



1 **EU-TYPE EXAMINATION CERTIFICATE**

2 Equipment intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU

3 Certificate Number: **Sira 14ATEX2056X** Issue: **2**

4 Equipment: **Radar Tank Gauge GLA-300 and Radar Tank Gauge GLA-310**

5 Applicant: **Kongsberg Maritime AS**

6 Address: Trondheim
Skonnertvegen 1
NO-7053 Ranheim
Norway

7 This equipment and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

8 CSA Group Netherlands B.V., Notified Body Number 2813 in accordance with Articles 17 and 21 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in the confidential reports listed in Section 14.2.

9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the schedule to this certificate, has been assured by compliance with the following documents:

EN 60079-0:2012

EN 60079-11:2012

10 If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to Specific Conditions of Use identified in the schedule to this certificate.

11 This EU-Type Examination Certificate relates only to the design and construction of the specified equipment. If applicable, further requirements of this Directive apply to the manufacture and supply of this equipment.

12 The marking of the equipment shall include the following:



II 1 G

Ex ia IIC T4 Ga

Ta = -45°C to +85°C

Ta = -45°C to +80°C (when fitted with the GLH – 320)

Project Number 1742

Signed: 

Title: Director of Operations

This certificate and its schedules may only be reproduced in its entirety and without change

CSA Group Netherlands B.V.
Utrechtseweg 310,
6812 AR, Arnhem,
Netherlands



SCHEDULE

EU-TYPE EXAMINATION CERTIFICATE

**Sira 14ATEX2056X
Issue 2**

13 DESCRIPTION OF EQUIPMENT

The GLA-300 and GLA-310 Radar Tank Gauges are intrinsically safe level gauging sensors comprising an integral inert GT-450 pressure transmitter, enclosed in a stainless steel housing. They have digital communication (RS-485 and HART) to processing equipment in the non-hazardous area.

The pressure transmitter electronics is completely separated from the level gauging sensor electronics.

The GLA-310 Radar Tank Gauge is identical to the GLA-300 unit, except that it does not include the pressure transmitter or the HART output.

The GLA-300 and GLA-310 can be supplied with a variety of different stainless steel enclosures.

The GLA-300 and GLA-310 can be fitted with one of the following antenna arrangements: parabola antenna, horn antenna open measurement, horn antenna standpipe measurement or planar antenna.

The GLA-300 and GLA-310 may be fitted with an alternative electronics module, namely a GLH-320, which contains a GLB-320 printed circuit board (PCB). The GLH-320 is similar to the GLH-300 except that the HART circuit has been removed and HART through connectors fitted in place of it. With the GLH-320, the pressure sensor is not specified as part of the equipment as it is the end user that selects and installs it, as a specific condition of use.

The equipment has the following entity parameters:

X1 from associated apparatus (typically GLK-300)			X200 (GLH-300) to pressure sensor	X202 (GLH-300) X3, X4 (GLH-320) to cargo temperature unit (typically GC- 300)/Pressure
POWER (GLH-300 – X1 Pins 5 and 6) (GLH-310 – X1 Pins 3 and 4) (GLH-320 - X1 Pins 1 and 2)	HART (GLH-300 – X1 Pins 1 and 2) (GLH-320 – X2 Pins 1 and 2)	RS-485 (GLH-300 – X1 Pins 3 and 4) (GLH-310 - X1 Pins 1 and 2) (GLH-320 – X1 Pins 3 and 4)		
$U_i = 14.3V$ I_i (GLH-300 and GLH-310) = 560mA I_i (GLH-320) = 360mA $P_i = 2.1W$ $C_i = 75nF$ $L_i = \text{Negligible}$	$U_i = 28V$ $I_i = 160mA$ $P_i = 850mW$ $C_i = \text{Negligible}$ $L_i = \text{Negligible}$	$U_i = 7.0V$ $I_i = 100mA$ $P_i = 120mW$ C_i (GLH-300 and GLH-310) = Negligible C_i (GLH-320) = 1.1nF $L_i = \text{Negligible}$	$U_o = 6.51V$ $I_o = 6.8mA$ $P_o = 44.4mW$ $C_i = 133nF$ $C_o = 21.8\mu F$ $L_i = \text{Negligible}$ $L_o = 48.7mH$	$U_o = 28V$ $I_o = 160mA$ $P_o = 850mW$ $C_i = 0$ $C_o = 83nF$ $L_i = \text{Negligible}$ $L_o = 1388\mu H$

- GLH-310 does not include the pressure sensor, the cargo temperature unit or the HART connections

The GLA-300 and GLA-310 is designed for use in the GL-300 Tank Monitoring system, but the list of safety parameters allows connection to other equipment.

The maximum ambient temperature for the GLA-300 and GLA-310 incorporating GLH-300 and GLH-310 modules is 85°C whereas the maximum ambient temperature for the GLA-300 and GLA-310 incorporating GLH-320 modules is 80°C.



SCHEDULE

EU-TYPE EXAMINATION CERTIFICATE

Sira 14ATEX2056X
Issue 2

Variation 1 - This variation introduced the following changes:

- i. Introduction of a new alternative type GLH-320 Module in the Radar Tank Gauges GLA-300 and GLA-310 the description was modified accordingly. As a result, Specific Conditions of Use were added. The ambient temperature was amended when the GLH – 320 is fitted.
- ii. Change of manufacturer's address:

From	To
Haakon VIIIs gt. 4	Trondheim
N-7005 Trondheim	Skonnertvegen 1
Norway	NO-7053 Ranheim
	Norway
- iii. Removal of EN 60079-26 from the list of standards

14 DESCRIPTIVE DOCUMENTS

14.1 Drawings

Refer to Certificate Annexe.

14.2 Associated Sira Reports and Certificate History

Issue	Date	Report no.	Comment
0	17 December 2014	R70004826A	The release of the prime certificate.
1	05 July 2019	R70141602A	This Issue covers the following changes: <ul style="list-style-type: none">• EC Type-Examination Certificate in accordance with 94/9/EC updated to EU Type-Examination Certificate in accordance with Directive 2014/34/EU. <i>(In accordance with Article 41 of Directive 2014/34/EU, EC Type-Examination Certificates referring to 94/9/EC that were in existence prior to the date of application of 2014/34/EU (20 April 2016) may be referenced as if they were issued in accordance with Directive 2014/34/EU. Variations to such EC Type-Examination Certificates may continue to bear the original certificate number issued prior to 20 April 2016.)</i> The introduction of Variation 1.
1	15th October 2019	1742	<ul style="list-style-type: none">• Transfer of certificate Sira 14ATEX2056X from Sira Certification Service to CSA Group Netherlands B.V..

15 SPECIAL CONDITIONS FOR SAFE USE (denoted by X after the certificate number)

- 15.1 Under certain extreme circumstances, the non-metallic parts incorporated in the enclosure of this equipment may generate an ignition-capable level of electrostatic charge. Therefore the equipment shall not be installed in a location where the external conditions are conducive to the build-up of electrostatic charge on such surfaces. This is particularly important if the equipment is installed in a zone 0 location. In addition, the equipment shall only be cleaned with a damp cloth.
- 15.2 The circuit ground is connected to the enclosure of the equipment, so the equipment does not meet the 500 Vac circuit-to-enclosure isolation requirements. This shall be considered during installation. Refer to instructions in the safety manual.

This certificate and its schedules may only be reproduced in its entirety and without change

CSA Group Netherlands B.V.
Utrechtseweg 310,
6812 AR, Arnhem Netherlands



SCHEDULE

EU-TYPE EXAMINATION CERTIFICATE

**Sira 14ATEX2056X
Issue 2**

15.3 The Radar Tank Gauge GLA-300 and Radar Tank Gauge GLA-310 shall only be connected to associated apparatus that has a trapezoidal output characteristic.

16 ESSENTIAL HEALTH AND SAFETY REQUIREMENTS OF ANNEX II (EHSRs)

The relevant EHSRs that are not addressed by the standards listed in this certificate have been identified and individually assessed in the reports listed in Section 14.2.

Certificate Annexe



Certificate Number: Sira 14ATEX2056X
Equipment: Radar Tank Gauge GLA-300 &
Radar Tank Gauge GLA-310
Applicant: Kongsberg Maritime AS

Issue 0

Drawing no.	Sheets	Rev.	Date (Sira stamp)	Title
341106	1 to 3	B	1 Dec 14	PCB Specification and Build-up (GLB-310)
341108	1 to 4	B	1 Dec 14	Bill of Material (GLB-310)
386250	1 of 1	A	1 Dec 14	Lens for GLA-310/5
386381	1 of 1	B	1 Dec 14	GLA-310/5 Assembly
399512	1 to 4	A	1 Dec 14	GLA-300/GLA-310. Radar variant overview
399801	1 to 3	A	1 Dec 14	GT450 design criteria
7212-462.000	1 to 6	B	8 Dec 14	GLB-300 PCB artwork
7212-462.900	1 of 2	B	8 Dec 14	GLB-300 PCB specification and layer stack-up
7212-462.901	1 to 6	A	8 Dec 14	GLB-300 Bill of Materials
7212-463.000	1 to 6	B	8 Dec 14	GLB-310 PCB artwork
DLT6109	1 of 1	E	1 Dec 14	FMCW Radar Module Dimensional
DLT6118	1 of 1	D	1 Dec 14	FMCW Radar Module Dimensional
DLT6143	1 of 1	PB1	1 Dec 14	FMCW Radar Module Dimensional
E-2691	1 of 1	D	1 Dec 14	Laser tagging GLA-300
E-2697	1 of 1	A	1 Dec 14	Serial no. Sticker GLH-300
E-2699	1 of 1	C	1 Dec 14	Type Plate for GLA-310
E-2700	1 of 1	A	1 Dec 14	Serial number sticker for GLH-310
GL-2026	1 of 1	A	1 Dec 14	Protection plate GL-100 (PTFE with carbon grid)
GL-2110	1 of 1	C	1 Dec 14	Cover for feed detail
GL-2146	1 of 1	C	1 Dec 14	Offset parabol feed
GL-2189	1 of 1	A	1 Dec 14	PTFE TFM Bolt detail
GL-2458	1 of 1	C	1 Dec 14	GLA-300/P Assembly
GL-2462	1 of 1	C	1 Dec 14	GLB-300, Schematics Radar Block
GL-2513	1 of 1	C	1 Dec 14	Safety Control Drawing (GLK-300 - GLH-300)
GL-2539	1 of 1	A	1 Dec 14	GLH-300 Tank Electronic Unit
GL-2548	1 of 1	B	1 Dec 14	Radar Sensor Modem & Control Unit GLB-310
GL-2550	1 to 4	A	1 Dec 14	Lens GL-2550 Detail
GL-2567	1 of 1	A	1 Dec 14	Safety Control (GLK-300 - GLH-310)
GL-2575	1 of 1	A	1 Dec 14	GLH-310 Tank Electronic Unit
GT-1468	1 to 3	C	1 Dec 14	GLB-300, Schematics Pressure Block
KSLT6109	1 to 4	E	1 Dec 14	10 GHz Microwave unit (Marit) Schematic
KSLT6118	1 to 4	D	1 Dec 14	24 GHz Microwave unit (Viktoria) Schematic
KSLT6143 RS3400S*	1 to 4	PB1	1 Dec 14	5 GHz FMCW radar front end

* This drawing has no drawing number; the number shown is the description

Issue 1

Drawing	Sheets	Rev.	Date (Sira stamp)	Title
425399	1 of 1	A	03 Jul 19	Protection cover
7212-507.000	1 to 5	A	03 Jul 19	PCB layout GLB-320

This certificate and its schedules may only be reproduced in its entirety and without change

CSA Group Netherlands B.V.
Utrechtseweg 310,
6812 AR, Arnhem,
Netherlands

Certificate Annexe



Certificate Number: Sira 14ATEX2056X
Equipment: Radar Tank Gauge GLA-300 &
Radar Tank Gauge GLA-310
Applicant: Kongsberg Maritime AS

Drawing	Sheets	Rev.	Date (Sira stamp)	Title
7212-507.900	1 of 1	A	03 Jul 19	PCB specification and build-up GLB-320
7212-507.9x1	1 to 4	A	03 Jul 19	BOM GLB-320
GL-2733	1 of 1	A	03 Jul 19	GLB-320 Schematics
GL-2734	1 of 1	A	03 Jul 19	GLM-24 Schematics
GL-2736	1 of 1	A	03 Jul 19	GLH-320 Tank Electronic Unit
E-2770	1 of 1	B	03 Jul 19	Laser tagging radar product with GLH-320
7212-514.901	1 to 2	A	03 Jul 19	BOM GLM-24
7212-514.000	1 to 5	A	03 Jul 19	PCB Layout GLM-24
7212-514.900	1 of 1	A	03 Jul 19	PCB spec and build GLM-24
GL-2742	1 of 1	A	03 Jul 19	RTG Unit GLA 300 Radar Tank Gauging System

This certificate and its schedules may only be reproduced in its entirety and without change

CSA Group Netherlands B.V.
Utrechtseweg 310,
6812 AR, Arnhem,
Netherlands