EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Certificate No:
MEDB00007R2

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 AS under the authority of the Government of Norway.

This is to certify:

That the Transmitting heading device THD (magnetic method)

with type designation(s)
MPC431

Issued to
YDK Technologies Co., Ltd., Morioka Branch
Morioka, Iwate, Japan

is found to comply with the requirements in the following Regulations/Standards:
Regulation **(EU) 2021/1158,**
item No. MED/4.2. 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.116(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 **2027-03-14**.

Issued at **Høvik** on **2022-03-15**

DNV local station:
Yokohama

Approval Engineer:
Tommi Juhani Rifaat

Notified Body
No.: **0575**

for **DNV AS**

Sverre Olav Bergli
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, and amended by Decision No 1/2019 dated February 22nd, 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 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 This certificate remains valid unless suspended, withdrawn, recalled or cancelled.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.

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

MPC431, transmitting heading device THD (magnetic method), consists of following components:

Part Name	Description	Software	Location
MPC431	TMC Display Unit	Version: Axx • PCB: V8122UC • Firmware: V8122ZA	Protected
MGS508	Fluxgate Sensor Unit	Version: vBB11.xx • PCB: SCP-NT2-EDAA1311 • Firmware: SCPNT-PRO	Exposed
MPN031/032	Interconnect Unit	-	Protected

Approved with following standard magnetic compass:

- SAURA KEIKI, SR-165

Compass shall hold a valid type approval certificate.

Application/Limitation

- MPC431 is to be installed in accordance with user's manual
- MPC431 is tested for THD requirements according to 22090-2(2014), expect for use on HCS (High Speed Craft).
- MPC431 Fluxgate Sensor Unit is to be installed together with an adjusted and approved standard magnetic compass as listed in above product description.

Type Examination documentation

DNV No	Drw No	Rev	Title
2	IM 80B92R02-E	05	Manual: YDK, User's Manual MPC431 TMC Display Unit
9	EMC-1E21221-1	00	Report: IPS IEC 60945 EMC, Test Report TMC Display unit and Interconnection unit, MPC431 and MPN032
10	ENV-1E21222-1	00	Report: IPS IEC 60945 ENV, Test Report TMC Display unit and Interconnection unit, MPC431 and MPN032
5	21-280E	00	Report: RIME, IEC 60945 compass safe distance, TMC DISPLAY, INTERCONNECT UNIT MPC431, MPN032
11	YDK-D02-AA-17-037	00	Report: YDK, IEC 60945, IEC 61162-series, IEC 62288, ISO 25867, DNVGL-CG-0339 magnet Compass Repeater MHR113-MAG, MPN032
16	YDK-D02-AA-11-084	2	Report: YDK, MPC430/THD, MGS508, MPN031 test report
15	YDK-D02-AA-21-041	rev. 0	Report: YDK, TRANSMITTING HEADING DEVICE THD (MAGNETIC METHOD) TMC DISPLAY

Tests carried out

- Environmental testing: IEC 60945 (2002) incl. corr. 1 (2008)
- Performance testing: ISO 22090-2 (2014)
- Serial interface testing: IEC 61162-1 (2016) and IEC 61162-2 (1998)
- Presentation of navigation information: IEC 62288 (2014)
- Bridge Alert Management testing: IEC 62923-1 (2018) and IEC 62923-2 (2018)

Marking of product

The name and contact address of the manufacturer and type designation of the product is to be affixed to the equipment in a clearly visible location. In addition the equipment shall be marked with serial number, safe distance to magnetic compass, power consumption and/or supply voltage.