EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Certificate no.:
MEDB000025M
Revision no.:
14

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 **Rate-of-turn indicator**

with type designation(s)
NAVIGAT 100, NAVIGAT 100M, NAVIGAT 200, NAVIGAT 2500 and NAVIGAT 3500

issued to
Sperry Marine B.V. - German Branch
Woltmanstr. 19 20097 Hamburg Germany,

is found to comply with the Implementing Regulation **(EU) 2025/1533** for
Item no. **MED/4.9** (Row **2 of 3**)
according to the following requirements:
SOLAS 74 Reg. V/19, IMO Res.A.526(13), IMO Res. A.694(17), IMO Res. MSC.191(79), IMO Res. MSC.302(87), SOLAS 74 Reg. V/18, SOLAS 74 Reg. X/3, IMO Res. MSC.36(63)-(1994 HSC Code) 13, IMO Res. MSC.97(73)-(2000 HSC Code) 13

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

Date of issue: **2026-04-30**

Expiry date: **2031-04-29**

DNV local unit:
Hamburg – CMC North/East

Approval Engineer:
Jörg Rebel

Notified Body
no.: **0098**

for **DNV SE**

Digitally Signed By:
Christine Mydlak-Röder

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), 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 1/2023 dated May 26th, 2023.
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 This certificate remains valid unless suspended, withdrawn, recalled or cancelled.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.

Product description

Please see Appendix: Product Description

Application/Limitation

- The rate-of-turn indicator systems 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.
- According to the Commission Implementing Regulation (EU) 2025/1533, the last date for first installation of the product in its functional position on board an EU ship is 2028-09-23.

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 20672 (2022)

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
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)
5026-0141-27	C	Report: NG Sperry Marine, Tests acc. to test plan 5026-0113-01 Rev. A1 (K60)
5017-0141-20	A3	Report: NG Sperry Marine, Test summary acc. to IEC 60945, IEC 61162-1/-2 and IEC62288 (2021) for LPC54608
5017-0141-21	A3	Report: NG Sperry Marine, Interface tests acc. to IEC 61162-1 and IEC 61162 for LPC54608-2 (K60)
5017-0141-22	A2	Report: NG Sperry Marine, Software tests acc. to IEC 60945 for LPC54608
5039_5040-0141-05	A	Report: NG Sperry Marine, Test summary for NAVIGAT 2500/3500 with hardware modifications
5039_5040-0141-06	A	Report: NG Sperry Marine, Tests for NAVIGAT 2500/3500 acc. to ISO 20672 (2022)
5017-0141-24	A	Report: NG Sperry Marine, Regression tests for integration of NAVIGAT 2500/3500 into CompassNet
5017-0141-28	A	Report: NG Sperry Marine, Test summary for NAVIGAT 2500/3500
5017-0141-29	A1	Report: NG Sperry Marine, Sea trials for NAVIGAT 2500/3500 on MS ROBIN HOOD
5017-0141-30	A1	Report: NG Sperry Marine, Data gap analysis for NAVIGAT 2500/3500
5017-0141-31	A	Report: NG Sperry Marine, Integration tests for NAVIGAT 2500/3500 with CompassNet
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)
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
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)
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)
16-042	01	Report: BV, EMC tests for CAU (5018) acc. to IEC 60945, 9 and 10
16-045	01	Report: BV, EMC tests for NAVIGAT 100/200 acc. to IEC 60945, 9 and 10
002-16	1	Report: TREO, Tests for NAVIGAT 100 acc. to ISO 16328, 6.10.2, 6.10.5 and 6.10.6
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
5017-0141-01	A1	Report: NG Sperry Marine, Tests for alignment of Hexapod table at Woltmannstr. 19, 20097 Hamburg, Germany
5017-0141-03	B	Report: NG Sperry Marine, Tests for CompassNet acc. to IEC 61162-1/-2 (1st page with signatures)

5019-0141-01	B1	Report: NG Sperry Marine, Tests for CompassNet CDU (5019) acc. to IEC 62288 (2014)
5026-0141-01	A	Report: NG Sperry Marine, Tests for NAVIGAT 100 acc. to ISO 16328 (2014), 6.2 to 6.6
5026-0141-02	B	Report: NG Sperry Marine, Tests for NAVIGAT 100 acc. to ISO 16328 (2014), 6.7
5026-0141-03	A	Report: NG Sperry Marine, Tests vor NAVIGAT 200 acc. to ISO 20672, 6.3
17-010	02	Report: BV, EMC tests acc. to IEC 60945, 9 and 10
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)
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
5017-0141-03	B	Report: NG Sperry Marine, Tests for CompassNet acc. to IEC 61162-1/-2 (w/o 1st page)
5019-0141-02	A	Report: Sperry Marine, Tests for NAVITWIN V (P/N 074902-0002-000) acc. to IEC 62288 (2021)
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
5017-0141-39	A	Report: Sperry Marine, Summary of tests for integration of NG100 to CompassNet
5017-0141-40	A	Report: Sperry Marine, Tests for integration of NG100 to CompassNet
056373	H	Manual: Operation, installation and service of NAVIGAT 100
056374	J	Manual: Operation of NAVIGAT 200 / NAVIGAT 100M
056351	D	Manual: Operation, Installation and Service of Universal Digital Repeater
056416	A	Manual: Installation and service of CompassNet
056417	A	Manual: Installation and service of NAVIGAT 200 / NAVIGAT 100M
259-25	1	Report: TREO, Tests for NAVITWIN V (P/N 074902-0002-000) acc. to IEC 60945, 11.2
265-25	1	Report: TREO, Tests for NAVITWIN V (P/N 074902-0002-000) acc. to IEC 60945, 7, 8.2 and 8.4
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
056372	M	Manual: Operation of CompassNet
5017-0141-44	A	Report: Sperry Marine, Tests acc. to approved test plan 5017-0113-08 Rev. 01

APPENDIX
Product Description

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The rate-of-turn indicator systems NAVIGAT 100, NAVIGAT 100M and NAVIGAT 200 are based on spinning mass gyro compasses, NAVIGAT 2500 and NAVIGAT 3500 are based on 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	P/N: 073518-0000-xxx
with	
Gyrosphere:	P/N: 074829-0000-xxx
	or P/N: 074831-0000-xxx
and	
Gyro Container Mod. 10/4	P/N: 025953-0000-xxx

NAVIGAT 100M

Mastercompass NAVIGAT 100	P/N: 073518-0000-xxx
with	
Gyrosphere:	P/N: 074829-0000-xxx
	or P/N: 074831-0000-xxx
and	
Gyro Container Mod. 10/4	P/N: 025953-0000-xxx
and	
Ringbus Module	P/N: 020771-0000-xxx
Data Distribution Unit	P/N: 074907-0001-xxx
	or P/N: 074907-0002-xxx

NAVIGAT 200

Mastercompass NAVIGAT 200	P/N: 073517-0000-xxx
with	
Gyrosphere:	P/N: 074829-0000-xxx
	or P/N: 074831-0000-xxx
and	
Gyro Container Mod. 10/4	P/N: 025953-0000-xxx
Data Distribution Unit	P/N: 074907-0001-xxx
	or P/N: 074907-0002-xxx

NAVIGAT 2500

Mastercompass NAVIGAT 2500	P/N: 073524-0000-xxx
	or P/N: 073524-0001-xxx
Data Distribution Unit	P/N: 074907-0001-xxx
	or P/N: 074907-0002-xxx
Converter and Amplifier Board *	P/N: 020760-0000-xxx

NAVIGAT 3500

Mastercompass NAVIGAT 3500	P/N: 073525-0000-xxx
	or P/N: 073525-0001-xxx
Data Distribution Unit	P/N: 074907-0001-xxx
	or P/N: 074907-0002-xxx
Converter and Amplifier Board *	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

One or more of the following rate-of-turn indicators to be used:

Rate-of-Turn indicator (in housing with bracket)	192 mm	Range ±30 °/min	P/N: 060402-0000-xxx or P/N: 061009-0000-xxx
Rate-of-Turn indicator (console mounted)	192 mm	Range ±30 °/min	P/N: 060372-0000-xxx or P/N: 061010-0000-xxx
Rate-of-Turn indicator (console mounted)	192 mm	Range ±60 °/min	P/N: 060421-0000-xxx or P/N: 061013-0000-xxx
Rate-of-Turn indicator (console mounted)	192 mm	Range ±90 °/min	P/N: 060379-0000-xxx or P/N: 061011-0000-xxx
Rate-of-Turn indicator (console mounted)	192 mm	Range ±300 °/min	P/N: 060380-0000-xxx or P/N: 061012-0000-xxx
Rate-of-Turn indicator (console mounted)	144 mm	Range ±30 °/min	P/N: 060368-0000-xxx or P/N: 061005-0000-xxx
Rate-of-Turn indicator (console mounted)	144 mm	Range ±60 °/min	P/N: 060393-0000-xxx or P/N: 061008-0000-xxx
Rate-of-Turn indicator (console mounted)	144 mm	Range ±90 °/min	P/N: 060369-0000-xxx or P/N: 061006-0000-xxx
Rate-of-Turn indicator (console mounted)	144 mm	Range ±300 °/min	P/N: 060370-0000-xxx or P/N: 061007-0000-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
RS422 Splitter Box	P/N: 074800-0000-xxx or P/N: 074850-0000-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
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)	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	P/N: SM-XDI144N
optional with	
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)	Software Version 3.2.x CCU Software Version 3.2.x CSU
NAVIGAT 200	Software Version 3.2.x CCU Software Version 3.2.x CSU
NAVIGAT 2500 P/N 073524-0000-xxx	Software Version FW 2.82.x (x ⩾ 23)
NAVIGAT 2500 P/N 073524-0001-xxx	Software Version Pack 20.1.x (x ⩾ 4)

NAVIGAT 3500 P/N 073525-0000-xxx	Software Version FW 2.82.x (x ⩾ 23)
NAVIGAT 3500 P/N 073525-0001-xxx	Software Version Pack 20.1.x (x ⩾ 4)
Converter and Amplifier Unit	Software Version 3.2.x
Converter and Amplifier Board	Software Version 3.2.x
Data Distribution Unit	Software Version 3.2.x
DDU Processor Module	Software Version 3.2.x
NAVITWIN V	Software Version 3.2.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.