



CERTIFICATE NUMBER
15-BK1451901-PDA

DATE
14 Dec 2015

ABS TECHNICAL OFFICE
Busan Engineering Services

CERTIFICATE OF DESIGN ASSESSMENT

This is to certify that a representative of this Bureau did, at the request of
SEWHACNM CO., LTD.

assess design plans and data for the below listed product. This assessment is a representation by the Bureau as to the degree of compliance the design exhibits with applicable sections of the Rules. This assessment does not waive unit certification or classification procedures required by ABS Rules for products to be installed in ABS classed vessels or facilities. This certificate, by itself, does not reflect that the product is Type Approved. The scope and limitations of this assessment are detailed on the pages attached to this certificate.

Product: **Control System and Motor Controller for Steering Gear**

Model: **KS81F, KS81A, KS73A-EMI-COM, KS73A-EMI-JS&DP**

This Product Design Assessment (PDA) Certificate 15-BK1451901-PDA, dated 14/Dec/2015 remains valid until 13/Dec/2020 or until the Rules or specifications used in the assessment are revised (whichever occurs first).

This PDA is intended for a product to be installed on an ABS classed vessel, MODU or facility which is in existence or under contract for construction on the date of the ABS Rules or specifications used to evaluate the Product.

Use of the Product on an ABS classed vessel, MODU or facility which is contracted after the validity date of the ABS Rules and specifications used to evaluate the Product, will require re-evaluation of the PDA.

Use of the Product for non ABS classed vessels, MODUs or facilities is to be to an agreement between the manufacturer and intended client.

AMERICAN BUREAU OF SHIPPING

Hyun-Dae Lee
Engineer/Consultant

NOTE: This certificate evidences compliance with one or more of the Rules, Guides, standards or other criteria of ABS or a statutory, industrial or manufacturer's standards. It is issued solely for the use of ABS, its committees, its clients or other authorized entities. Any significant changes to the aforementioned product without approval from ABS will result in this certificate becoming null and void. This certificate is governed by the terms and conditions as contained in ABS Rules 1-1-A/3/5.9 Terms and Conditions of the Request for Product Type Approval and Agreement (2010).

SEWHACNM CO.

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Tier: 2 - PDA Issued

Product: Control System and Motor Controller for Steering Gear

Model: KS81F, KS81A, KS73A-EMI-COM, KS73A-EMI-JS&DP

Intended Service:

Steering gear control system for vessels less than 500 GT having a length less than 90 meters which have rule-required upper rudder stock diameter less than 230 mm (9 in.)

Description:

This products are steering gear control system consists of Steering Panels (KS81F, KS81A) and Steering Interface Units (KS73A-EMI-COM, KS73A-EMI-JS&DP) in the navigational bridge.

Rating:

Steering Panel in Forward Control Console

- a) Model no.: KS81F
- b) Input power: 24VDC
- c) Operating temperature: +5~70 degree C
- d) Input: 12ea
- e) Output: 18ea (relay output)
- f) Interface: CAN bus
- g) Enclosure: IP22

Steering Panel in After Control Console

- a) Model no.: KS81A
- b) Input power: 24VDC
- c) Operating temperature: +5~70 degree C
- d) Interface: CAN bus
- e) Enclosure: IP22

Steering Interface Unit

- a) Model no.: KS73A-EMI-COM / KS73A-EMI-JS&DP
- b) Input power: 24VDC
- c) Operating temperature: +5~70 degree C
- d) Display: 7 segment FND, 6 Digits, 0.351 inch
- e) Input: 8ea
- f) Output: 4ea (relay output) / 1ea (4~20mA)
- g) Interface: CAN bus
- h) Enclosure: IP22

Service Restriction:

- a) Unit Certification is not required for this product.
- b) 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:

- a) Application and use are to be in accordance with the manufacturer's instructions.
- b) The manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.

Notes/Drawing/Documentation:

This Product Design Assessment is based on as follows:

- a) Manufacturer's type approval document (incl. description of product, technical specification)
- b) Manufacturer's drawing no. S-KS81-F-E001, S-KS-SYS-E001, S-KS81-A-E001, S-KS73-C-E001 and others

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c) Manufacturer's instruction manual for KS73A, EIM-COM and EIM-JS&DP

d) Manufacturer's test report no. KS81F&81A_ST201502 witnessed by ABS Surveyor (SE2966796)

e) Recognized testing laboratory's test report no. R159R-D051 and E150R-D009

Terms of Validity:

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STANDARDS

ABS Rules:

2015 Steel Vessels Under 90 Meters (295 Feet) in Length 1-1-4/7.7, 1-1/A3, 1-1/A4, 4-3-3/1 & 11, 4-7-2/Table 1

National:

NA

International:

NA

Government:

NA

EUMED:

NA

OTHERS:

NA