

# EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

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 Propeller revolution indicator

with type designation(s)

**Dv48S, Dv72S, Dv96S, Dv144S, D3v48S, D3v72S, D3v96S, D3v144S, D3v192S, Dv48S/66, Dv72S/66, Dv96S/66, Dv144S/66, D3v48S/66, D3v72S/66, D3v96S/66, D3v144S/66, D3v192S/66, Including Signal Correction Box (SCB-V2)**

Issued to

**Wabtec Netherlands B.V.**  
**Ede Gld, Gelderland, Netherlands**

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

Regulation **(EU) 2020/1170,**

**item No. MED/4.21. 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.191(79), IMO Res. MSC.302(87)**

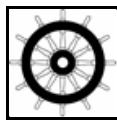
Further details of the equipment and conditions for certification are given overleaf.

This Certificate is valid until **2026-02-01.**

Issued at **Hamburg** on **2021-02-02**

DNV GL local station:  
**Netherlands CMC**

Approval Engineer:  
**Jörg Rebel**



Notified Body  
No.: **0098**

for **DNV GL 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 GL 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 GL AS, its parent companies and subsidiaries as well as their officers, directors and employees ("DNV GL") 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 analogue propeller revolution indicators type Dv..S, D3v..S, Dv..S/66 and D3v..S/66 with moving coil mechanism have following specifications:

Dimension [mm]	48x48, 72x72, 96x96, 144x144, 192x192 (only D3v..S)
Protection degree (housing)	IP 54 or IP 66 (with suffix /66)
Rotation range	90° (Dv..S) or 240° (D3v..S)
Input signal	0/4 – 20 mA or 0 – 10/12 V DC or ±10/±12 V DC
Power supply	24 V DC (18 – 31.2 V DC) (24 V AC/DC for opt. illumination*)

\* Illumination not available for Dv48S and D3v48S

The Signal Correction Box type SCB-V2 has following specification:

Variants	SCB-V2
Protection degree (housing)	IP 20
Input signal	0/4 – 20 mA or 0 – 10 V DC or ±10 V DC
Output signal	10 x 0 – 10 V DC / ±10 V DC
Power supply	24 V DC (18 – 31.2 V DC)

Note: 1. The propeller revolution transmitter as part of the propeller revolution indicator system is to be connected to the Signal Correction Box, which ensures correct calibration and linearization of the analogue propeller revolution signal.

2. The propeller revolution transmitter is to be type-approved.

## Application/Limitation

None

## Tests carried out

- Environmental and EMC testing: IEC 60945 (2002) incl. Corrigendum 1 (2008)
- Presentation testing: IEC 62288 (2014)
- Performance testing: ISO 20554 (2015)

Note: The propeller revolution indicators type Dv..S, D3v..S, Dv..S/66 and D3v..S/66 do not issue alerts, hence, testing according to IEC 62923-1/-2 is deemed as not being applicable.

The above mentioned propeller revolution indicators have no interfaces according to IEC 61162 series, thus, testing according to IEC 61162 series is deemed as not being applicable, as well.

## 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.

## Type Examination documentation

DNV GL No	Document ID	Rev.	Description
72	561144220.HAN	2014-04-24	Manual: Signal Calibration Box V2.1
71	590	2009-03-24	Report: BSH, Compass Safe Distance test for SCB
70	08C01168RPT01	2009-03-05	Report: DARE, Environmental tests (dry heat, damp heat, cold, insulation resistance) for SCB acc. to LR TSN 1 (2002)
69	09C00099RPT01	2009-02-10	Report: DARE, EMC tests for SCB acc. to LR TSN 1 (2002)
68	M09.001-2009.7002	2009-02-04	Report: Sebert, Vibration test for SCB acc. to LR TSN 1 (2002)
67	-	2009-03-20	Report: Nieaf-Smitt, Results of internal tests for SCB-V according to LR TSN 1 (2002)
60	20210001BRF01	2021-01-07	DARE, Comments on EMC test reports for Dv/D3v, RCI-400 and S4v indicators
58	-	2021-01-07	Report: Wabtec NL, Explanation of vibration test on indicators Dv/D3v and S4v
43	-	2020-12-28	Report: Wabtec NL, Review of low temperature test results for Dv..S and D3v..S
42	-	2020-12-23	Wabtec NL, Analysis of compliance with ISO 22554 (2015) for analogue indicators
41	-	2020-12-23	Report: Wabtec NL, Analysis of compliance with IEC 62288 (2014) for analogue indicators
40	4209289.TER	2010-08-05	Report: Nieaf-Smitt, Performance tests for SCB acc. to ISO 20672, ISO 20673, ISO 22554 and ISO 22555
39	12C01035RPT01	2012-10-05	Report: DARE, EMC tests for D3v192S acc. to LR TSN 1 (2002)
38	50651328-KPS/MEC 06-8115	2006-02-14	Report: KEMA, Corrosion (salt-mist) test for housings BCI-xx-1 and NOA-170 I / II with D(3)vxxS/66 according to LR TSN 1 (2002)
37	2079118.58 QUA/ESG	2005-01-14	Report: KEMA, Enclosure test for NOA-170-II housing according to IEC60529 for IP66
36	2079118.51 QUA/ESG	2005-01-14	Report: KEMA, Enclosure test for Dv72S/66 according to IEC60529 for IP66
35	2079118.50 QUA/ESG	2005-01-14	Report: KEMA, Enclosure test for Dv48S/66 according to IEC60529 for IP66
34	2079118.61 QUA/ESG	2005-01-14	Report: KEMA, Enclosure test for D3v192S/66 according to IEC60529 for IP66
33	2079118.60 QUA/ESG	2005-01-14	Report: KEMA, Enclosure test for D3v144S/66 according to IEC60529 for IP66
32	2079118.59 QUA/ESG	2005-01-14	Report: KEMA, Enclosure test for D3v96S/66 according to IEC60529 for IP66
31	2079118.54 QUA/ESG	2005-01-14	Report: KEMA, Enclosure test for BCI-192-1 housing according to IEC60529 for IP66
30	2079118.53 QUA/ESG	2005-01-14	Report: KEMA, Enclosure test for BCI-144-1 housing according to IEC60529 for IP66

Job Id: **344.1-011277-1**  
Certificate No: **MEDB0000796**

<b>DNV GL No</b>	<b>Document ID</b>	<b>Rev.</b>	<b>Description</b>
29	2079118.52 QUA/ESG	2005-01-14	Report: KEMA, Enclosure test for BCI-96-1 housing according to IEC60529 for IP66
28	2079118.56- QUA/ESG	2005-01-14	Report: KEMA, Enclosure test for D3v144S according to IEC60529 for IP54
27	310 / 1	2004-02-06	Report: BSH, Compass Safe Distance certificate for Dv..S and D3v..S including housings BCI-xxx and NOA xxx
24	9505 000 181XX	2003-10-03	Report: Thales, Vibration test acc. to LR TSN 1 (2002) for D3v144S/AMP and D3v192S/AMP
23	9505 000 186XX	2003-10-13	Report: Thales, Humidity, dry heat and low temperature test acc. to LR TSN 1 (2002) for D3v144S/AMP and D3v192S(/AMP)
22	4209032.TER	2003-10-20	Report: Nieaf-Smitt, Performance tests for D3v192S according to LR TA 2002 and MED
21	4209031.TER	2003-10-20	Report: Nieaf-Smitt, Performance tests for D3v144S according to LR TA 2002 and MED
20	02C01127RPT01	2003-06-30	Report: DARE, EMC tests acc. to LR TSN 1 (2002) for D3v192S/AMP
15	310	2001-01-12	Report: BSH, Compass Safe Distance certificate for Dv..S and D3v..S
14	10038346.rep	1998-04-27	Report: NMI, Vibration, humidity & dry heat test for Dv..S, Ev..S and D3v..S acc. to LR TSN 1 (1996)
9	4209019.TER	1998-05-28	Report: Nieaf-Smitt, Test results acc. to LR TA system (1996) for D3v144S
8	4209018.TER	1998-05-28	Report: Nieaf-Smitt, Test results acc. to LR TA system (1996) for D3v96S
7	4209017.TER	1998-05-28	Report: Nieaf-Smitt, Test results acc. to LR TA system (1996) for D3v72S
6	4209016.TER	1998-05-28	Report: Nieaf-Smitt, Test results acc. to LR TA system (1996) for D3v48S
5	4209015.TER	1998-05-28	Report: Nieaf-Smitt, Test results acc. to LR TA system (1996) for Dv144S
4	4209014.TER	1998-05-28	Report: Nieaf-Smitt, Test results acc. to LR TA system (1996) for Dv96S
3	4209013.TER	1998-05-28	Report: Nieaf-Smitt, Test results acc. to LR TA system (1996) for Dv72S
2	4209012.TER	1998-05-28	Report: Nieaf-Smitt, Test results acc. to LR TA system (1996) for Dv48S

END OF CERTIFICATE