Certificate No: LR25165946TA
Issue Date: 12/02/2025
Expiry Date: 11/02/2030

Type Approval Certificate

This is to certify that the undernoted product(s) has/have been tested with satisfactory results in accordance with the relevant requirements of the Lloyd's Register Type Approval System.

Manufacturer	**Shanghai Rongde Engineering Equipment Co., Ltd.**
Address	Room 1401, No.1 - 1695, Pudong Avenue, Shanghai, 200135, China
Place of Production	Shanghai Rongde Engineering Equipment Co., Ltd No. 268, Yangyue Road, Nanqiao Town, Fengxian District, Shanghai City, 201499, China
Type	Fire And Gas Detection Alarm And Control Systems
Description	RDQJ-1 type of Hydrocarbon Gas Detection and Alarm System comprises of - RDQJ-1 Alarm Panel （Including Extension Alarm panel） Power Supply: AC 220/110V, 50/60Hz and 24V DC, IP22 Zener safe barrier: installed in alarm panel, type: RDAQ-3, [Ex ia]II C Hydrocarbon Gas Detectors RDKR-1: Output signal: 4~20 mA, Detection range: 0-100%LEL Working Voltage: DC24V , IP54, Ex ia II C T4, Ga RDKR-2 : Output signal: 4~20 mA, Detection range: 0-100%LEL Working Voltage: DC24V , IP54, Ex d ia II C T4 Gb Pump Room Visual Alarm Device : BBJ-ZR Power supply: DC24V, IP code: IP44, Ex d Ⅱ B T6 Pump Room Audio Alarm Device : QF-68 working air source: 0.7MPa, Audio level: 85-120dB/1m RDQJ-2 type of Fixed Hydrocarbon Gas Detection and Alarm System comprises of - Alarm Panel(Including Extension Alarm panel) -Alarm settings: 10% LEL for each sampling line; 25% LEL in gas analysis cabinet; -Detection points: ≤120 lines;

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Ashwinikumar Mhamal

Electrical & Control Technical Manager - Africa, Middle East & India to Lloyd's Register Marine and Offshore India LLP

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(no more than 6 Detection panels, 20 lines for each);
-Power Supply: Main and Backup AC220V, 50/60Hz
-Protection: IP22
Detection Panel
-Air source pressure: 0.7MPa;
-The largest detection points: 20 lines;
-Detection targets: Flammability gases in the air;
-Detection method: Suction-type sampling;
-Internal working pressure (Sample pump): -40kPa;
-Cleaning air pressure for gas detector: 50kPa;
-Flushing air pressure for Sample pipes: 0.7MPa;
-Power Supply: 24V DC;
-Protection: IP44 (Air source cabinet and control cabinet);
(Gas analysis cabinet: gas-tighter structure);
Zener safe barrier: installed in control panel, type: RDAQ-3, [Ex ia]II C
Hydrocarbon Gas Detectors
RDKR-1: Output signal: 4~20 mA, Detection range: 0-100%LEL
Working Voltage: DC24V , IP54, Ex ia II C T4, Ga
RDKR-2 : Output signal: 4~20 mA, Detection range: 0-100%LEL
Working Voltage: DC24V , IP54, Ex d ia II C T4 Gb

Trade Name RDQJ-1 and RDQJ-2

Application Marine applications for use in environmental categories, ENV2(Bridge and deck zone) as defined in LR Type Approval Test Specification No. 1 July 2024.

Specified Standard Manufacture's Technical Specification (Doc. No. RDBZ317-2013 for RDQJ-1 type and Doc. No. RDBZ327-2013 for RDQJ-2 type)
RDQJ-2: FSS Code-Fire Safety Systems Chapter 16
RDQJ-2: IMO MSC.1/Circ.1370(22 June 2010)

Additional Tests 1. Enclosure tests (IEC 60529) for RDQJ-1 Hydrocarbon Gas Detection and Alarm System alarm panel, extension alarm panel, pump room visual alarm

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device.
2. Flame retardant test (IEC60695-11-5) for RDQJ-1 Hydrocarbon Gas Detection and Alarm System.
3. Performance tests for RDKR-1 and RDKR-2 types of gas detectors as per IEC 60079-29-1: 2007, modified, where applicable.
4. Dry Heat Test.

Other Conditions

1. For the purposes of Type Approval, the system is regarded as a composite product. A single certificate is issued for the product range, which will not grant or imply approval of the components in any other application. Hydrocarbon gas detectors are to be type approved separately.
2. The application and installation of the system on specific LR classed ships shall be approved and complied with LR Rules and Regulations for the Classification of Ships.

This certificate is not valid for equipment, the design, ratings or operating parameters of which have been varied from the specimen tested. The manufacturer should notify Lloyd's Register Marine and Offshore India LLP of any modification or changes to the equipment in order to obtain a valid Certificate.

Previous Version: LR2004219TA

The Design Appraisal Document TSO-25-030697-E-01 and its supplementary Type Approval Terms and Conditions form part of this Certificate.

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