# EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Certificate No:
**MEDB00007FS**

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

## This is to certify:

**That the Heading control system (HCS) and Heading control system for high speed craft**

with type designation(s)
**AlphaPilot MFS**

Issued to
**Alphatron Marine B.V.**
**Rotterdam**, **Netherlands**

is found to comply with the requirements in the following Regulations/Standards:
Regulation **(EU) 2020/1170,**
**item No. MED/4.16. SOLAS 74 as amended, Regulations V/18 & V/19, IMO Res. A.342(IX), IMO Res. A.694(17), IMO Res. MSC.191(79), IMO Res. MSC.64(67) Annex 3, IMO Res. MSC.302(87)**
**item No. MED/4.40. SOLAS 74 as amended, Regulation X/3, IMO Res. A.694(17), IMO Res. A.822(19), IMO Res. MSC.36(63), IMO Res. MSC.97(73), IMO Res. MSC.191(79), IMO Res. MSC.302(87), IMO MSC.1/Circ.1349**

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

This Certificate is valid until **2026-04-29**.

Issued at **Hamburg** on **2021-04-30**

DNV local station:
**Netherlands CMC**

Approval Engineer:
**Jörg Rebel**

Notified Body
No.: **0098**

for **DNV SE**

**Christine Mydlak-Roeder**
**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, and amended by Decision No 1/2018 dated February 18th, 2019.

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 This certificate remains valid unless suspended, withdrawn, recalled or cancelled.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

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 heading control system (HCS) type AlphaPilot MFS consists of the following components:

| *Description* | *Type designation* | *SW version* |
|---|---|---|
| Autopilot Control Unit | AlphaPilot MFS-VR BK or<br>AlphaPilot MFS-VR GY or<br>AlphaPilot MFS-V BK or<br>AlphaPilot MFS-V GY | V1.xx |
| Autopilot Distribution Unit | AlphaPilot MFS – Distribution Box MK2 | V2.xx |
| Input interfaces | 2 x IEC 61162-1 or -2 Heading (Gyro/THD or magnetic compass) | |
| | 1 x Magnetic heading sensor coil | |
| | 1 x Step heading input | |
| | 2 x Speed (IEC 61162-1 or -2, speedlog) | |
| | 1 x Track control (IEC 61162-1 or -2) | |
| | 1 x draft (4-20 mA) | |
| | 2 x Rudder feedback unit(s) | |
| | 1 x BAM (IEC 61162-1 or -2) | |
| Output interfaces | 1 x VDR/Heading (IEC 61162-1 or -2) | |
| | 1 x BAM (IEC 61162-1 or -2) | |
| | 1 x BNWAS BNC contact | |
| | 2 x “Bang/Bang” rudder controls | |
| | 3 x Analogue (±10V/4-20mA) Rudder/Thruster controls | |
| Power supply | 2 x 18-40 V DC (10 W + 2 W illumination) | |

Optional components:

| *Description* | *Type designation* |
|---|---|
| Rudder feedback unit with limited switches | Rudder Feedback Unit HD |
| Rudder feedback unit | Rudder Feedback Unit MD |
| Linkage transmission for rudder feedback unit | Rudder Feedback Unit LT |
| Chain transmission for rudder feedback unit | Rudder Feedback Unit CT |
| Magnetic heading sensor coil | Alphatron Pick up coil HSC 2 |
| Non follow-up power steer control | NT920 NFU |
| Follow-up power steer control | NT990 FU |
| Heading data interface | NT925 HDI |
| Digital heading repeater display | NT920 DHR/2 |
| Rudder reference unit | NT920 (D)RRU |

## Application/Limitation

- A change-over control from automatic to manual steering shall be provided and located easily accessible to the officer of the watch.
- Arrangements and components for main steering is not part of this approval and need separate certification.
- The track control mode shall only be available when the HCS is part of an approved Track Control System.

## Tests carried out

- Environmental and EMC testing: IEC 60945 (2002) incl. Corrigendum 1 (2008)
- Interface testing: IEC 61162-1 (2016), IEC 61162-2 (1998)
- Presentation testing: IEC 62288 (2014)
- Bridge alert management testing: IEC 62923-1 (2018) and IEC 62923-2 (2018)
- Performance testing: ISO 11674 (2019) and ISO 16329 (2003)

## Type Examination documentation

| DNV No | Document ID | Rev. | Description |
|---|---|---|---|
| 15 | - | 1.3 | Manual: Operation of AlphaPilot MFS |
| 14 | - | 1.4 | Manual: Installation of AlphaPilot MFS |
| 13 | MFS TAR1 | Issue 2 | Report: Navitron, Tests for AlphaPilot MFS acc. to ISO 11674 (2019) |
| 12 | 75936829 Report 01 | Issue 1 | Report: TÜV Süd, Tests for Alphaline Display MFS (NWZ-510SDW) etc. according to IEC60945, Clauses 6.1 to 6.3 and IEC 62288 (except Clause 7.2.3 with Annex G) |
| 11 | 117-323-072 | 2017-05-23 | Report: DELTA, Tests for Alphaline Repeater Display MFS-V according to IEC 62288, Clause 7.2.3 with Annex G |
| 10 | 9505333644XX001 | 2015-04-30 | Report: Thales, Tests for Alphaline Repeater Display MFS-V according to IEC 60945, 6 to 12 (applicable clauses) and 15 |
| 9 | NT888G MK2 TAR1 | Issue 1 | Report: Navitron, Performance tests for NT888G MK2 according to ISO 11674 (2019) |
| 8 | - | 2020-12-18 | Report: Navitron, Alert interface test of NT999G MK2 according to IEC 61162 (2016), B.4.9, to IEC 62923-1/-2 and to ISO 11674 (2019), Annex B |
| 7 | TSTR0802415 | Issue 1.0 | Report: QuinetiQ, Performance tests for NT999G acc. to ISO 11674 (2019) and ISO 16329 (2003) |
| 6 | 75902241 Report 01 | Issue 1 | Report: TÜV SÜD, EMC tests for NT999G acc. to IEC60945, 9 and 10 |
| 4 | 75902241 THC 06 | Issue 1 | Report: TÜV SÜD, Vibration test for NT999G acc. to IEC60945, 8.7 |
| 3 | 75902241 THC 05 | Issue 2 | Report: TÜV SÜD, Damp heat test for NT999G acc. to IEC60945, 8.3 |
| 2 | 75902241 THC 04 | Issue 1 | Report: TÜV SÜD, Low temperature test for NT999G according to IEC60945, 8.4 |
| 1 | 75902241 THC 03 | Issue 1 | Report: TÜV SÜD, Dry heat test for NT999G acc. to IEC60945, 8.2 |

## 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