

EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Certificate No:
MEDB00008JA

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 Water level detectors

with type designation(s)
RDHL-D - Water Level Detection System

Issued to

Shanghai Rongde Engineering Equipment Co., Ltd.
Shanghai, China

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

Regulation (EU) 2022/1157,
item No. MED/8.1. SOLAS 74 as amended, Regulation II-1/22-1, II-1/25 & XII/12, IMO Res. MSC.188(79), IMO Res. A.1021(26) and IMO MSC.1/Circ.1572, Rev 1.

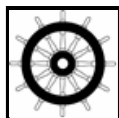
Further details of the equipment and conditions for certification are given overleaf.

This Certificate is valid until **2025-08-15**.

Issued at **Hamburg** on **2023-08-23**

DNV local unit:
Shanghai

Approval Engineer:
Martin Skårerverket



Notified Body
No.: **0098**

for **DNV GL SE**

Christine Mydlak-Roeder
Head of Notified 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-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 This certificate remains valid unless suspended, withdrawn, recalled or cancelled.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 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

Water Level Detection System for cargo hold water ingress alarm system on bulk carriers and single hold cargo ships consists of two parts:

Water level detectors and alarm/display units (alarm panels).

Detecting method:

Direct means: level switch, pressure transducer

Indirect means: purge pipe (air source, electro-pneumatic measurement and pressure transducer)

Alarm and display unit types:

RDBJ: Binary Alarm Unit (for float level switch)

RDCP and RDCP-b: Analog alarm unit (for pressure transducer or purge pipe detector)

Power supply: Main power 220 V AC/110 V AC 50 Hz/60 Hz, spare power 24 V DC

Protection: IP22

Alarm function: Pre-alarm, main alarm, power failure alarm, sensor failure alarm

Water level detector types:

RDHL-B2-S Series: Float magnetic level switch.

Output signal: Contact signal (with loop resistor)

Protection: IP68 (0.25 MPa/20 days),

RDLY-S: Pressure sensor for water level

Power voltage: 24 V DC

Measure range: 0 ... 40 kPa (0 ... 4 m)

Output signal: 4 ... 20 mA

Protection: IP68 (0.25 MPa/20 days)

Application/Limitation

Ex-certification is not covered by this certificate. Application in hazardous area to be approved in each case according to the Rules and Ex-Certification/ Special Condition for Safe Use listed in valid Ex-certificate issued by a notified/recognized Certification Body.

The RDHL-D - Water Level Detection System is designed and approved for use on bulk carriers and single hold cargo ships, ref. IMO Resolution MSC.188(79). Application according to IMO MSC.1/Circ.1291 has not been considered and is not covered by this certificate.

The equipment is found to comply with following location/application dependent requirements (for definition of each of the location classes, see below the table):

EQUIPMENT	TEMPERATURE	VIBRATION	EMC	ENCLOSURE
Alarm and display units	TEM-D	VIB-A	EMC-B	IP22
Water level detectors	TEM-D	VIB-A	EMC-B	IP68

Definition of the location classes with reference to relevant standards:

- Temperature: TEM-D – Location (-25°C to 70°C) (ref. IEC 60092-504:2016 table 1 item 6-7)
- Vibration: VIB-A – For general applications (ref. IEC 60092-504:2016 table 1 item 10)
- EMC: EMC-B – Bridge and deck zone (ref. IEC 60092-504:2016 table 1 item 13-20)
- Enclosure: IP68, IP22 (ref. IEC 60529 Edition 2.2:2013)

Type Examination documentation

Tests carried out

The system was tested according to the following standards:

- IEC 60092-504:2016,
- IEC 60529 Ed. 2.2:2013 incl. Corr1:2013 and Corr2:2015,
- IMO Res. MSC.188(79).

Testing according to IMO MSC.1/Circ.1291 is not considered relevant as this system is not intended to be used for flood detection on passenger vessels.

Marking of product

The Manufacturer and Type Designation to be applied to the equipment in a clearly visible location. In addition the equipment shall be marked with serial number, safe distance to magnetic compass, power consumption and/ or supply voltage.

For identification to this type examination certificate the products shall be marked with:

- Manufacturer's name or trade mark
- Type designation
- Mark of Conformity (wheel mark), followed by
 - identification number of the NoBo involved in production control (MED D)
 - the year the mark is affixed
 - Example: 0098/2023