

EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Certificate No:
MEDB00008H3

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 Heading control system (HCS)

with type designation(s)
NT1100

Issued to

Navitron Systems Ltd.
Havant, Hampshire, United Kingdom

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

Regulation (EU) 2023/1667,
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)

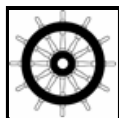
Further details of the equipment and conditions for certification are given overleaf.

This Certificate is valid until **2028-11-19**.

Issued at **Hamburg** on **2023-11-20**

DNV local unit:
UK & Ireland CMC & VMC

Approval Engineer:
Jörg Rebel



Notified Body
No.: **0098**

for **DNV GL SE**

Christine Mydlak-Röder
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) 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. 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 NT1100 consists of the following components:

Description	Type designation	SW version
Autopilot Control Unit	NT1100 CU	V1.xx
Autopilot Distribution Unit	NT999G MK2 DB	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 ($\pm 10V/4-20mA$) Rudder/Thruster controls	
Power supply	2 x 18-40 V DC (10 W + 2 W illum.)	

Optional components:

Description	Type designation
Magnetic heading sensor coil	HSC2
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.

Type Examination documentation

DNV No.	Document ID	Rev.	Description
1	F16252	2023-08-02	Report: Eurofins, EMC tests acc. to IEC 60945, Sects. 9, 10, 11.2
2	75958771-01	02	Report: TÜV Süd, Tests according to IEC 60945, Sects. 8.2 to 8.4 and 8.7
3	75958771-02	01	Report: TÜV Süd, Display tests according to IEC 62288, Sects. 7.2.1, 7.2.3 and 4.4.1
4	NT1100 TAR1	2023-10-18	Report: Navitron, Performance tests according to ISO 11674 (2019)
5	NT1100 BAM1	2023-10-18	Report: Navitron, BAM tests according to IEC 62923-1/-2
6	-	0923/1	Manual: NT1100 Autopilot for installation
7	-	0923/1	Manual: NT1100 Autopilot for operation
9	-	2023-07-27	Statement: Navitron, Waiver according to IEC 60945, 8.12

Tests carried out

- Environmental and EMC testing: IEC 60945 (2002) incl. Corrigendum 1 (2008)
- Interface testing: IEC 61162-1 (2016) and IEC 61162-2 (1998)
- Presentation testing: IEC 62288 (2021)
- Bridge alert management testing: IEC 62923-1 (2018) and IEC 62923-2 (2018)
- Performance testing: ISO 11674 (2019)

Marking of product

According to IEC 60945, Sect.4.9:



Job Id: **344.1-012813-1**
Certificate No: **MEDB00008H3**

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