



CERTIFICATE NUMBER
EFFECTIVE DATE
EXPIRY DATE
ABS TECHNICAL OFFICE

23-00T2404183-1-PDA
06-Mar-2026
04-Jun-2028
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

Peter Edward (Peter Deegan) Lewis
Deegan,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 Level gauging and temperature measurement systems used on oil, product & chemical, including Asphalt and Bitumen tankers, Liquefied Gas Carriers, FSRU and offshore installations.

Description:

GL-300 is a Cargo monitoring system 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) or Tank Controller Unit (TCU) and Radar Communication Module(RCM).

Each tank is typically equipped with one RTG and one CTU in hazardous area connected to the SPU or TCU/RCM in safe areas.

A tank vapour pressure transmitter is integrated in the GLA-300 RTG which also serves as a connection box for the CTU signal cable.

The processed data in SPU and TCU/RCM containing tank level, cargo temperature and the tank vapour pressure. There are 5 variants of RTG with various frequencies and mechanical outline.

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 80 degree C (-45C to 70 degree C when Dual radar is used) and SIRA 14 ATEX 2056X - Ex II 1 G Ex ia IIC T4 Ta: -45C to 80 degree C (-45C to 70 degree C when Dual radar is used);

RCM-300/HCM-300: IECEx DNV 22.0039X - [Ex ia Ga] IIC Ta: -15C to 70 degree C and DNV 22 ATEX 82891 X - [Ex ia Ga] IIC Ta: -15C to 70 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 2026 Marine Vessels Rules. Accordingly, documentation is to be maintained and made available to ABS on request in accordance with 4-9-3/Table 3 of the 2026 Marine Vessels Rules and witness testing by an ABS Surveyor is to be carried out as detailed in 4-9-3/Table 5 of the 2026 Marine Vessels Rules.

3.All electrical equipment intended for installation in hazardous areas is to be certified as a safe type, based on the hazardous area classification at its installation location. The Ex certification provided for such equipment must demonstrate compliance with the latest applicable IEC 60079 series standards. Relevant Ex certificates are to be

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Tier: 3 - Type Approved, unit certification not required

submitted to the ABS Surveyor & Engineering for verification on a casebycase basis.

Notes/Drawing/Documentation:

-----DECLARATION-----

Drawing No. Declaration Of Conformity, Declaration of Conformity for Renewal GL-300 signed, Revision: New, Pages: 1

Drawing No. La/ETM/Oppd/KM/, Declaration concerning IACS E10 Rev.9, Revision: -, Pages: 2

-----TOPOLOGY-----

Drawing No. 394855, 394855B_Multifunction system with dual radar, Revision: B, Pages: 1

-----SOFTWARE HISTORY-----

Drawing No. 110-0081373, 110-0081373 Sw rev TCU-RCM-HCM, Revision: A, Pages: 5

-----TEST REPORT-----

Drawing No. E15308.02, E15308-02 285039 DZ1x0 EMC_ENV rapport R02, Lab: Nemko Group(AS) Dated: 2016-07-25, Revision: 2, Pages: 44

Drawing no. REP007416B, PRJ0069543 REP007416B TRF MAR, Lab: Nemko Group(AS) Dated: 2025-01-17, Revision:0, Pages:76

Drawing No. E13227, E13227-00 GLA-310/5 UG-955 233030 TRF MAR, Lab: Nemko Group(AS) Dated: 2013-10-02, Revision: Issue 1, Pages: 19

Drawing No. E17118, E17118-00 330633 TRF MAR EMC ENV GLH-320 and GT406, Lab: Nemko Group(AS) Dated: 2017-09-22, Revision: Issue 1, Pages: 56

Drawing No. E09680, E09680 EMC and Environmental Test report GL300, Lab: Nemko Group(AS) Dated: 2009-06-24, Revision: Issue 1, Pages: 65

Drawing No. E21214, E21214 TRF EMC GLK-300, Lab: Nemko Group(AS) Dated: 2021-11-01, Revision: Issue 1, Pages: 19

-----EX CERTIFICATE-----

Drawing No. IECEx DNV 22.0039X, iecex_dnv_22.0039x-issue-1, Revision: Issue 1, Pages: 5

Drawing No. IECEx PRE 14.0053X, iecex_pre_14.0053x-iss.3, Revision: Issue 3, Pages: 5

Drawing No. IECEx SIR 14.0025X, iecex_sir_14.0025x_issue-4, Revision: Issue 4, Pages: 5

Drawing No. IECEx PRE 14.0005, iecex-pre-14.0005-issue-3, Revision: 3, Pages: 4

Drawing No. IECEx SIR 14.0024X, IECEx_SIR_14.0024X Iss 4, Revision: Issue 4, Pages: 5

Drawing No. Sira 14ATEX2054X, Sira 14ATEX2054X Iss 4, Revision: Issue 4, Pages: 5

Drawing No. Presafe 14 ATEX 4368, presafe-14-atex-4368-issue-4-signert, Revision: 4, Pages: 3

Drawing No. Presafe 14 ATEX 5412X, presafe-14-atex-5412-x-issue-4-sign, Revision: Issue 4, Pages: 4

Drawing No. Sira 14ATEX2056X, sira-14atex2056x-iss-5, Revision: Issue 5, Pages: 7

Drawing No. DNV 22 ATEX 82891X, dnv-22-atex-82891x-issue-1-sign2, Revision: Issue 1, Pages: 4

-----DATASHEETS-----

Drawing No. 436580, 436580B_GLH320_datasheet, Revision: B, Pages: 2

Drawing No. P-GLA300H/CE, P-GLA300H/CE_H_new, Revision: H, Pages: 2

Drawing No. 435445, 435445_C_GLA310/5-LH2, Revision: C, Pages: 2

Drawing No. 442205, 442205_H_GLA310/5 DUAL, Revision: H, Pages: 2

Drawing No. 411509, 411509C_GLA310/5-NH3_new, Revision: C, Pages: 2

Drawing No. P-GLA300HS/CE, P-GLA300HS/CE_H, Revision: H, Pages: 2

Drawing No. 394663, 394663_F_GLA310/5-G, Revision: F, Pages: 2

Drawing No. P-GLA300/CE, P-GLA300/CE_G, Revision: G, Pages: 2

Drawing No. 371645, 371645, Revision: E, Pages: 2

Drawing No. 383758, 383758_GLA310/5_G, Revision: G, Pages: 2

Drawing No. P-GC300/CE, P-GC300/CE_K, Revision: K, Pages: 2

Drawing No. P-DZ110U/CE, P-DZ110U/CE_C, Revision: C, Pages: 2

Drawing no. P-TCU300/CE, P-TCU300/CE_B ,Revision: B, Pages:2

Drawing no. P-RCM300/CE, P-RCM300/CE_B ,Revision: B, Pages:2

Drawing no. P-HCM300/CE, P-HCM300/CE_B, Revision: B, Pages:2

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Drawing no. P-GLK300/CE, P-GLK300/CE_K, Revision: Rev. K, Pages:2

Terms of Validity:

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STANDARDS

ABS Rules:

2026 Rules for Conditions of Classification : 1-1-4/7.7, 1-1-A3, 1-1-A4 which covers the following:

2026 Rules for Building and Classing Marine Vessels(2026): 4-9-9/13.

2025 Rules for Conditions of Classification, Part 1B - Offshore Units and Structures 1-1-4/9.7, 1-1-A2, 1-1-A3, which cover the following:

2026 Mobile Offshore Units Rules: 4-2-3/3, 4-3-1/15, 4-3-1/17.

National:

NA

International:

IACS UR E10 Revision 8

IEC 60092-504: 2016

IEC 60079-0: 2017

Government:

NA

EUMED:

NA

OTHERS:

NA