

EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

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

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 **(EU) 2015/559,**

Annex A.1, item No. A.1/4.9 and Annex B, Module B in the Directive; SOLAS 74 as amended, Regulation V/18, V/19 & X/3, IMO Resolution A.526(13) & A.694(17), IMO Resolution MSC. 191 (79) and 2000 HSC Code 13

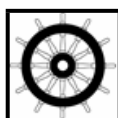
Further details of the equipment and conditions for certification are given overleaf.

This Certificate is valid until **2021-05-01**.

Issued at **Hamburg** on **2016-12-19**

DNV GL local station:
Hamburg

Approval Engineer:
Jörg Rebel



Notified Body
No.: **0098**

for **DNV GL SE**

Sven Dudszus
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.

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 GL 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 This certificate remains valid unless suspended, withdrawn, recalled or cancelled.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.



Job Id:
Certificate No: **MEDB000025M**

Product description

The Northrop Grumman Sperry Marine Rate-Of-Turn Indicator CompassNet comprises of the following equipment necessary for functioning:

Mastercompass:	NAVIGAT 200	Type: 5026
with Gyrosphere:		Type: 4911, 4911-AA or 5000, 5000-AA
And Container Mod. 10/3		Type: 4991-4000
Mastercompass:	NAVIGAT 100	Type: 5026-AA
with Gyrosphere:		Type: 4911, 4911-AA or 5000, 5000-AA
And Container Mod. 10/3		Type: 4991-4000
Mastercompass:	NAVIGAT 2200	Type: 5023
Mastercompass:	NAVIGAT 3000	Type: 5021

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 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	NAVITGAT X MK1	Type: 4914
Gyro Compass	NAVITGAT X MK2	Type: 4991
Gyro Compass	NAVITGAT 2100	Type: 4913
Gyro Compass	NAVITGAT 2200	Type: 5023
Gyro Compass	NAVITGAT 3000	Type: 5021
Compass Monitor	NAVITWIN III	Type: 4923
Heading Management System	NAVITWIN IV	Type: 4994
Voyage Data Printer (only in connection with NAVITWIN)		Type: 4805

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Options (Cont.):

Gyro Compass Control Unit
Fluxgate Coil for Magnetic Compass

Type: 4926
Type: 4863

Digital Tape Repeater
Universal Digital Repeater (UDR)

Type: DTR 600
Type: 4891

Rate-of-Turn Indicator (console mounted)	96mm	Type: 60364	Range +- 30°/min
Rate-of-Turn Indicator (console mounted)	96mm	Type: 60366	Range +- 90°/min
Rate-of-Turn Indicator (console mounted)	96mm	Type: 60367	Range +- 300°/min

Multifunction Display
Multifunction Display
Multifunction Display

NAVIDATA
NAVIDATA
NAVIDATA

Type: 4806 AC
Type: 4806 AD
Type: 4806 AE

Switch over box
Splitter box
Optoisolator
Power Supply

Type: 4932
Type: 4936 or 4992
Type: 55555
Type: 2568

Software versions:

NAVIGAT 200
NAVIGAT 100
NAVIGAT 2200
NAVIGAT 3000
Converter and Amplifier Unit
Converter and Amplifier Board
Data Distribution Unit
DDU Processor Module
NAVITWIN V

Software Version 1.xx
Software Version 1.xx
Software Version 20.x
Software Version 10.x
Software Version 1.xx
Software Version 1.xx
Software Version 1.xx
Software Version 1.xx
Software Version 1.xx

Application/Limitation

Installation to be performed according to the manufacturers Operation, Installation and Service manual.

Type Examination documentation



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Tests carried out

Applicable tests according to ISO 20672 (2007) incl. Corrigendum 1 (2008), IEC 60945 (2002) incl. Corrigendum 1 (2008), IEC 61162-1 (2010), IEC 61162-2 (1998) and IEC 62288 (2014).

Marking of product

According to Article 10 of the Council Directive (MED):

- The wheel mark shall be affixed visibly, legibly and indelibly to the product or to its data plate and, where relevant, embedded in its software. Where that is not possible or not warranted on account of the nature of the product, it shall be affixed to the packaging and to the accompanying documents.
- The wheel mark shall be affixed at the end of the production phase.
- The wheel mark shall be followed by the identification number of the notified body, where that body is involved in the production control phase, and by the year in which the mark is affixed.
- The identification number of the notified body shall be affixed by the body itself or, under its instructions, by the manufacturer or the manufacturer's authorised representative.

For specific products, manufacturers may use an appropriate and reliable form of electronic tag instead of, or in addition to, the wheel mark.

END OF CERTIFICATE