

TYPE EXAMINATION CERTIFICATE (MODULE B)

Certificate No:
MERB000025M
Revision No:
0

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 Rate-of-turn indicator (ROTI)

with type designation(s)
CompassNet (Type 5026)

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 **MSN 1874 Amendment 6,**

**item No. UK/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 **London** on **2022-11-15**

DNV local unit:
Hamburg – CMC North/East



for **DNV UK Ltd.**

Approval Engineer:
Jörg Rebel

Approved Body No.: **0097**

Christine Mydlak-Röder
MER Service Responsible



Maritime &
Coastguard
Agency

UK Approved Body Authorised
by the MCA

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. The product liability rests with the manufacturer or his representative in accordance with the Merchant Shipping (Marine Equipment) Regulations 2016.

This certificate is valid for equipment, which is conform to the approved type. The manufacturer shall inform DNV UK Ltd. of any changes to the approved equipment. 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. This certificate remains valid unless suspended, withdrawn, re-called, or cancelled.

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

The Northrop Grumman Sperry Marine rate-of-turn indicator system CompassNet comprises of the following equipment necessary for functioning:

Mastercompass: with Gyrosphere:	NAVIGAT 200	Type: 5026 rev. Hx or Jx	
		Type: 4911 rev. Dx or 5000 rev. Dx	
And Container Mod. 10/3 or Container Mod. 10/4		Type: 4991-4000 rev. Fx Type: 5026-4000 rev. Cx	And/Or
Mastercompass:	NAVIGAT 2500	Type: 5039 rev. Ax or Bx	And/Or
Mastercompass:	NAVIGAT 3000	Type: 5021 rev. Ex	And/Or
Mastercompass:	NAVIGAT 3500	Type: 5040 rev. Ax or Bx	

The following units may be used:

Converter and Amplifier Unit		Type: 5018 rev. Hx	
Converter and Amplifier Board		Type: 5018-5100 rev. Gx	
Data Distribution Unit		Type: 5017-0000 rev. Hx or 5017-0000 rev. Jx	
DDU Processor Module		Type: 5017-2000 rev. Gx or 5017-2000 rev. Hx	
NAVITWIN V		Type: 5019 rev. Dx or 5019 rev. Ex	

The following indicator may be used:

Rate-of-Turn Indicator (in housing with bracket)	192mm	Type: 60402	Range +- 30°/min
Rate-of-Turn Indicator (console mounted)	192mm	Type: 60372	Range +- 30°/min
Rate-of-Turn Indicator (console mounted)	192mm	Type: 60421	Range +- 60°/min
Rate-of-Turn Indicator (console mounted)	192mm	Type: 60379	Range +- 90°/min
Rate-of-Turn Indicator (console mounted)	192mm	Type: 60380	Range +-300°/min
Rate-of-Turn Indicator (console mounted)	144mm	Type: 60368	Range +- 30°/min
Rate-of-Turn Indicator (console mounted)	144mm	Type: 60393	Range +- 60°/min
Rate-of-Turn Indicator (console mounted)	144mm	Type: 60369	Range +- 90°/min
Rate-of-Turn Indicator (console mounted)	144mm	Type: 60370	Range +-300°/min
Terminal box		Type: 4884	
Terminal box		Type: 4894	

Options:

Gyro Compass	NAVIGAT X MK1	Type: 4914	
Gyro Compass	NAVIGAT 100	Type: 5026	
Gyro Compass	NAVIGAT 2100	Type: 4913	
Gyro Compass	NAVIGAT 2200	Type: 5023	
Compass Monitor	NAVITWIN III	Type: 4923	
Heading Management System	NAVITWIN IV	Type: 4994	
Voyage Data Printer (only in connection with NAVITWIN)		Type: 4805	
Gyro Compass Control Unit		Type: 4926	
Fluxgate Coil for Magnetic Compass		Type: 4863	
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 Unit		Type: 4932	
RS422 Splitter Box		Type: 4936 or 4992	
Optoisolator		Type: 55555	
Power Supply		Type: 2568	

Software versions:

NAVIGAT 200	CCU Software Version 2.xxx (xxx ≥ 004)
	CSU Software Version 2.xxx (xxx ≥ 003)

NAVIGAT 100	CCU Software Version 2.xxx (xxx ≥ 004)
	CSU Software Version 2.xxx (xxx ≥ 003)
NAVIGAT 2200	Software Version 20.x
NAVIGAT 2500	Software Version FrmWDSP4_INS_v2_x_y; x_y ≥ 82_21 (DSP)
	FrmWCINT_INS_v5_x_y; x_y ≥ 73_36 (CINT)
	FrmWCINT_AHRS_v7_x_y; x_y ≥ 0_1 (CINT)
NAVIGAT 3000	Software Version 10.x
NAVIGAT 3500	Software Version FrmWDSP4_INS_v2_x_y; x_y ≥ 82_21 (DSP)
	FrmWCINT_INS_v5_x_y; x_y ≥ 73_36 (CINT)
	FrmWCINT_AHRS_v7_x_y; x_y ≥ 0_1 (CINT)
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:

The CompassNet system requires at least one (1) gyro compass to be connected. The CompassNet system offers the possibility to connect up to four (4) gyro compasses in total.

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

The rate-of-turn indicator system CompassNet fulfils 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

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), 5039_5040-0141-02 Rev. A, 00013715 Ed. E, 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), 5017-0141-20 Rev. A3 (LPC54608).

Manuals:

Operation, Installation and Service Manual CompassNet System (including NAVIGAT 200, 2200, 3000, 2500, 3500)	056372 Rev. K
Operation, Installation and Service Manual NAVIGAT 100	056373 Rev. G1
Operation, Installation and Service Manual Repeater Compass System	056376 Rev. C1
Operation, Installation and Service Manual Switch-Over Unit	056318 Rev. A
Operation, Installation and Service Manual NAVITWIN IV	056360 Rev. E
Operation, Installation and Service Manual Universal Digital Repeater	056351 Rev. C

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 20672 (2007) incl. Corrigendum 1 (2008)

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.



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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