



CERTIFICATE NUMBER 23-2404183-PDA
EFFECTIVE DATE 05-Jun-2023
EXPIRY DATE 04-Jun-2028
ABS TECHNICAL OFFICE London Engineering Department

CERTIFICATE OF Product Design Assessment

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

KONGSBERG MARITIME AS, TRONDHEIM

located at

**SKONNERTVEGEN 1, 7053 RANHEIM, P.O. BOX 2434 ,
TRONDHEIM, Norway, 7005**

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, automatic
Model: GL-300
Endorsements:
Tier: 3 - Type Approved, unit certification not required

This Product Design Assessment (PDA) Certificate remains valid until 04/Jun/2028 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

mohammed abbas

Mohammed K.M. Abbas, 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 ABS Rules 1-1-A3/5.9 Terms and Conditions of the Request for Product Type Approval and Agreement (2010)

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Tier: 3 - Type Approved, unit certification not required

Product: Level Gauging System, automatic

Model: GL-300

Endorsements:

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 or GLA-310/5 (RTG), Cargo Temperature Unit GC-300 or GC-306 (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 5 variants of RTG. These are GLA-300/P, GLA-300/HS, GLA-300/H, GLA-300 Asphalt and GLA-310/5.

Rating:

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

Safety Certificates:

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

GC-300/GC-306: IECEx SIR 14.0024X - Ex II 1G Ex ia IIC T4 Ga: -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/GLA-310: IECEx SIR 14.0025X - Ex ia IIC T4 Ga: -45C to 85 degree C (-45C to 80 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 80 degree C when fitted with GLH-320);

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 2023 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 2023 Marine Vessels Rules.

Notes/Drawing/Documentation:

Drawing No. 371645, GC-306 Data Sheet, Revision: D, Pages: 2

Drawing No. 383758, GLA-310/5 Data Sheet, Revision: F, Pages: 2

Drawing No. 394663, GLA-310/5-G LNG Fuel Data Sheet, Revision: E, Pages: 2

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

Drawing No. 442205, GLA-310/5 Dual Data Sheet, Revision: E, Pages: 2

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

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

Drawing No. GLA300/HS Radar Tank Gauge for Standpipe Applications P-GLA300HS/CE, Revision: E, Pages: 2; Support Documentation from previous review:

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

Drawing No. 411509, GLA-310/5-NH3 Data Sheet, Revision: B, Pages: 2

Drawing No. 435445, GLA-310/5-LH2 Data Sheet, Revision: B, Pages: 2

Drawing No. E.16236.00 Nemko test report, dated 14-Nov-2016

Drawing No. 443392, Vibration statement for GLA-310/5 Dual, Revision: A, dated 25-Oct-2018, issued by Kongsberg

Drawing No. 443414, Vibration test report, Revision: A, dated 23-Nov-2018, issued by Kongsberg

Drawing No. E13227.00, Nemko test report, dated 02-Oct-2013

Drawing No. 394855, K-Gauge GL-300 based multifunction system with dual radar, Revision: B, Pages: 1

Drawing No. IECEx 14.0053X issue 2, dated 18-Nov-2010, IECEx Certificate of Conformity, issued by DNV GK Presafe AS

Drawing No. Presafe 14 ATEX 5412 X issue 3, dated 18-Nov-2020, DNV-GL EU-Type Examination Certificate

Drawing No. IECEx 20.0103X issue 0, dated 25-Nov-2020, IECEx Certificate of Conformity, issued by DNV GL Presafe AS

Drawing No. Presafe 20 ATEX 08383X issue 0, dated 25-Nov-2020, DNV-GL EU-Type Examination Certificate

Drawing No. E17118.00 NEMKO Environment Test Report, Location: Nemko Group, Norway, Date: 22 Sep 2017, Revision:-, Pages: 56.

Terms of Validity:

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STANDARDS**ABS Rules:**

2023 Rules for Conditions of Classification: 1-1-4/7.7, 1-1-A3, 1-1-A4, which covers the following:

2023 Rules for Building and Classing Marine Vessels: 4-9-9/13

2023 Rules for Conditions of Classification, Offshore Units and Structures: 1-1-4/9.7, 1-1-A2, 1-1-A3, which covers the following:

2023 Rules for Building and Classing Mobile Offshore Units: 4-2-3/3, 4-3-1/15, 4-3-1/17

2023 Rules for Facilities on Offshore Installations: 3-7/3

National:

NA

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International:

IACS UR E10 Revision 8: 2023

IEC 60092-504: 2016

IEC 60079-0: 2017

Government:

NA

EUMED:

NA

OTHERS:

NA