DNV·GL

Certificate No:
**MEDB00002ZH**

# 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 Voyage data recorder (VDR)**

with type designation(s)
**VDR 4370**

Issued to
**Wärtsilä SAM Electronics GmbH**
**Hamburg, Germany**

is found to comply with the requirements in the following Regulations/Standards:
Regulation **(EU) 2017/306,**
**item No. MED/4.29. SOLAS 74 as amended, Regulations V/18, V/20 & 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), IMO Res. MSC.333(90)**

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

This Certificate is valid until **2023-01-28**.

Issued at **Hamburg** on **2018-01-29**

DNV GL local station:
**Hamburg**

Approval Engineer:
**Jörg Rebel**

Notified Body
No.: **0098**

for **DNV GL SE**

**Sven Dudszus**
**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.

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 This certificate remains valid unless suspended, withdrawn, recalled or cancelled.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

## Product description

The voyage data recorder (VDR) type 4370 consists of following components necessary for operation:

| | |
|---|---|
| • Main Unit MDP2020 | H204xxxx<br>Software version 5.2x |
| • Interface Control Unit | H205xxxx |
| • Battery Module | H605xxxx |
| • Audio Unit Audio2net | H402xxxx |
| • Microphone VCA004 | H604xxxx |
| • Serial Unit NMEA2net | H401xxxx |
| • Data Collection Unit | WAGO-DCU |
| • Data Collection Unit | DCU 2010 |
| • Data Collection Unit | DPU 2020 |
| • VDR Remote Control and Test Panel NACOS Platinum MFD with Display Electronics | GE 3068<br>Software version 2.1.xx.yy<br>(xx≥03, yy≥07) |
| • Final Recording Medium FRM Fixed Capsule NEMO 2.0 | H108xxxx |
| • Final Recording Medium FRM Float Free Capsule TRON 40VDR | H109xxxx |
| • Underwater locating device (ULD) | PT9-NINETY |
| • RADAR / ECDIS video grab via network transmission (1 of the following options): | |
| ○ External RGB Frame Grabber FGR4 | H305xxxx |
| ○ External Frame Grabber FGR5 | H307xxxx |
| ○ RADAR video grab with Radar device<br>image transfer according IEC 61162-450<br>image transfer according IEC 62388 Ed.2, Annex H.4 | |

Optional Components:

| | |
|---|---|
| • Long Term Recording Device | H110xxxx |
| • USB Flash Drive | H105xxxx |
| • MOXA Network Switch | EDS-308 |
| • MOXA Network Switch | EDS-208A-X1-X2-X3 |
| • Power Supply | Quint-PS/1AC/24VDC/10 |
| • Realtime Monitor | VDR 4370 Online |
| • Replay System | VDR 4370 Replay System |

## Application/Limitation

| | | | |
|---|---|---|---|
| RADAR video grab with Radar device | Type | RADARPILOT 1000 | (GE3044) |
| | | CHARTRADAR 1000 | (GE3044) |
| | | MULTIPILOT 1000 | (GE3048) |
| | | RADARPILOT 1100 | (GE3062) |
| | | CHARTRADAR 1100 | (GE3064) |
| | | MULTIPILOT 1100 | (GE3065) |
| | | NACOS Platinum | (GE 3068) |

For standard installation no own switch is provided. The VDR only has a separate network interface, reserved for multicast communication and connection to an existing multicast network.
If an optional network switch is necessary because only single sources without own multicast network has to be connected, a network switch (MOXA EDS) without multicast filtering techniques is available. All network switches used for the VDR installation are to be compliant with the requirements of IEC 60945

## Type Examination documentation

| DNV GL No | Document ID | Rev. | Description |
|---|---|---|---|
| 1 | BSH/4543/001/4292510/13 | 2014-10-21 | Report: Performance test IEC61996-1 |
| 2 | BSH/4543/001/4292510/13-1 | 2014-10-21 | Report: Tests acc. to IEC 60945, Sects.6, 11.1, 13-15 |
| 3 | BSH/4543/001/4292510/13-2 | 2014-10-21 | Report: Tests acc. to IEC 62288 (2014), Sects. 4 and 7 |
| 4 | BSH/4543/001/4292510/13-3 | 2014-10-21 | Report: Tests acc. to IEC 62388 (2013), Annex H.4 |
| 5 | BSH/4542/002/0192929/15 | 2015-05-21 | Report: Tests for framegrabber type FGR5 acc. to IEC 62388 (2013), Sects.5.8 to 5.10, 6.2.4 |
| 6 | BSH/4543/001/4293043/16 | 2016-07-26 | Report: Tests acc. to IEC 61162-450 (2011) |
| 7 | BSH/4542/002/0062586/14 | 2014-05-09 | Statement of Conformity for NEMO 2.0 |
| 8 | - | 1.0, 2014-02-28 | Report: Climate test for NEMO 2.0 |
| 9 | TP-TR50-9209 | 2013-08-14 | Report: Shock test for NEMO 2.0 |
| 10 | 2219512KAU-001 | 2013-07-29 | Report: EMC test for NEMO 2.0 |
| 11 | 657 | 2010-04-29 | Certificate: Compass Safe Distance for NEMO |
| 12 | Extension of 657 | 2013-11-20 | Certificate: Compass Safe Distance for NEMO 2.0 |
| 13 | MED-B-14251 | 2014-06-19 | Certificate: EC Type Examination for Tron 40VDR |
| 14 | E13261.04 | 04, 2014-06-26 | Report: Tests acc. to IEC 61097-2 (2008), IEC 60945 and IEC 61996-1 (2013) for Tron 40VDR |
| 15 | E13261.06 | 06, 2015-03-03 | Report: Tests acc. to IEC 61097-2 (2008), IEC 60945 and IEC 61996-1 (2013) for Tron 40VDR |
| 16 | BSH/4542/002/0062585/14 | 2014-04-14 | Report: Internal assessment for PT9 NINETY |
| 17 | 05951 00 | 2013-08-06 | Report: Environmental test for PT9 NINETY |
| 19 | 1750281R-ITCEP16V00 | V1.0, 2017-06-06 | Report: EMC tests for MOXA switch EDS-208A-X1-X2-X3 |
| 20 | 9065 17 20791 157 | 2017-12-14 | Report: Performance test for VDR 4370 acc. to IEC 61996-1 (2013) |
| 25 | 814009155 | V01b, 2018-01-24 | Manual: Technical Manual VDR 4370 |
| 26 | 814009157 | V01, 2017-12-07 | Manual: Replay Manual VDR 4370 |
| 27 | 814009156 | V01, 2017-12-07 | Manual: Authority Manual VDR 4370 |
| 28 | 390008810 | 26, 2017-12-20 | Manual: Pages 309 to 334 about VDR from Operating Instructions for ECDISPILOT Platinum Vers. 2.x |
| 29 | ANC-D-0000-0087 | 01, 2017-12-15 | Manual: VDR LAN Interface 4370 - Software System Interface Description |

## Tests carried out

- Performance testing: IEC 61996-1 (2013) and IEC 62338 (2013, Annex H.4
- Environmental testing: IEC 60945 (2002) incl. Corrigendum 1 (2008)
- Serial interface testing: IEC 61162-1 (2010 and 2016), IEC 61162-2 (1998) and IEC 61162-450 (2011)
- Presentation of navigational information: IEC 62288 (2014)

## Marking of product

According to Article 10 of the Council Directive (MED):

- The wheel mark shall be affixed visibly, legibly and indelibly to the product or to its data plate and, where relevant, embedded in its software. Where that is not possible or not warranted on account of the nature of the product, it shall be affixed to the packaging and to the accompanying documents.
- The wheel mark shall be affixed at the end of the production phase.
- The wheel mark shall be followed by the identification number of the notified body, where that body is involved in the production control phase, and by the year in which the mark is affixed.
- The identification number of the notified body shall be affixed by the body itself or, under its instructions, by the manufacturer or the manufacturer's authorised representative.

For specific products, manufacturers may use an appropriate and reliable form of electronic tag instead of, or in addition to, the wheel mark.

END OF CERTIFICATE