

TYPE EXAMINATION CERTIFICATE (MODULE B)

Certificate no.:
MERB00003AN
Revision no.:
2

This Certificate is issued by DNV UK Limited, UKAS accredited certification body no. 6086, based on authorisation of the Maritime & Coast Guard Agency (MCA) as an UK Approved Body (no. 0097) to undertake conformity assessments on marine equipment in accordance with the requirements of the Merchant Shipping (Marine Equipment) Regulations 2025.

This is to certify:

that the **Rudder angle indicator**

with type designation(s)
DEIF Rudder Angle Indicator System

issued to
DEIF A/S
Frisenborgvej 33
7800 Skive
Denmark,

is found to comply with the Regulation **(UK) MSN 1874 Amendment 11** for
Item no. **UK/4.20 (Row 2 of 2)**

according to the following requirements:

SOLAS 74 Reg. V/19, IMO Res. A.694(17), IMO Res. MSC.191(79), IMO Res. MSC.302(87), SOLAS 74 Reg. V/18, SOLAS 74 Reg. X/3, IMO Res. MSC.36(63)-(1994 HSC Code) 13, IMO Res. MSC.97(73)-(2000 HSC Code) 13

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

Date of issue: **2026-04-10**

Expiry date: **2029-11-26**

DNV local unit:
Denmark CMC



for **DNV UK Ltd.**

Approval Engineer:
Jörg Rebel

Approved Body No.: **0097**

.....
Christine Mydlak-Röder
MER Service Responsible



**Maritime &
Coastguard
Agency**

UK Approved Body Authorised
by the MCA

This certificate will not be valid if the manufacturer makes any changes or modifications to the approved type of equipment, which have not been notified to, and agreed with the approved body named on this certificate.

During the period of validity of this certificate the applicable regulations (international conventions and the relevant resolutions and circulars of the IMO) and testing standards may change, therefore the product conformity may need to be re-assessed by the Approved Body.

"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-control phase module (D, E or F) of Schedule 2 of the Merchant Shipping (Marine Equipment) Regulations 2025, as amended is fully complied with and controlled by a written inspection agreement with an approved body. In case limitations of use apply, these should be indicated in the Annex.

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

The Rudder Angle Indicator System consists of the following equipment:

Analogue system components:

Indicators: XL72, XL96, XL144, XL192, TRI-2, BRW-2, BW144, BW192, XDi96, XDi144, XDi192

Feedback Unit: RT-2, RTA602, RTA800, Sakae SFSCB30A, Sakae FSCB30AG, Volvo Penta IPS 3

Interface Unit: DC/DC Amplifier: TDG-210, WAGO 857-409, AX1 analogue module

CAN system components:

Indicators: XL72, XL96, XL144, XL192, BRW-2, BW144, BW192, TRI-2 CAN, XDi96, XDi144, XDi192

Feedback Units: Contelec Vert-X 515x CANopen/Vert-X 37 CANopen, FSG MH620-II/MU, Dr. Horn EDG 50.42/72, RTC300, RTC600, RTC800

Optional: XDi extension modules AX1 analogue, DX1 digital, NX1/NX2 serial

Software versions: XDi D & M platform 1: 1.0x.x and XDi D, M & N platform 2: 2.0x.x,
AX1 Modul: 1.0x.x,
DX1 Modul: 1.0x.x,
NX1/NX2 Modul: 1.0x.x

Application/Limitation

- WAGO 857-409 Amplifier not to be used in locations of bridge and open decks

Type Examination documentation

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) incl. Amendment 1 (2024)
- Performance testing: ISO 20673 (2022)

Note: The DEIF Rudder Angle Indicator System does not issue alerts, hence, testing according to IEC 62923-1/-2 is deemed as not being applicable.

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.