

## Type Approval Certificate

This is to certify that the undernoted product(s) has/have been tested with satisfactory results in accordance with the relevant requirements of the Lloyd's Register Type Approval System.

<b>Manufacturer</b>	<b>Kongsberg Maritime AS</b>
<b>Address</b>	Skonnertvegen 1, 7053 Ranheim, Norway
<b>Type</b>	Control Systems
<b>Description</b>	<p>GL-300 Tank Gauging System is a radar based tank gauging system for tank monitoring in oil, product and chemical tankers.</p> <p>GL-300 consists of:</p> <ul style="list-style-type: none"><li>GLA-300 Radar Tank Gauge</li><li>GLH-310 Radar Tank Gauge Electronic Unit (integrated in GLA-300)</li><li>GLH-320 Radar Tank Gauge Electronic Unit (integrated in GLA-300)</li><li>GLK-300 Signal Processing Unit</li><li>GC-300 Cargo Tank Temperature Unit (integrated in GLA-300)</li><li>GT-406/GT-406-GLA Pressure Sensor (integrated in GLA-300)</li></ul> <p>For further details pls. refer to appendix.</p>
<b>Trade Name</b>	GL-300
<b>Application</b>	<p>Marine and Offshore applications for use in environmental categories ENV1, ENV2, ENV3 and ENV5 (1) as defined in LR Test Specification No.1, 2002 in general power distribution zones.</p> <p>(1) not valid for GLK-300</p>



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<b>Specified Standard</b>	Manufacturer's specification
<b>Ratings</b>	Maximum measuring range: 50 m Operating temperature range: -45 °C to +85 °C Protection: IP 66/67 Ex-certification: II 1 G Ex ia IIC T4
<b>Additional Tests</b>	Low temperature test (-45 °C / 16 h) of GC-300 and GLA-300 Low temperature test (-15 °C / 16 h) of GLK-300 Dry heat test (85 °C / 16 h) of GC-300 and GLA-300 Dry heat test (70 °C / 16 h) of GLK-300 Ingress protection test (IP66 & IP67) of GC-300 and GLA-300
<b>Other Conditions</b>	Final functional arrangements are to comply with appropriate Lloyd's Register Rules and will be subject to the project related Plan Approval Process.  Special conditions for Safe Use as stated in applicable Ex-certificates and the conditions of the LR Ship Rules & Regulations of Classification of Ships Part 6, Chapter 2 shall be observed when installed in hazardous areas. The Ex-certification does not form part of this certificate.

This certificate is not valid for equipment, the design, ratings or operating parameters of which have been varied from the specimen tested. The manufacturer should notify Lloyd's Register EMEA of any modification or changes to the equipment in order to obtain a valid Certificate.

The Design Appraisal Document No. HTS/ETS 39599-20/MK/TW and its supplementary Type Approval Terms and Conditions form part of this Certificate.

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## **Appendix**

### **DESCRIPTION**

Software versions covered by the certificate:  
GLK-300 DSP Signal processing software vers. 1.1.x  
GLB-310 Microwave software vers. 1.0.x  
GLB-320 Microwave software vers. 1.0.x  
GC-300 temperature software vers. 1.0.x  
GT-406 inert pressure sensor software vers. 1.0.x