-1 (2018) and IEC 62923-2 (2018)
- Performance testing: ISO 8728 (2014) and ISO 16328 (2014)

Note: Further tests passed according to DNV Rules for Ships Pt.6 Ch.3 (July 2022), 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.

APPENDIX

Type Examination documentation

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Document No.	Rev.	Title
152-20	2	Report: TREO, Vibration tests acc. to ISO 8728, Clause 6.10.3
5017-0141-30	A1	Report: NG Sperry Marine, Data gap analysis for NAVIGAT 2500/3500
16-045	01	Report: BV, EMC tests for NAVIGAT 100/200 acc. to IEC 60945, 9 and 10
5019-0141-02	A	Report: Sperry Marine, Tests for NAVITWIN V (P/N 074902-0002-000) acc. to IEC 62288 (2021)
056376	C3	Manual: Operation, Installation and Service of Repeater Compass System
5017-0141-20	A3	Report: NG Sperry Marine, Test summary acc. to IEC 60945, IEC 61162-1/-2 and IEC62288 (2021) for LPC54608
5026-0141-07	B	Report: NG Sperry Marine, Tests for NAVIGAT 100 acc. to IEC 61162-1, B.4.9.2 and B.4.12 for RMC, GGA, GLL and VTG (w/o 1st page)
5019-0141-01	B1	Report: NG Sperry Marine, Tests for CompassNet CDU (5019) acc. to IEC 62288 (2014)
5026-0141-08	B	Report: NG Sperry Marine, Tests for Gyro Container Mod. 10/4 acc. to ISO 8728 (2014), ISO 16328 (2014) and ISO 20672 (2007)
MEDB00008DM	Latest rev.	Certificate: DNV, NAVISTAR
005026-0141-26	C	Report: NG Sperry Marine, Tests acc. to ISO 8728, ISO 20672 and ISO 16328
5017-0141-17	C	Report: NG Sperry Marine, Tests acc. to IEC 62923-1/-2 (2018)
5017-0141-31	A	Report: NG Sperry Marine, Integration tests for NAVIGAT 2500/3500 with CompassNet
002-16	1	Report: TREO, Tests for NAVIGAT 100 acc. to ISO 16328, 6.10.2, 6.10.5 and 6.10.6
5019-0141-03	A	Report: Sperry Marine, Tests for NAVITWIN V (P/N 074902-0002-000) acc. to IEC 60945, IEC 61162-1/-2, IEC 62288 (2021), IEC 62923-1/-2, ISO 8728, ISO 16328 and ISO 20672
056351	D	Manual: Operation, Installation and Service of Universal Digital Repeater
056373	H	Manual: Operation, installation and service of NAVIGAT 100
5017-0141-22	A2	Report: NG Sperry Marine, Software tests acc. to IEC 60945 for LPC54608
5017-0141-29	A1	Report: NG Sperry Marine, Sea trials for NAVIGAT 2500/3500 on MS ROBIN HOOD
16-042	01	Report: BV, EMC tests for CAU (5018) acc. to IEC 60945, 9 and 10
5026-0141-02	B	Report: NG Sperry Marine, Tests for NAVIGAT 100 acc. to ISO 16328 (2014), 6.7
5017-0141-03	B	Report: NG Sperry Marine, Tests for CompassNet acc. to IEC 61162-1/-2 (w/o 1st page)
5017-0141-40	A	Report: Sperry Marine, Tests for integration of NG100 to CompassNet
5017-0141-21	A3	Report: NG Sperry Marine, Interface tests acc. to IEC 61162-1 and IEC 61162 for LPC54608-2 (K60)
5017-0141-28	A	Report: NG Sperry Marine, Test summary for NAVIGAT 2500/3500

5026-0141-07	B	Report: NG Sperry Marine, Tests for NAVIGAT 100 acc. to IEC 61162-1, B.4.9.2 and B.4.12 for RMC, GGA, GLL and VTG (1st page with signatures)
5026-0141-01	A	Report: NG Sperry Marine, Tests for NAVIGAT 100 acc. to ISO 16328 (2014), 6.2 to 6.6
172-17	1	Report: TREO, Tests for NAVIGAT 100 with Container Mod.10/4 acc. to ISO 8728 (2014), 6.10.3.1 and ISO 16328 (2014), 6.10.4.1
5017-0141-39	A	Report: Sperry Marine, Summary of tests for integration of NG100 to CompassNet
5017-0141-24	A	Report: NG Sperry Marine, Regression tests for integration of NAVIGAT 2500/3500 into CompassNet
5026-0141-05	A	Report: NG Sperry Marine, Tests for DDU (5017), CAU (5018), NAVITWIN V (5019) and NAVIGAT 200 acc. to IEC 60945, 11.1
5017-0141-03	B	Report: NG Sperry Marine, Tests for CompassNet acc. to IEC 61162-1/-2 (1st page with signatures)
F250787E1	2025-06-18	Report: Phoenix Testlab, Flicker test for NAVITWIN V (P/N 074902-0002-000) acc. to IEC 62288 (2021), 7.2.3
056417	A	Manual: Installation and service of NAVIGAT 200 / NAVIGAT 100M
5026-0141-27	C	Report: NG Sperry Marine, Tests acc. to test plan 5026-0113-01 Rev. A1 (K60)
5039_5040-0141-06	A	Report: NG Sperry Marine, Tests for NAVIGAT 2500/3500 acc. to ISO 20672 (2022)
5026-0141-04	A	Report: NG Sperry Marine, Tests for DDU (5017), CAU (5018), NAVITWIN V (5019) and NAVIGAT 200 acc. to IEC 60529 (IP 2x)
5017-0141-01	A1	Report: NG Sperry Marine, Tests for alignment of Hexapod table at Woltmannstr. 19, 20097 Hamburg, Germany
17-010	02	Report: BV, EMC tests acc. to IEC 60945, 9 and 10
265-25	1	Report: TREO, Tests for NAVITWIN V (P/N 074902-0002-000) acc. to IEC 60945, 7, 8.2 and 8.4
056416	A	Manual: Installation and service of CompassNet
5039_5040-0141-05	A	Report: NG Sperry Marine, Test summary for NAVIGAT 2500/3500 with hardware modifications
003-16	1	Report: TREO, Tests for DDU (5017), CDU (5019) and CAU (5018) acc. to IEC 60945, 8.2 to 8.4 and 8.7
259-25	1	Report: TREO, Tests for NAVITWIN V (P/N 074902-0002-000) acc. to IEC 60945, 11.2
056374	J	Manual: Operation of NAVIGAT 200 / NAVIGAT 100M
056372	M	Manual: Operation of CompassNet

APPENDIX

Product Description

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NAVIGAT 100, NAVIGAT 100M and NAVIGAT 200 are spinning mass gyro compasses, NAVIGAT 2500 and NAVIGAT 3500 are fiber-optic gyro compasses. All compasses can be installed in single or multi-compass systems.

The following equipment is necessary for functioning:

Mandatory components:

NAVIGAT 100

Mastercompass NAVIGAT 100
with
Gyrosphere:
and
Gyro Container Mod. 10/4

P/N: 073518-0000-xxx
P/N: 074829-0000-xxx
or P/N: 074831-0000-xxx
P/N: 025953-0000-xxx

NAVIGAT 100M

Mastercompass NAVIGAT 100
with
Gyrosphere:
and
Gyro Container Mod. 10/4
and
Ringbus Module
Data Distribution Unit

P/N: 073518-0000-xxx
P/N: 074829-0000-xxx
or P/N: 074831-0000-xxx
P/N: 025953-0000-xxx
P/N: 020771-0000-xxx
P/N: 074907-0001-xxx
or P/N: 074907-0002-xxx

NAVIGAT 200

Mastercompass NAVIGAT 200
with
Gyrosphere:
and
Gyro Container Mod. 10/4
Data Distribution Unit

P/N: 073517-0000-xxx
P/N: 074829-0000-xxx
or P/N: 074831-0000-xxx
P/N: 025953-0000-xxx
P/N: 074907-0001-xxx
or P/N: 074907-0002-xxx

NAVIGAT 2500

Mastercompass NAVIGAT 2500
Data Distribution Unit
Converter and Amplifier Board *

P/N: 073524-0000-xxx
or P/N: 073524-0001-xxx
P/N: 074907-0001-xxx
or P/N: 074907-0002-xxx
P/N: 020760-0000-xxx

NAVIGAT 3500

Mastercompass NAVIGAT 3500
Data Distribution Unit
Converter and Amplifier Board *

P/N: 073525-0000-xxx
or P/N: 073525-0001-xxx
P/N: 074907-0001-xxx
or P/N: 074907-0002-xxx
P/N: 020760-0000-xxx

* Note: Converter and Amplifier Board may be part of the Data Distribution Unit (see above) or of a separate
Converter and Amplifier Unit
P/N: 074904-0000-xxx

Optional components:

Control and Display Unit NAVITWIN V	P/N: 074902-0000-xxx or P/N: 074902-0001-xxx or P/N: 074902-0002-xxx
DDU Processor Module	P/N: 025786-0001-xxx or P/N: 025786-0002-xxx
Fluxgate Coil for Magnetic Compass	P/N: 026026-0000-xxx or P/N: 026085-0000-xxx
RS422 Splitter Box	P/N: 074800-0000-xxx or P/N: 074850-0000-xxx
GNSS Antenna type NAVISTAR 2	P/N: 060461-0000-xxx
Redundancy module	P/N: 060462-0000-xxx
Voyage Data Printer	P/N: 074913-0000-xxx
Opto-isolator	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

Following repeaters 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 with	P/N: 074926-0000-xxx
Bearing Repeater Stand	P/N: 074887-0000-xxx
Bearing Repeater Stand or	P/N: 074911-0000-xxx
Bearing Repeater Bracket	P/N: 074886-0000-xxx
Bearing Repeater Bracket (height adjustable)	or P/N: 074888-0000-xxx
Terminal Box	P/N: 074859-0000-xxx
Universal Digital Repeater (console mounted)	P/N: 074833-0000-xxx
or	
Universal Digital Repeater (in housing with brackets) with	P/N: 074834-0000-xxx
Terminal Box	P/N: 074837-0000-xxx
Multifunctional NAV Data Repeater	P/N: SM-XDI192N
Multifunctional NAV Data Repeater optional with	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

Software versions:

NAVIGAT 100(M)	Version 2.xxx (xxx ≥ 004) CCU Version 3.1xx CSU
NAVIGAT 200	Version 2.xxx (xxx ≥ 004) CCU Version 3.1xx CSU
NAVIGAT 2500 P/N 073524-0000-xxx	Version FW 2.82.x (x ≥ 21)
NAVIGAT 2500 P/N 073524-0001-xxx	Version Pack 20.1.x (x ≥ 4)
NAVIGAT 3500 P/N 073525-0000-xxx	Version FW 2.82.x (x ≥ 21)
NAVIGAT 3500 P/N 073525-0001-xxx	Version Pack 20.1.x (x ≥ 4)
Converter and Amplifier Unit	Version 3.1xx
Converter and Amplifier Board	Version 3.1xx
Data Distribution Unit	Version 3.1xx
DDU Processor Module	Version 3.1xx
NAVITWIN V	Version 3.1xx
GNSS Antenna NAVISTAR 2	Version 1.7.x

Notes:

The Data Distribution Unit (DDU) can manage up to four gyro compasses connected into the CompassNet ring bus and one magnetic compass with dedicated connection to the DDU.

For multi compass systems, a Control and Display Unit NAVITWIN V is required and the DDU must be equipped with one additional DDU Processor Module to provide full system redundancy.

The DDU offers the possibility to connect the NAVISTAR THD-GNSS or any other type approved heading sources using the Converter and Amplifier Unit or Converter and Amplifier Board.

The redundant multi compass system provides heading source functionality and is compliant with the requirements of DNV Rules for Ships Pt.6 Ch.3 regarding distribution of heading information.