FAK-ARMATUREN GmbH

Confirmation of Product Type Approval

Company Name: RKMC CO.,LTD.

Address: BUILDING 23, KECHENG SCIENCE SOUTH PARK, NO.19 LANHUA ROAD, PUKOU, NANJING NANJING China

Product: Level Indicator, Tank Gauging Station (Valve)

Model(s): RKMC-VRCS & LMS

Endorsements:

Certificate Type	Certificate Number	Issue Date	Expiry Date
Product Design Assessment (PDA)	24-0162158-PDA	13-DEC-2024	12-DEC-2029
Manufacturing Assessment (MA)	21-5043983	03-DEC-2021	02-DEC-2026
Product Quality Assurance (PQA)	NA	NA	NA

Tier
3 - Type Approved, unit certification not required

Intended Service
Valve Remote Control System and Level Gauging System for Marine and Offshore Applications

Description
The valve remote control and level measuring system is composed of control unit, acquisition unit, UPS, alarm unit, actuator, safety grid, hydraulic power unit, solenoid valve box, peripheral sensor and sound and light alarm. It is used to monitor cargo tank level, cargo tank high/high alarm, cargo tank pressure alarm, cargo pump bearing temperature alarm, cargo tank temperature alarm, cargo pump/machinery room sewage well high alarm, cargo pump inlet/outlet pressure alarm, remote operation to open or close the valve and real-time monitoring valve opening and closing state.

Detailed system component, please refer to Attachment-Technical Specification.

Ratings
Power Source: AC220V, 50/60Hz, DC24V

Working pressure: 6~13.5 MPa

Working Temperature: 5~55 #

Software version: RKMC V 1.0

Service Restrictions
1. Unit Certification is not required for this product. If the manufacturer or purchaser request an ABS Certificate for compliance with a specification or standard, the specification or standard, including inspection standards and tolerances, must be clearly defined.

Comments
1. The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.

2. Each actuator is to be affixed with a permanent nameplate or marking bearing the manufacturer's name or trademark and the maximum allowable working pressure and temperature.

3. Where device and components are placed in hazardous area, the evidence of the approved intrinsically safe barrier and the markings showing the components are certified for hazardous classification are to be verified.

4. For tank level gauging systems, cables are not to be installed in bilge or tanktop area unless protected from bilge water. Cables are not to be installed in water tanks, oil tanks, cargo tanks, ballast tanks or any liquid tanks except to supply equipment and instrumentations specifically designed for such locations and whose functions require it to be installed in the tank. Where this cannot be avoided, special measures are to be made for effective protection of cables. See also 4-8-4/21.1.9 and 4-8-4/21.15 of MVR. See 4-8-4/21.1.2 of MVR.

5. Hydraulic accumulators of extruded seamless construction are to be designed, manufactured and tested in accordance with a recognized standard. The acceptance will be based on their compliance with the standard as verified by attending Surveyor. See 4-6-7/3.5.4 of MVR.

6. Remote control valves of ballast water system are to be clearly identified as to the tanks they serve and are to be provided with position indicators at the ballast control station. See 4-6-4/7.5.2 of MVR.

7. The subject system is assigned to the appropriate computer-based system Category II.

8. Details of each particular application including wiring diagram, location/installation of sensors are to be specifically approved by ABS.

Notes, Drawings and Documentation
Drawing No. RKMC-VRCS&LMS-003, RKMC-VRCS&LMS-003_1.2_User Manual for VRCS&LMS, Revision: 1.2, Pages:

Drawing No. Reference CCS Certificate, Reference CCS Certificate, Revision: -, Pages:

Drawing No. VRCS & LMS FOR ABS-TA, RKMC-VRCS&LMS documents FOR ABS V1.2, Revision: V1.2, Pages:

Drawing No. Reference1, Reference 6357419-A Prototype Testing Report, Revision: -, Pages:

Drawing No. Test Report, 5120297_Valve Remote Control & Level Measuring Test Report, Revision: -, Pages:

Drawing No. Software Documents, Software Documents, Revision: -, Pages:

Drawing No. RKMC-VRCS&LMS-001, RKMC-VRCS&LMS-001_1.1_TECHNICAL SPECIFICATION, Revision: 1.1, Pages:

Drawing No. RKMC-VRCS&LMS-004, RKMC-VRCS&LMS-004_1.1_Installation and Operating Manual, Revision: 1.1, Pages:

Drawing No. RKMC-VRCS&LMS-005, RKMC-VRCS&LMS-005_1.1_Software Manual, Revision: 1.1, Pages:

Drawing No. Test Schedule, TYPE APPROVAL TEST SCHEDULE_V 1.2, Revision: 1.2, Pages:

Drawing No. RKMC-VRCS&LMS-002, RKMC-VRCS&LMS-002_1.3_Component list, Revision: 1.3, Pages:

Term of Validity
This Product Design Assessment (PDA) Certificate remains valid until 12/Dec/2029 or until the Rules and/or Standards used in the assessment are revised or until there is a design modification warranting design reassessment (whichever occurs first).

Acceptance of product is limited to the "Intended Service" details prescribed in the certificate and as per applicable Rules and Standards.

This Certificate is valid for installation of the listed product on ABS units which exist or are under contract for construction on or previous to the effective date of the ABS Rules and standards applied at the time of PDA issuance. Use of the Product for non-ABS units is subject to agreement between the manufacturer and intended client.

ABS Rules
2024 Rules for Conditions of Classification, Part 1: 1A-1-4/7.7, 1A-1-A3, 1A-1-A4, which covers the following:

2024 Marine Vessels Rules: 4-6-4/7.5.2, 4-6-4/11.7, 4-8-4/21.1.2, 4-9-3/15 Table 3, 4-9-9/3, 4-9-9/13.1, 4-9-9/Table 1.

2024 Rules for Conditions of Classification - Offshore Units and Structures , Part 1: 1B-1-4/9.7, 1B-1-A2, 1B-1-A3, which covers the following:

2024 Mobile Offshore Units Rules: 4-2-3/3.7, 4-2-4/11.5, 4-2-6/3.11

International Standards
IACS UR E10, Rev.8: 2021

EU-MED Standards
NA

National Standards
NA

Government Standards
NA

Other Standards
NA

Corporate ABS Programs
American Bureau of Shipping
Print Date and Time: 17-Dec-2024 1:16

ABS has used due diligence in the preparation of this certificate, and it represents the information on the product in the ABS Records as of the date and time the certificate is printed.

If the Rules and/or standards used in the PDA evaluation are revised or if there is a design modification (whichever occurs first), a PDA revalidation may be necessary.

The continued validity of the MA is dependent on completion of satisfactory audits as required by the ABS Rules. The validity of

both PDA and MA entitles the product to receive a **Confirmation of Product Type Approval**.

Acceptance of product is limited to the “Intended Service” details prescribed in the certificate and as per applicable Rules and Standards.

This Certificate is valid for installation of the listed product on ABS units which exist or are under contract for construction on or prior to the effective date of the ABS Rules and standards applied at the time of PDA issuance. ABS makes no representations regarding Type Approval of the Product for use on vessels, MODUs or facilities built after the date of the ABS Rules used for this evaluation.

Type Approval requires Drawing Assessment, Prototype Testing and assessment of the manufacturer's quality assurance and quality control arrangements. The manufacturer is responsible to maintain compliance with all specifications applicable to the product design assessment. Unless specifically indicated in the description of the product, certification under type approval does not waive requirements for witnessed inspection or additional survey for product use on a vessel, MODU or facility intended to be ABS classed or that is presently in class with ABS.

Due to wide variety of specifications used in the products ABS has evaluated for Type Approval, it is part of our contract that; whether the standard is an ABS Rule or a non-ABS Rule, the Client has full responsibility for continued compliance with the standard.

Questions regarding the validity of ABS Rules or the need for supplemental testing or inspection of such products should, in all cases, be addressed to ABS.