



CERTIFICATE NUMBER 19-1897004-PDA-DUP
EFFECTIVE DATE 22-April-2020
EXPIRATION DATE 26-September-2024
ABS TECHNICAL OFFICE CN Shanghai ESD

CERTIFICATE OF

Product Design Assessment

This is to certify that a representative of this Bureau did, at the request of

KONGSBERG MARITIME CHINA LTD.

located at

**No.6 Building, 555 ChuanQiao Road, JinQiao Export and Processing
Zone, PuDong District, Shanghai, China, 201206**

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 Level Gauging System

Model GL-300

This Product Design Assessment (PDA) Certificate remains valid until 26 September 2024 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.

American Bureau of Shipping

Bin-Hong Wang, Director

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 ABS Rules 1-1-A3/5.9 Terms and Conditions of the Request for Product Type Approval and Agreement (2010)

KONGSBERG MARITIME CHINA LTD.
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Email: kmcs.project@km.kongsberg.com
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Tier: 3 - Type Approved, unit certification not required

Product: Level Gauging System, automatic

Model: GL-300

Intended Service:

Tank gauging and temperature measurement systems used on oil, product & chemical, including Asphalt and Bitumen tankers, LNG & LPG carriers and offshore installations.

Description:

GL-300 is a tank monitoring system mainly consisting of Radar Tank Gauge GLA-300 (RTG), Cargo Temperature Unit GC-300 (CTU) and Signal Processing Unit GLK-300 (SPU).

Each tank is equipped with one RTG and one CTU in hazardous area connected to the SPU in safe areas.

An inert gas pressure transmitter is also integrated in the RTG that serves as a connection box for CTU.

The system can be configured up to 60 SPUs and the processed data in SPU containing tank level, cargo temperature and the inert gas pressure can be accessed through Ethernet in order to form an integrated tank monitoring and control systems such as K-Gauge/K-Chief.

There are 4 variants of RTG. These are GLA-300/P, GLA-300/HS, GLA-300/H and GLA-300 Asphalt.

Rating:

Power supply: 24V DC (18V to 32V)

Safety Certificates:

GLK-300: Presafe 14 ATEX 5412 X - Ex II (1) G [Ex ia Ga] IIB/IIC Ta: -15C to 70 degree C and IECEx PRE 14.0053X - [Ex ia Ga] IIC Ta: -15C to 70 degree C;

GLA-300: IECEx SIR 14.0025X - Ex II 1G Ex ia IIC T4 Ta: -45C<Ta<85 degree C;

GC-300: IECEx SIR 14.0024X - Ex II 1G Ex ia IIC T4 Ta: -45C to 85 degree C and SIRA 14 ATEX 2054X - Ex II 1 G Ex ia IIC T4 Ta: -45C to 85 degree C;

GLA-300: IECEx SIR 14.0025X - Ex ia IIC T4 Ta: -45C to 85 degree C(-45C to 85 degree C when fitted with GLH-320) and SIRA 14 ATEX 2056X - Ex II 1 G Ex ia IIC T4 Ta: -45C to 85 degree C(-45C to 85 degree C when fitted with GLH-320);

GT406: IECEx NEM 12.0008X - Ex ia IIC T5 Ta: -45C to 85 degree C and NEMKO 02 ATEX 119X - Ex II 1G Ex ia IIC T5 Ta: -45C to 85 degree C.

Service Restriction:

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.

2. ATEX certified equipment is not to be installed in hazardous areas on U.S. Flagged Vessels, unless it can be proven to have been tested to the IEC 60079 series standards by an independent laboratory accepted by the U.S. Coast Guard. USCG MI Notice 01-12 (February 7, 2012).

Comments:

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

2. This assessment is valid to hardware only. Each application and configuration is to be specifically approved.

3. GL-300 is assigned Category II as defined at 4-9-3/7.1 of the 2019 Steel Vessels and Marine Vessels Rules.

Accordingly, documentation is to be maintained and made available to ABS on request and witness testing by an ABS Surveyor is to be carried out as detailed in 4-9-3/Table 2 of the 2019 Steel Vessels and Marine Vessels Rules.

Notes/Drawing/Documentation:

Drawing No. GLH-320 Radar Electronic Unit 436580, Revision: A, Pages: 2;

Drawing No. GC-300 Cargo Temperature Unit P-GC300/CE, Revision: J, Pages: 2;

Drawing No. GLA300/P Radar Tank Gauge for Oil, Product and Chemical Tankers P-GLA300/CE, Revision: E, Pages: 2;

Drawing No. GLA300/H Radar Tank Gauge for Chemical, Asphalt and Bitumen Tankers P-GLA300H/CE, Revision: E, Pages: 2;

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Drawing No. GLA300/HS Radar Tank Gauge for Standpipe Applications P-GLA300HS/CE, Revision: D, Pages: 2;
Drawing No. GT406 Pressure Transmitter P-GT406/CE, Revision: C, Pages: 2;
Drawing No. GT406-GLA Pressure Transmitter P-GT406GLA/CE, Revision: A, Pages: 2;
Drawing No. SW revision history, Revision: J, Pages: 7;
Drawing No. E17118.00 NEMKO Environment Test Report, dated 22 Sep 2017.

Terms of Validity:

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STANDARDS

ABS Rules:

Rules for Conditions of Classification, Part 1 - 2019: 1-1-4/7.7, 1-1-A3, 1-1-A4, which covers the following:
Rules for Building and Classing Marine Vessels (2019): 4-9-9/13
Rules for Building and Classing Steel Vessels (2019): 4-9-8/13
Rules for Building and Classing Steel Vessels Under 90 Meters (295 feet) in Length (2019): 4-7-1/5.39
Rules for Building and Classing Offshore Support Vessels (2019): 4-9-8/13

Rules for Conditions of Classification, Part 1 - 2019 Offshore Units and Structures 1-1-4/9.7, 1-1-A2, 1-1-A3, which covers the following:
Rules for Building and Classing Mobile Offshore Units (2019): 4-2-3/3, 4-3-1/15, 4-3-1/17
Rules for Building and Classing Mobile Offshore Drilling Units (2019): 4-2-3/3, 4-3-1/15, 4-3-1/17
Rules for Facilities on Offshore Installations (2019)

National:

NA

International:

IACS UR E10 (2014)
IEC 60092-504: 2016
IEC 60079-0: 2011
IEC 60079-11: 2011
IEC 60079-26: 2006

Government:

NA

EUMED:

NA

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OTHERS:

NA