

EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Application of: Directive 2014/90/EU of 23 July 2014 on marine equipment (MED), issued as "Forskrift om Skipsutstyr" by the Norwegian Maritime Authority. This Certificate is issued by DNV GL AS under the authority of the Government of Norway.

This is to certify:

That the Rate-of-turn indicator (ROTI)

with type designation(s)
AlphaTurn

Issued to

Alphatron Marine B.V.
Rotterdam, Netherlands

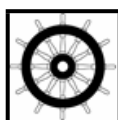
is found to comply with the requirements in the following Regulations/Standards:
Regulation **(EU) 2017/306**,
item No. MED/4.9. SOLAS 74 as amended, Regulations V/18, V/19 & X/3, IMO Res. A.526(13), IMO Res. A.694(17), IMO Res. MSC.36(63), IMO Res. MSC.97(73), IMO Res. MSC.191(79), IMO Res. MSC.302(87)

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

This Certificate is valid until **2022-11-06**.

Issued at **Høvik** on **2017-11-07**

DNV GL local station:
**Rotterdam, Product Certification
/Verification**



for **DNV GL AS**

Approval Engineer:
Frederik Tore Elter

Notified Body
No.: **0575**

Vidar Dolonen
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 United States of America and the EEA EFTA states on the mutual recognition of Certificates of Conformity for Marine Equipment" signed 17 October 2005.

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 This certificate remains valid unless suspended, withdrawn, recalled or cancelled.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

Alphatron Alphaline rate of turn indicator, AlphaTurn with serial NMEA interface to external rate of turn sensor. Rate of turn indication is provided on display type:

Indicator Type Designation	Indicator Item No.	Display Description	Item No.	Location
AlphaTurn MFM	3108.0096 (grey), 3108.0098 (black)	6.5 inch display vertical LCD orientation	3803.0242 (grey), 3803.0244 (black)	Exposed

Application/Limitation

- Installation is to be in accordance to manufacturers product documentation.
- AlphaTurn rate of turn indicator is to be interfaced to a MED approved rate of turn sensor.
- NMEA RS422 to be used for external interface to Alphaline rate of turn indicator.

Type Examination documentation

Tests carried out

- Environmental testing: IEC 60945 (2002)
- Environmental testing: DNVGL-CG-0339
- Interface testing: IEC 61162-1 (2016)
- Performance testing: IEC 62288 (2014)
- Performance testing: ISO 20672 (2007)

Marking of product

- The Manufacturer and Type Designation to be applied to the equipment in a clearly visible location and in addition the equipment shall be marked with serial number, safe distance to magnetic compass, power consumption and/or supply voltage