

EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Certificate no.:
MEDB0000AWW
Revision no.:
0

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 **Track control system (working at ship's speed from minimum manoeuvring speed up to 30 knots)**

with type designation(s)
HiNAS Control

issued to

Avikus Co., Ltd.
Seoul, Korea, Republic of

is found to comply with the Implementing Regulation (EU) 2024/1975 for
Item no. **MED/4.33 (Row 2 of 2)**

according to the following requirements:

**SOLAS 74 Reg. V/19, IMO Res. A.694(17), IMO Res. MSC.74(69), IMO Res. MSC.191(79), IMO Res. MSC.302(87),
SOLAS 74 Reg. V/18**

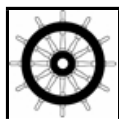
Further details of the equipment and conditions for certification are given overleaf.

Date of issue: **2025-03-25**

Expiry date: **2030-03-24**

DNV local unit:
Seoul, CMC Korea

Approval Engineer:
Roger Lauritsen



for **DNV AS**

Notified Body
no.: **0575**

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), 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 1/2023 dated August 21st, 2023.



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 This certificate remains valid unless suspended, withdrawn, recalled or cancelled.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 USD 300 000.

Product description

HiNAS Control consists of components listed in Annex 1.

Software version: 1.x. Where x is the number 0 or higher

Operating system: Ubuntu x.x.

Please see Appendix: Product Description

Application/Limitation

- The system shall be installed in accordance with the HiNAS Installation Manual
- HiNAS Control may optionally be delivered with speed control. See product description.
- HiNAS Control may optionally be delivered with HiDOM repeater display. See product description.
- HiNAS Control may optionally include additional functionality to increase situation awareness using cameras for detection of objects within the visible range

Type Examination documentation

Tests carried out

TCS performance testing, IEC 62065 (2014)
Environmental testing, IEC 60945 (2002) incl. Corr.1 (2008)
Serial interface testing, IEC 61162-1 (2016), IEC 61162-2 (1998)
Presentation of navigation related information, IEC 62288 (2021)
Bridge Alert Management, IEC 62923-1 (2018), IEC 62923-2 (2018)
Route exchange (RTZ v 1.0 and 1.2), IEC 61174 (2015) Annex S and IEC 61174-1 (2021)
Target association and tracking, IEC 62388 (2013), 11.3.14.7 & 11.8

Marking of product

The type designation and name and contact address of the manufacturer shall be affixed visibly, legibly and indelibly to the product. In addition the product shall be marked with serial number, safe distance to magnetic compass, power consumption and/or supply voltage.

APPENDIX

Product Description

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HiNAS Control consists of following components

Type	Type Designation	Maker	Note/description/limitation	Installation Location
Server	Optiplex XE4 Tower with damping kit TVK-XE4-TV or TVK-XE4-TH	Tetradyne	At least two per installation.	Protected
Client	Optiplex XE4 Tower with damping kit TVK-XE4-TV or TVK-XE4-TH		Optional. In server/client config, two per installation.	Protected
And				
Monitor	TIMX-W270 or,	Tetradyne	System may be installed with two monitors in same installation.	Protected
	TIMX-W320 or,			
	TIMX-UW584 or,			
And;				
Keyboard with trackball	RKTE85B2448-W-MC1	NSI	To be installed with each delivery	Protected
Serial to Ethernet	Nport-5450i	Moxa	Minimum one per installation	Protected
Network switch	EDS-G508E	Moxa	Minimum one per installation	Protected
Firewall	FGR-60F	Fortinet	One per installation	Protected
Selector switch	MPH 731	Yokogawa	One per installation	Protected
Dimmer for	MKD002	Yokogawa	One per installation	Protected
UPS	9SX1000IM or	Eaton	Minimum one UPS per installation.	Protected
	9SX3000IM or			
	9PX1500iRTM or			
	9PX3000iRTM			
And optionally				
Camera unit , incl. EO cameras and IR cameras	HiNAS Navigation	Avikus	Optional	Exposed
Junction box, incl. Single Board Computer				
System to be interfaced with				
Heading Control System	PT900 or	Yokogawa	Minimum one HCS per installation SW version V8225Hv-B08 or higher	Protected
	PR-9000	Tokyo Keiki	Minimum one HCS per installation HCCPU: SW version 2.00 or higher HCIFU: SW version 2.00 or higher ADNCT: SW version 1.12 or higher	
Remote control system	AutoChief 600 or	Kongsberg Maritime	Optional, for speed control SW version 12.16.116 or higher	Protected
	M-800-V	Nabtesco	Optional, for speed control SW version 0.0.13 or higher	
ECDIS	Any	Any	For any ECDIS that support exchange of route on RTZ v.1.0 or	Protected

Type	Type Designation	Maker	Note/description/limitation	Installation Location
			<i>v.1.2 format by use of RRT sentences</i>	
Position sensors	Any	Any	<i>To be approved according to IMO requirements</i>	As applicable
Heading sensor	Any	Any	<i>To be approved according to IMO requirements</i>	As applicable
Speed sensor	Any	Any	<i>To be approved according to IMO requirements</i>	As applicable

The HiDOM option includes repeater functionality that can present following sensor information.

- Time
- Rudder angle
- Rate Of Turn
- Engine or propeller RPM
- Heading
- Course over ground
- Under keel clearance
- Speed over ground
- Speed through water
- Wind direction and speed.