

# 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 Rudder angle indicator**

with type designation(s)

**Rudder Angle Indicator System**

Issued to

**Northrop Grumman Sperry Marine B.V. - German Branch  
Hamburg Hamburg, Germany**

is found to comply with the requirements in the following Regulations/Standards:

Regulation **(EU) 2017/306,**

**item No. MED/4.20. SOLAS 74 as amended, Regulations V/18, V/19 & X/3, 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)**

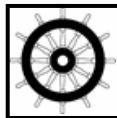
Further details of the equipment and conditions for certification are given overleaf.

This Certificate is valid until **2022-10-12.**

Issued at **Hamburg** on **2017-10-13**

DNV GL local station:  
**Hamburg**

Approval Engineer:  
**Jan Reinecke**



Notified Body  
No.: **0098**

for **DNV GL SE**

.....  
**Sven Dudszus**  
**Head of Notified 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-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 This certificate remains valid unless suspended, withdrawn, recalled or cancelled.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.



## Product description

The Northrop Grumman Sperry Marine B.V. Rudder angle indicator system consists of the following equipment:

Three-face panorama rudder angle indicator, with built-in dimmer, IP23, yellow figures with red/green ribbon on black background, with yellow pointer, for ceiling mounting:

060396-0000-000 Range  $\pm 45^\circ$   
060397-0000-000 Range  $\pm 70^\circ$

Rudder angle indicator in housing with bracket, watertight (IP66), with built-in dimmer, scale 192x192mm, red/green figures on white background, with black pointer, illuminated:

060357-0000-000 Range  $\pm 45^\circ$   
060332-0000-000 Range  $\pm 45^\circ$  (PANAMA TYPE)  
060359-0000-000 Range  $\pm 70^\circ$   
060362-0000-000 Range  $\pm 70^\circ$  (PANAMA TYPE)

Rudder angle indicator in housing with bracket, watertight (IP66), with built-in dimmer, scale 144x144mm, red/green figures on white background, with black pointer, illuminated:

060327-0000-000 Range  $\pm 45^\circ$   
060325-0000-000 Range  $\pm 45^\circ$  (PANAMA TYPE)  
060328-0000-000 Range  $\pm 70^\circ$   
060326-0000-000 Range  $\pm 70^\circ$  (PANAMA TYPE)

Rudder angle indicator for console mounting, frontside IP56, size 192x192mm, yellow figures with red/green ribbon on black background, with yellow pointer, illuminated:

060352-0000-000 Range  $\pm 45^\circ$   
060354-0000-000 Range  $\pm 45^\circ$  (PANAMA TYPE)  
060353-0000-000 Range  $\pm 70^\circ$   
060355-0000-000 Range  $\pm 70^\circ$  (PANAMA TYPE)

Rudder angle indicator for console mounting, frontside IP56, size 144x144mm, yellow figures with red/green ribbon on black background, with yellow pointer, illuminated:

060338-0000-000 Range  $\pm 45^\circ$   
060340-0000-000 Range  $\pm 45^\circ$  (PANAMA TYPE)  
060339-0000-000 Range  $\pm 70^\circ$   
060341-0000-000 Range  $\pm 70^\circ$  (PANAMA TYPE)

Rudder angle indicator for console mounting, frontside IP56, size 96x96mm, yellow figures with red/green ribbon on black background, with yellow pointer, illuminated:

060334-0000-000 Range  $\pm 45^\circ$   
060331-0000-000 Range  $\pm 45^\circ$  (PANAMA TYPE)  
060335-0000-000 Range  $\pm 70^\circ$   
060337-0000-000 Range  $\pm 70^\circ$  (PANAMA TYPE)

Rudder angle calibrator (RAC): Type: 5014, Software Vers. 1.00

Feedback unit: 4136, 4968, 4132, 4134, 4137

## Application/Limitation

None

## Type Examination documentation

### Tests carried out

Applicable tests according to IEC60945(2002) incl. corrigendum 1 (2008), IEC 61162series, ISO20673(2007), IEC62288(2014).

Job Id: **344.1-007063-1**  
Certificate No: **MEDB00002UG**

## **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