



# IECEX Certificate of Conformity

## INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit [www.iecex.com](http://www.iecex.com)

Certificate No.: **IECEX NEM 12.0011X** issue No.: **0** Certificate history: \_\_\_\_\_

Status: **Current**

Date of Issue: **2012-08-31** Page 1 of 3

Applicant: **Kongsberg Maritime AS**  
Haakon VII's gt. 4  
7041 Trondheim  
Norway  
**Norway**

Electrical Apparatus: **Level Gauging Processing Unit**  
Optional accessory:

Type of Protection: **Intrinsically safe associated apparatus**

Marking: **[Ex ia] IIC Ta:55°C**

Approved for issue on behalf of the IECEx Certification Body: **Asle Kaastad**

Position: **Certification Manager**

Signature:  
(for printed version)

Asle Kaastad

Date:

2012-10-29

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the **Official IECEx Website**.

Certificate issued by:

**NEMKO**  
Gautadelleen 30  
Oslo N-0314  
Norway





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Manufacturer: **Kongsberg Maritime AS**  
Haakon VII's gt. 4  
7041 Trondheim  
Norway  
**Norway**

Manufacturing location(s):

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

#### STANDARDS:

The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

**IEC 60079-0 : 2007-10** Explosive atmospheres - Part 0: Equipment - General requirements  
Edition: 5

**IEC 60079-11 : 2006** Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"  
Edition: 5

*This Certificate **does not** indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.*

#### TEST & ASSESSMENT REPORTS:

*A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in*

Test Report:

NO/NEM/ExTR12.0014/00

Quality Assessment Report:

NO/NEM/QAR06.0004/04



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## Schedule

### EQUIPMENT:

*Equipment and systems covered by this certificate are as follows:*

The **GLK-100** Level Gauging Processing Unit comprises an intrinsically safe power supply and signal communication lines for a Level Gauging Sensor and additionally four intrinsically safe output circuits for pressure/temperature sensors. The GLK-100 unit is a part of a complete level gauging system and intended for use in ships.

Further description and safety data in the attached Annex to this certificate

### CONDITIONS OF CERTIFICATION: YES as shown below:

GLK-100 is to be mounted in a control cabinet, according to the manufacturers instruction document AU-1212, as a part of a level gauging system manufactured and completed by Kongsberg AS.

GLK-100 may be used together with the certified intrinsically safe Level Gauging Sensor GLA100/ and GLA-120/.

Cable connections according to the installation drawing 374418.

Cables containing more than one of the intrinsically safe output circuits of the unit must comply with the requirements of IEC 60079-25, type A or B.



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### Description of Equipment.

The **GLK-100** Level Gauging Processing Unit comprises an intrinsically safe power supply and signal communication lines for a Level Gauging Sensor and additionally four intrinsically safe output circuits for pressure/temperature sensors. The GLK-100 unit is a part of a complete level gauging system and intended for use in ships.

### Data and Safety Parameters

#### Output for Level Radar, Terminals X81

##### Power Supply, Terminals X81:2-1

Maximum output voltage	$U_0$ :15,6 V
Maximum output current	$I_0$ :397 mA
Maximum output power	$P_0$ :2,1 W
Maximum external capacitance	$C_0$ :497 nF
Maximum external inductance	$L_0$ :40 $\mu$ H
Maximum ratio $L_0/R_0$	$L_0/R_0$ :17 $\mu$ H/ $\Omega$

##### Signal Supply, Terminals X81:2-3,-5,-6,-7,-8

Maximum output voltage	$U_0$ :7,4 V
Maximum output current	$I_0$ :0,8 mA
Maximum output power	$P_0$ :1,5 mW
Maximum external capacitance	$C_0$ :11,9 $\mu$ F
Maximum external inductance	$L_0$ :1000 mH

##### Signal Supply, Terminal X81: 2-4

Maximum output voltage	$U_0$ :10,5 V
Maximum output current	$I_0$ :11,5 mA
Maximum output power	$P_0$ :30 mW
Maximum external capacitance	$C_0$ :2,4 $\mu$ F
Maximum external inductance	$L_0$ :250 mH

As the power supply terminals and signal terminals are connected to the same circuitry of the level radar unit the limiting figures to consider is those of the power supply output terminal X81.1



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### Pressure/Temperature Sensors, Terminals X51, X52, X53, X54

Maximum output voltage	$U_o: 21 \text{ V}$
Maximum output current	$I_o: 147 \text{ mA}$
Maximum output power	$P_o: 0,77 \text{ W}$
Maximum external capacitance	$C_o: 188 \text{ nF}$
Maximum external inductance	$L_o: 1,5 \text{ mH}$
Maximum ratio $L_o/R_o$	$L_o/R_o: 46 \mu\text{H}/\Omega$

Nominal supply power for the non intrinsically safe terminals  $U_n: 24\text{V}$

Maximum safe voltage for the non intrinsically safe terminals  $U_m: 250\text{V AC}$

Range of Ambient Temperature:  $+5^\circ\text{C} \leq T_a \leq +55^\circ\text{C}$

### Special Conditions for safe Use

GLK-100 is to be mounted in a control cabinet, according to the manufacturers instruction document AU-1212, as a part of a level gauging system manufactured and completed by Kongsberg AS.

GLK-100 may be used together with the certified intrinsically safe Level Gauging Sensor GLA100/ and GLA120/.

Cable connections according to the installation drawing 374418.

Cables containing more than one of the intrinsically safe output circuits of the unit must comply with the requirements of IEC 60079-25, type A or B