



# TYPE APPROVAL CERTIFICATE

Certificate No:  
**TAA000010Z**  
Revision No:  
**3**

## This is to certify:

**That the Level Transmitter**

with type designation(s)  
**GL-300**

Issued to

**Kongsberg Maritime AS**  
**Ranheim, Norway**

is found to comply with

**DNV GL rules for classification – Ships, offshore units, and high speed and light craft**

## Application :

**Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.**

Location classes:

Temperature	D
Humidity	B
Vibration	A
EMC	B
Enclosure	C

Issued at **Høvik** on **2021-07-01**

This Certificate is valid until **2023-06-30**.

DNV local station: **Trondheim**

Approval Engineer: **Jens Erling Bråten**



for **DNV**

Digitally Signed By: **Lisbeth Iversland**

Location: **DNV Høvik, Norway**

on behalf of

**Jan Tore Grimsrud**  
**Head of Section**

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.



Form code: TA 251

Revision: 2021-03

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 Certificate No: TAA000010Z  
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**Product description**

Tank Monitoring Modules, GL-300, consisting of:

Signal Processing Unit	GLK-300
Radar Tank Gauge including Radar Modem and Control Unit	GLA-300 GLH-320
Radar Tank Gauge including Radar Modem and Control Unit	GLA-310-xx* GLH-320
Radar Tank Gauge	GLA310/5-LH2
Radar Tank Gauge	GLA310/5-NH3
Radar Tank Gauge	GLA310/5-TOP
Radar Tank Gauge	GLA310/5-DUAL
Radar Tank Gauge	GLA310/5-G
Cargo Temperature Unit	GC-300, GC-306

The following versions for the embedded software are covered by the certificate:

- GLK-300 DSP Signal processing software ver.1.1.x
- GLB-300, GLB-310 Microwave software ver.1.0.x and GLB-320 Microwave software ver. 2.00
- GLB-300 Inert pressure software ver.1.0.x
- GCB-303 temperature software ver.1.0.x

(\* ) The term GLA-310-xx is referring to the retrofit solution where a GLH-320 card is mounted in an existing tank gauge unit of type GLA90, GLA100 or GLA120

**Places of manufacture**

Kongsberg Maritime AS Trondheim,  
 Skonnertvegen 1,  
 7005 Trondheim,  
 NORWAY

**Approval conditions**

The Type Approval covers hardware (with firmware) as listed under Product description. When the hardware is used in applications to be classed by DNV GL, documentation for the actual application is to be submitted for approval by the manufacturer of the application system in each case. Reference is made to DNV GL rules for classification of ships Pt.4 Ch.9 Control and monitoring systems.

The following documentation of the actual application is to be submitted for approval in each case:

- Reference to this Type Approval Certificate
- System block diagram
- Power supply arrangement (may be part of the System block diagram)

As long as the GL-300 transmitter modules are used in a configuration together with the K-Chief system, (K-Gauge, K-Chief 600 or K-Chief 700), and the interface is tested during the K-Chief test, the equipment will be considered as covered by the K-Chief systems product certificate. The above documentation requirements may be covered by the K-Chief documentation.

The revision history for each software application is listed in document:

386310 SW revision history for GL-300, issue J, dated 2018-10-25

When the type approved software is revised (affecting all future deliveries) DNV GL is to be informed by forwarding updated software version documentation. If the changes are judged to affect functionality for which rule requirements apply a new functional type test may be required and the certificate may have to be renewed to identify the new software version.

**Application/Limitation**

Ex installations to be approved in each case according to the Rules and Ex-Certification/ Special Condition for Safe Use listed in valid Ex-certificate issued by a notified/recognized Certification Body.

Ex-certification is not covered by this certificate and the following paragraph, which is for information only, is based on information received from the manufacturer, but not verified by DNV GL.

Information on Ex-Certification received from manufacturer – Not verified by DNV GL		
Equipment	Marking	Certificate No.
GLK-300	Ⓜ II (1)G [Ex ia Ga] IIC, Ta = -15°C to 70°C	Presafe 14ATEX5412X, Issue 3

		[Ex ia Ga] IIC, Ta = -15°C to 70°C	IECEX PRE 14.0053X, Issue 2
GLA-300, GLA-310	Ⓔ II 1G	Ex ia IIC T4 Ga, Ta = -45°C to 85°C	Sira 14ATEX2056X, Issue 1
		Ex ia IIC T4 Ga, Ta = -45°C to 85°C	IECEX SIR 14.0025X, Issue 1
GC-300, GC-306	Ⓔ II 1G	Ex ia IIC T4 Ga, Ta = -45°C to 85°C	Sira 14ATEX2054X, Issue 2
		Ex ia IIC T4 Ga, Ta = -45°C to 85°C	IECEX SIR 14.0024X, Issue 2

### Type Approval documentation

#### Environmental and EMC test reports:

- Nemko E09680.00 issued 2009-06-24
- Nemko E10017.00 issued 2010-01-19
- Nemko 209536 rev.02 issued 2012-08-21
- Nemko E17118.00 issued 2017-09-22
- Nemko E16236.00 issued 2016-11-14
- Nemko E13277.00 issued 2013-10-02
- 443392 rev. A, K-Gauge CTS Statement vibration GLA-310/5 Dual
- 443414 rev. A, Vibration report GLA-310/5 Dual

386310 SW revision history for GL-300, issue J, dated 2018-10-25

#### CD with complete type approval documentation:

"TA documentation for certificate application of GL-300", issue F, dated 2011-11-09

#### Product data sheets:

- P-GC300/CE Rev. J
- P-GLA300/CE Rev. F
- P-GLA300H/CE Rev. F
- 436580 Rev. B, GLH-320 RADAR ELECTRONIC UNIT.
- P-GLK300/CE Rev. I
- 376020 Rev. B, 2020-11-23
- 371645 Rev. D (GC306)
- P-GLA300HS/CE Rev. E
- 383758 Rev. F GLA-310/5
- 394663 Rev. E GLA-310/5-G
- 386773 Rev. B, K-Gauge TOP
- 411509 Rev. B, GLA-310/5 NH3
- 435445 Rev. B, GLA-310/5 LH2
- 442205 Rev. E, GLA-310/5 DUAL
- 394855 Rev. B, dated 2020-04-2020

TA renewal assessment report for TAA000010Z, DNV GL Trondheim, dated 2020-12-11

### Tests carried out

Applicable tests according to Standard for Certification No. 2.4, April 2006.

Functional test according to Type Approval Test Procedure, GL-300 Tank Monitoring, rev.D, dated 2009-06-08.

GLA-300, GLA-310, GLH-320, GC-300 and GC-306:

Applicable tests according to class guideline DNVGL-CG-0339, December 2019.

### Marking of product

The products to be marked with:

- manufacturer name
- model name
- serial number
- power supply ratings



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### **Periodical assessment**

The scope of the periodical assessment is to verify that the conditions stipulated for the type are complied with, and that no alterations are made to the product design or choice of systems, software versions, components and/or materials.

The main elements of the assessment are:

- Ensure that type approved documentation is available
- Inspection of factory samples, selected at random from the production line (where practicable)
- Review of production and inspection routines, including test records from product sample tests and control routines
- Ensuring that systems, software versions, components and/or materials used comply with type approved documents and/or referenced system, software, component and material specifications
- Review of possible changes in design of systems, software versions, components, materials and/or performance, and make sure that such changes do not affect the type approval given
- Ensuring traceability between manufacturer's product type marking and the type approval certificate

A renewal assessment will be performed at renewal of the certificate.

END OF CERTIFICATE