TYPE EXAMINATION CERTIFICATE (MODULE B)

Certificate no.:
MERB000025J
Revision no.:
4

This Certificate is issued by DNV UK Limited based on authorisation of the Maritime & Coast Guard Agency (MCA) as an UK Approved Body to undertake conformity assessments on marine equipment in accordance with the requirements of the Merchant Shipping (Marine Equipment) Regulations 2016 as amended.

This is to certify:

that the **Gyro compass**

with type designation(s)
NAVIGAT 200, NAVIGAT 2500, NAVIGAT 3500

issued to
Sperry Marine B.V. - German Branch
Hamburg, **Germany**

is found to comply with the Regulation **(UK) MSN 1874 Amendment 10** 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.191(79), IMO Res. MSC.302(87), IMO MSC.1/Circ.1349, 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: **2025-10-13**

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

DNV local unit:
Hamburg – CMC North/East

Approval Engineer:
Jörg Rebel

Approved Body No:: 0097

for **DNV UK Ltd.**

Digitally Signed By:
Christine Mydlak-Röder

Christine Mydlak-Röder
MER Service Responsible

Maritime & Coastguard Agency
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 2016, 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.

Product description

Please see Appendix: Product Description

Application/Limitation

The Heading Management System CompassNet fulfills the carriage requirements according to 2000 HSC Code, 13.
Installation to be performed according to the manufacturers Operation, Installation and Service manual.

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)
- 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

Certificate no.:
MERB000025J
Revision no.:
4

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
056318	A	Manual: Operation, Installation and Service of Switch-Over Unit
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
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
MEDB00008DM	Latest rev.	Certificate: DNV, NAVISTAR
056372	L	Manual: System operation, installation and service - CompassNet
056373	G3	Manual: Operation, Installation and Service of NAVIGAT 100
056376	C3	Manual: Operation, Installation and Service of Repeater Compass System
056351	D	Manual: Operation, Installation and Service of Universal Digital Repeater

APPENDIX
Product Description

Certificate no.:
MERB000025J
Revision no.:
4

The electronic gyro-compasses NAVIGAT 200, NAVIGAT 2500 and NAVIGAT 3500 are connected to the digital multi-compass Heading Management System CompassNet for operating in a single or multi-compass configuration. Up to four (4) gyro-compasses and one (1) magnetic compass can be connected to CompassNet. The system-internal communication is based on a proprietary Ethernet-based redundant ring-bus architecture. The ring-bus is closed and can only be used by the CompassNet units in the Heading Management System for internal communication. The system comprises of the following components:

Mandatory components:

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
and/or		
Mastercompass:	NAVIGAT 2500	P/N: 073524-0000-xxx
		or P/N: 073524-0001-xxx
and/or		
Mastercompass:	NAVIGAT 3500	P/N: 073525-0000-xxx
		or P/N: 073525-0001-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
Converter and Amplifier Unit (CAU)		P/N: 074904-0000-xxx
Converter and Amplifier Board (CAB)		P/N: 025826-0000-xxx
incl. CAB/CAU Main PCB		P/N: 020760-0000-xxx
Note: CAB and CAU not required for NAVIGAT 200		
NAVITWIN V		P/N: 074902-0000-xxx
		or P/N: 074902-0001-xxx
		or P/N: 074902-0002-xxx

Optional components:

NAVIGAT 100	P/N: 073518-0000-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
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
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

Optional repeaters:

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

or		
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
Universal Digital Repeater (in housing with brackets)	or	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 200	Version 2.xxx (xxx ⩾ 004) CCU Version 3.xxx (xxx ⩾ 003) CSU
NAVIGAT 100	Version 2.xxx (xxx ⩾ 004) CCU Version 2.xxx (xxx ⩾ 003) 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)
Data Distribution Unit (DDU)	Version 3.xxx
DDU Processor Module	Version 3.xxx
Converter and Amplifier Unit (CAU)	Version 3.xxx
Converter and Amplifier Board (CAB)	Version 3.xxx
NAVITWIN V	Version 3.xxx
GNSS Antenna NAVISTAR 2	Version 1.7.x

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
	or	P/N: 074902-0002-xxx

The CompassNet system offers the possibility to connect other type approved heading sources via

Converter and Amplifier Unit (CAU)	P/N: 074904-0000-xxx
Converter and Amplifier Board (CAB)	P/N: 025826-0000-xxx
incl. CAB/CAU Main PCB	P/N: 020760-0000-xxx

The NAVISTAR THD system (GNSS method) can be connected to the CompassNet system using the following additional components:

GNSS Antenna type NAVISTAR 2	P/N: 060461-0000-xxx
Redundancy module	P/N: 060462-0000-xxx